KAMARAJ
COLLEGE OF ENGINEERING & TECHNOLOGY

(An Autonomous Institution - AFFILIATED TO ANNA UNIVERSITY, CHENNAI)
S.P.G.Chidambara Nadar - C.Nagammal Campus
S.P.G.C. Nagar, K.Vellakulam – 625 701 (Near VIRUDHUNAGAR).

DEPARTMENT OF INFORMATION TECHNOLOGY

VALUE ADDED COURSE DETAILS

2023-2024

R 2021

DATA SCIENCE WITH TABLEAU

31.07.2023 – 05.08.2023

Note: Soft copy of the content is shared via the following link

https://shorturl.at/nrBU5

R. Aghila

VAC Coordinator

[Dr. R. Aghila]

28/11/2023
Verified
VAC Incharge
S. Arthi Lakshmi
AP-CSE

HOD / IT

[Dr. E. Vakaimalar]

Value Added Course Details

1. Academic Year	: 2023 - 2024
2. Regulation	: R2021
3. Department Name	: Information Technology
4. Name of the Value Added Course	: Data Science with Tableau
5. Number of Credits	: 2
6. Category	: Theory / Lab / **Hands-on** / Skill Based
7. Details of the Joint Organization	: White Pixel Technologies
8. Resource Person Details	: Mr. Samson CEO, White Pixel Technologies, Madurai 9444287307 wptofficial@whitepixeltechnologies.in
9. Three Member Committee Details	: 1) Dr. E. Vakaimalar, Associate Professor & HoD / IT 2) Dr. R. Arthy, AP/IT 3) Mr. D. Vendhan, AP/IT
10. VAC Coordinator Details	: Dr. R. Aghila, Professor/IT
11. Duration	: 45 Hours
12. Period	: 31.07.2023 - 05.08.2023
13. Venue	: IBM - IT Lab

R. Aghila

VAC Coordinator

[Dr. R. Aghila]

HoD / IT

[Dr. E. Vakaimalar]

24/11/23

Dean Academic Course

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Department of Information Technology

Checklist for File Contents

Value Added Course

Data Science with Tableau

S. No.	Items	Available [Yes / No]
1	Institution Approval Copy	Yes
2	Circular	Yes
3	Syllabus Copy with Course Outcomes	Yes
4	BoS Approval	No
5	Three Member Committee MoM	Yes
6	Geo-Tagged Photos	Yes
7	Certificate of all the Participants	Yes
8	Examination Schedule	Yes
9	Question and Answer Keys	Yes
10	Attendance Sheet	Yes
11	Evaluated Answer Script	Yes
12	Test Report	Yes
13	Mark Statement	Yes
14	Grade Sheet	No
15	Feedback Form	Yes
16	Feedback Analysis & Report	Yes
17	Programme Summary / Report	Yes
18	Students Oral Feedback (Recorded Video)	Yes
19	VAC - Short Video	Yes

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Department of Information Technology

1. Institution Approval Copy

Value Added Course

on

Data Science with Tableau

KAMARAJ

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S.R.G.Chidambara Nadar - C. Nagammal Campus,
S.R.G.C. Nagar, K. Vellakulam - 625 701, Near VIRUDHUNAGAR, Madurai District.
Accredited by NAAC with 'A' Grade

Submitted to the SECRETARY for approval through the PRINCIPAL

Book No. IT

SL No. 12 Date 10/07/23

An approval for an amount of Rs 11,500/- [Rupees Eleven Thousand five hundred only] may please be granted for the Conduct of Programme Assessment Committee (PAC) meeting on 22/7/23.

Thank you

Encl:
1) List of PAC members for the year 2023 - 2024
2) Estimated Budget of PAC meeting

R. Ashwin 10/7/23
Signature of Faculty

10/7/23
HOD

10/7/23.
PRINCIPAL

OFFICE USE

1) Budget allotted : PAC meeting Exp.
2) Amount committed / Spent sofar :
3) Balance available :

OM Treasurer Secretary

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Department of Information Technology

2. Circular

Value Added Course

on

Data Science with Tableau

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DEPARTMENT OF INFORMATION TECHNOLOGY

Value Added Course on "Data Science with Tableau"

Circular

19.07.2023

Our department has planned to organize a **Value Added Course on "Data Science with Tableau"** for III year Information Technology students from **31.07.2023 to 05.08.2023.** Students are advised to attend the course with fullest energy and gain knowledge.

Venue : IT IBM Lab

Resource Person : Mr. Samson
Managing Director,
White Pixel Technologies
Madurai.

HoD / IT

[Dr. E. Vakaimalar]

To be read in:

1. III IT Class Room

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Department of Information Technology

3. Syllabus Copy with Course Outcomes

Value Added Course

on

Data Science with Tableau

White Pixel Technologies

Acquire Knowledge and Inspire the world with Technologies

A Research and Development Company
Nagamalai, Madurai – 625 019.
Mail us at: wptofficial@whitepixeltechnologies.in

Schedule for Data Science with Tableau for Beginners.

Date	Time	Topic
July 10, 2023	F.N.	Unit 1: Introduction to Data Science and Tableau – First Half
	A.N.	Unit 1: Introduction to Data Science and Tableau – Second Half
July 11, 2023	F.N.	Unit 2: Data Preparation, Analysis, and Visualization - First Half
	A.N.	Unit 2: Data Preparation, Analysis, and Visualization - Second Half
July 12, 2023	F.N.	Unit 3: Advanced Data Science Techniques - First Half
	A.N.	Unit 3: Advanced Data Science Techniques - Second Half
July 13, 2023	F.N.	MCQ Examination & Initialization of Project
	A.N.	Project
July 14, 2023	F.N.	Project
	A.N.	Completion of Project
July 15, 2023	F.N.	Preparation of Project Report
	A.N.	Evaluation

Course Outcomes:

1. Students will be able to understand the basics of Data Science and Tableau.

2. Students will understand the importance of Visualization and Analytics.

3. Students will understand the concepts of Data science techniques.

4. Students will apply quantitative modelling and data analysis techniques to solve real world problems using data visualization techniques.

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4. BoS Approval

Value Added Course

on

Data Science with Tableau

Not Included

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Department of Information Technology

5. Three Member Committee MoM

Value Added Course

On

Data Science with Tableau

S. No.	Name	Designation	Role
1	Dr. E. Vakaimalar	Associate Professor	Head of the Department
2	Dr. R. Arthy	Assistant Professor	UG Coordinator
3	Mr. D. Vendhan	Assistant Professor	Senior Faculty Member

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DEPARTPMENT OF INFORMATION TECHNOLOGY

VALUE ADDED COURSES

THREE MEMBER COMMITTEE - MEETING MINUTES

Date: 19.07.2023

A meeting regarding the execution of value added course on "Data Science with Tableau " from 31.07.2023 to 05.08.2023 was organized on 19.07.2023 among the three member committee of the value added course.

Venue: HoD Cabin **Time: 2.30 pm**

Members Present:

1. Dr. E. Vakaimalar , Associate Professor & Head/IT
2. Dr. R. Arthy, AP/IT
3. Mr. D. Vendhan, AP/IT

The minutes of the meeting is given below:

S. No.	Items discussed	Remarks
1	Accommodation, Hospitality for the Resource Person	It is planned to provide food inside the campus and hostel stay with the prior permission from Principal
2	Number of Students	III IT - 34
3	Internet Facility	Ensured the internet availability
4	Software Required	Venue is provided with sufficient number of good quality machines supporting installation of required software
5	Laptops	Students were advised to bring their own laptop if available
6	Photo Arrangement	Arranged (Geo Tagged)
7	Feedback Sessions	It is planned to receive feedback online via forms Oral feedback will be recorded after the session
8	Test	Students were intimated to be prepared for project presentation. Candidates with marks greater than 50 during assessment will be given VAC course completion certificate
9	Technicians Support	Ensured the availability of technicians
10	Venue	IT - IBM Lab
11	Attendance	Discussion on 100% attendance and it is decided that attendance entry in ERP by VAC Coordinator

R. Aghila 19/7/23

VAC Coordinator

[Dr. R. Aghila]

UG Coordinator

[Dr. R. Arthy]

HoD / IT

[Dr. E. Vakaimalar]

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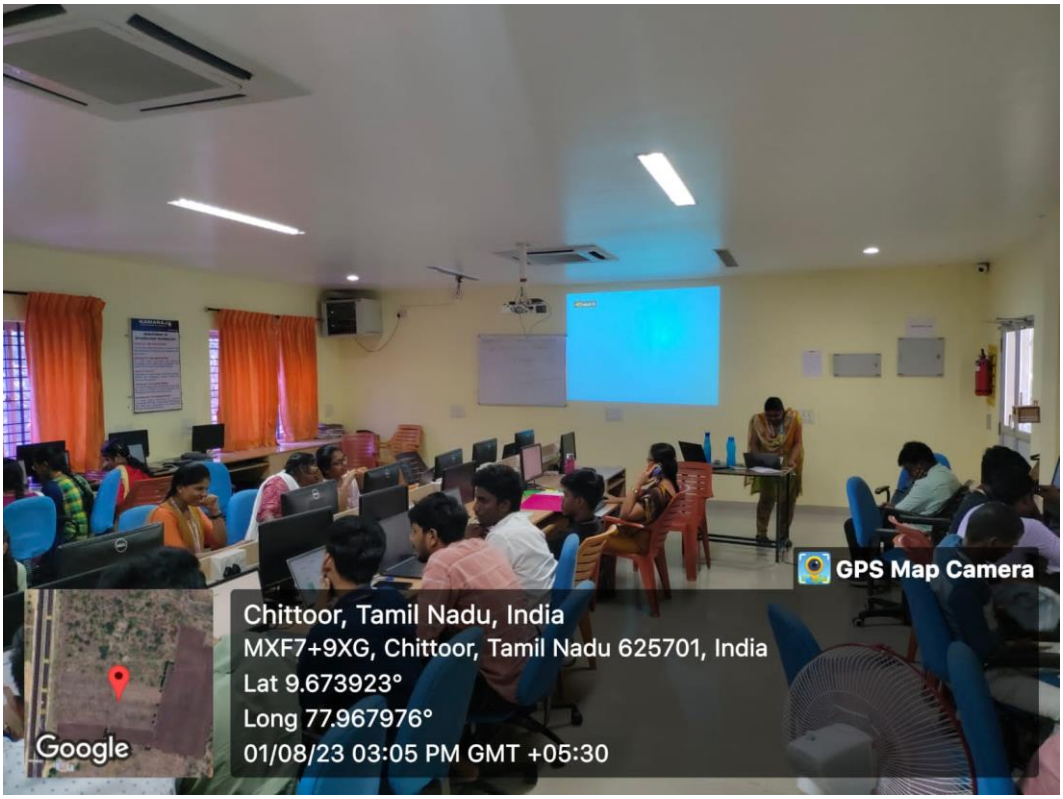
Department of Information Technology

6. Geo Tagged Photos

Value Added Course

on

Data Science with Tableau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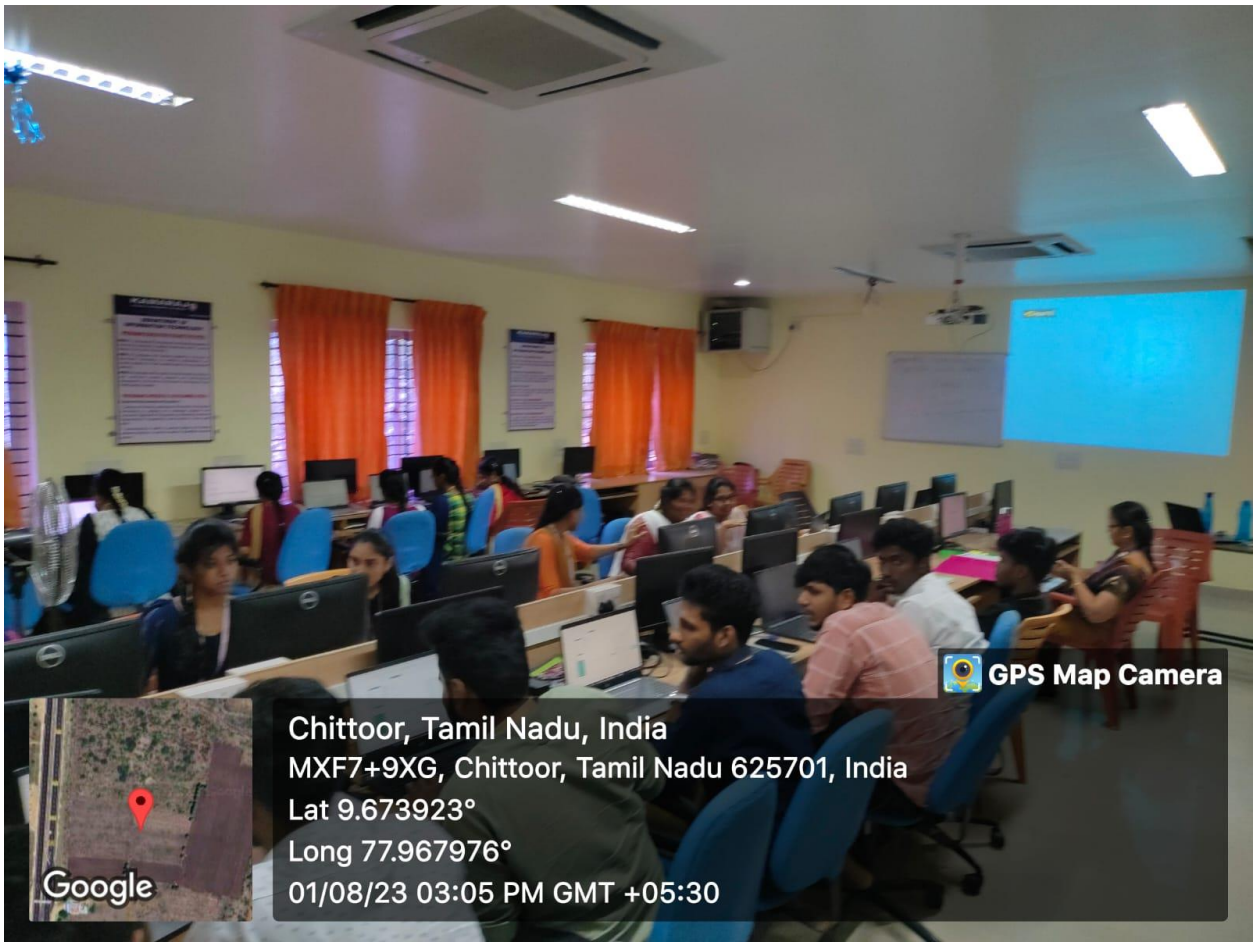
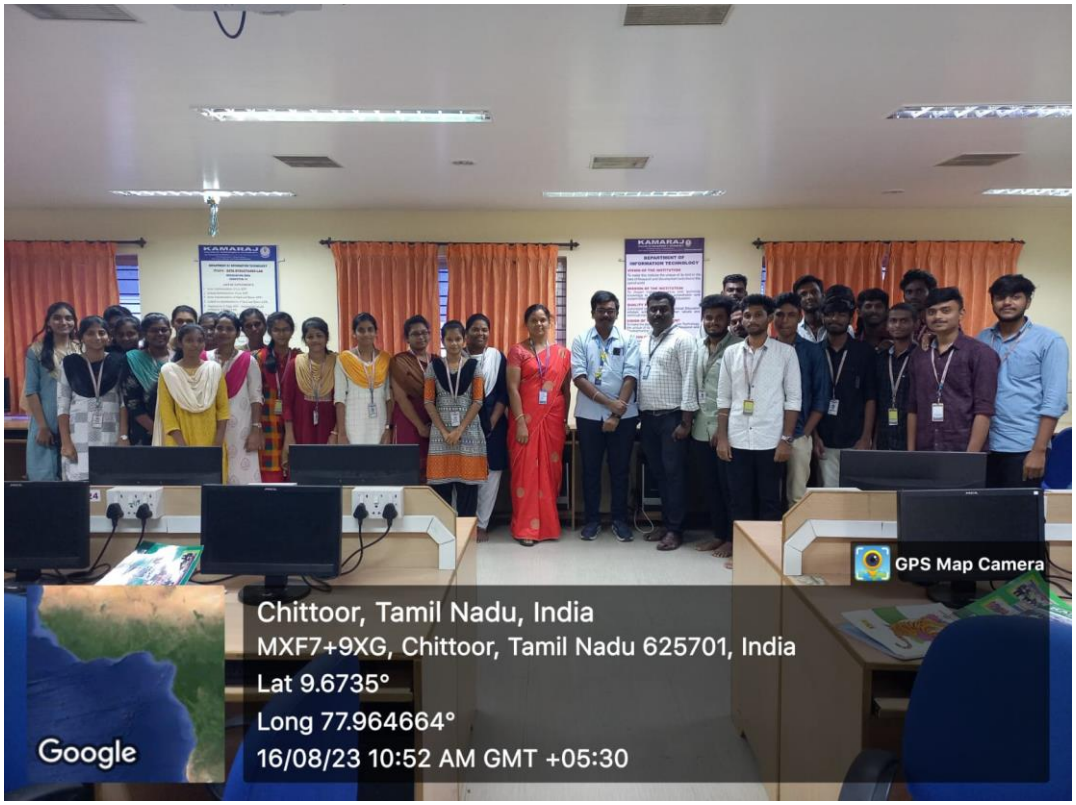
MXF7+9XG, Chittoor, Tamil Nadu 625701, India
Lat 9.673923°
Long 77.967976°
01/08/23 03:05 PM GMT +05:30
Google


GPS Map Camera
Chittoor, Tamil Nadu, India
MXF7+9XG, Chittoor, Tamil Nadu 625701, India
Lat 9.673506°
Long 77.964793°
05/08/23 03:17 PM GMT +05:30
Google


GPS Map Camera
Chittoor, Tamil Nadu, India
MXF7+9XG, Chittoor, Tamil Nadu 625701, India
Lat 9.673923°
Long 77.967976°
01/08/23 03:05 PM GMT +05:30
Google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GPS Map Camera
Chittoor, Tamil Nadu, India
MXF7+9XG, Chittoor, Tamil Nadu 625701, India
Lat 9.6735°
Long 77.964664°
16/08/23 10:52 AM GMT +05:30
Google


GPS Map Camera
Chittoor, Tamil Nadu, India
MXF7+9XG, Chittoor, Tamil Nadu 625701, India
Lat 9.673506°
Long 77.964793°
05/08/23 03:56 PM GMT +05:30
Google


GPS Map Camera
Chittoor, Tamil Nadu, India
MXF7+9XG, Chittoor, Tamil Nadu 625701, India
Lat 9.673506°
Long 77.964793°
05/08/23 03:04 PM GMT +05:30
Google


GPS Map Camera
Chittoor, Tamil Nadu, India
MXF7+9XG, Chittoor, Tamil Nadu 625701, India
Lat 9.673506°
Long 77.964793°
05/08/23 03:56 PM GMT +05:30
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Department of Information Technology

7. Certificates of All the Participants

Value Added Course

on

Data Science with Tableau

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AUTONOMOUS

Accreditation

25 YEARS

CERTIFICATE

OF COMPLETION

This is to certify that

VIGNESH.V.K

of III year has successfully completed

DATA SCIENCE WITH TABLEAU FOR BEGINNERS,

conducted from July 31, 2023 to August 5, 2023 in association with the Department of Information Technology (NBA Accredited), Kamaraj College of Engineering and Technology (Autonomous).

Assessment Mark: 78

E.Vakaimalar

Dr. E. VAKAIMALAR
HEAD OF THE DEPARTMENT

Dr. S. SENTHIL
PRINCIPAL

S. Samson

Mr. S. SAMSON
CHIEF EXECUTIVE OFFICER

Certificate ID.: 23CC1184

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AUTONOMOUS

Accreditation

25 YEARS

CERTIFICATE

OF COMPLETION

This is to certify that

SUBASHINI.K

of III year has successfully completed

DATA SCIENCE WITH TABLEAU FOR BEGINNERS,

conducted from July 31, 2023 to August 5, 2023 in association with the Department of Information Technology (NBA Accredited), Kamaraj College of Engineering and Technology (Autonomous).

Assessment Mark: 91

E. Vakaimalar

Dr. E. VAKAIMALAR
HEAD OF THE DEPARTMENT

Dr. S. SENTHIL
PRINCIPAL

S. Samson

Mr. S. SAMSON
CHIEF EXECUTIVE OFFICER

Certificate ID.: 23CC1185

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AUTONOMOUS

Accreditation

25 YEARS

CERTIFICATE

OF COMPLETION

This is to certify that

MATHUMITHA.V

of III year has successfully completed

DATA SCIENCE WITH TABLEAU FOR BEGINNERS,

conducted from July 31, 2023 to August 5, 2023 in association with the Department of Information Technology (NBA Accredited), Kamaraj College of Engineering and Technology (Autonomous).

Assessment Mark: 91

E. Vakaimalar

Dr. E. VAKAIMALAR
HEAD OF THE DEPARTMENT

Dr. S. SENTHIL
PRINCIPAL

S. Samson

Mr. S. SAMSON
CHIEF EXECUTIVE OFFICER

Certificate ID.: 23CC1186

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AUTONOMOUS

Accreditation

NAAC

25 YEARS

CERTIFICATE

OF COMPLETION

This is to certify that

KALAISELVI . K

of III year has successfully completed

DATA SCIENCE WITH TABLEAU FOR BEGINNERS,

conducted from July 31, 2023 to August 5, 2023 in association with the Department of Information Technology (NBA Accredited), Kamaraj College of Engineering and Technology (Autonomous).

Assessment Mark: 91

E. Vakaimalar

Dr. E. VAKAIMALAR
HEAD OF THE DEPARTMENT

Dr. S. SENTHIL
PRINCIPAL

S. Samson

Mr. S. SAMSON
CHIEF EXECUTIVE OFFICER

Certificate ID.: 23C1187

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AUTONOMOUS

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NAAC

25 YEARS

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OF COMPLETION

This is to certify that

YAZHINI.D.S

of III year has successfully completed DATA SCIENCE WITH TABLEAU FOR BEGINNERS, conducted from July 31, 2023 to August 5, 2023 in association with the Department of Information Technology (NBA Accredited), Kamaraj College of Engineering and Technology (Autonomous).

Assessment Mark: 91

E. Vakaimalar

Dr. E. VAKAIMALAR
HEAD OF THE DEPARTMENT

Dr. S. SENTHIL
PRINCIPAL

S. Samson

Mr. S. SAMSON
CHIEF EXECUTIVE OFFICER

Certificate ID.: 23CC1188

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This is to certify that

RAMYAA SHRI. K

of III year has successfully completed

DATA SCIENCE WITH TABLEAU FOR BEGINNERS,

conducted from July 31, 2023 to August 5, 2023 in association with the Department of Information Technology (NBA Accredited), Kamaraj College of Engineering and Technology (Autonomous).

Assessment Mark: 96

E. Vakaimalar

Dr. E. VAKAIMALAR
HEAD OF THE DEPARTMENT

Dr. S. SENTHIL
PRINCIPAL

S. Samson

Mr. S. SAMSON
CHIEF EXECUTIVE OFFICER

Certificate ID.: 23CC1189

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AUTONOMOUS

Accreditation

25 YEARS

CERTIFICATE

OF COMPLETION

This is to certify that

RAJESH . R . M

of III year has successfully completed

DATA SCIENCE WITH TABLEAU FOR BEGINNERS,

conducted from July 31, 2023 to August 5, 2023 in association with the Department of Information Technology (NBA Accredited), Kamaraj College of Engineering and Technology (Autonomous).

Assessment Mark: 95

E. Vakaimalar

Dr. E. VAKAIMALAR
HEAD OF THE DEPARTMENT

Dr. S. SENTHIL
PRINCIPAL

S. Samson

Mr. S. SAMSON
CHIEF EXECUTIVE OFFICER

Certificate ID.: 23CC1190

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AUTONOMOUS

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CERTIFICATE

OF COMPLETION

This is to certify that

VEERA BALAGAN.K

of III year has successfully completed

DATA SCIENCE WITH TABLEAU FOR BEGINNERS,

conducted from July 31, 2023 to August 5, 2023 in association with the Department of Information Technology (NBA Accredited), Kamaraj College of Engineering and Technology (Autonomous).

Assessment Mark: 80

E. Vakaimalar

Dr. E. VAKAIMALAR
HEAD OF THE DEPARTMENT

Dr. S. SENTHIL
PRINCIPAL

S. Samson

Mr. S. SAMSON
CHIEF EXECUTIVE OFFICER

Certificate ID.: 23C1191

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AUTONOMOUS

Accreditation

25 YEARS

CERTIFICATE

OF COMPLETION

This is to certify that

CHARANYA. D

of III year has successfully completed

DATA SCIENCE WITH TABLEAU FOR BEGINNERS,

conducted from July 31, 2023 to August 5, 2023 in association with the Department of Information Technology (NBA Accredited), Kamaraj College of Engineering and Technology (Autonomous).

Assessment Mark: 94

E. Vakaimalar

Dr. E. VAKAIMALAR
HEAD OF THE DEPARTMENT

Dr. S. SENTHIL
PRINCIPAL

S. Samson

Mr. S. SAMSON
CHIEF EXECUTIVE OFFICER

Certificate ID.: 23CC1192

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AUTONOMOUS

Accreditation

25 YEARS

CERTIFICATE

OF COMPLETION

This is to certify that

KAVIYA.S

of III year has successfully completed

DATA SCIENCE WITH TABLEAU FOR BEGINNERS,

conducted from July 31, 2023 to August 5, 2023 in association with the Department of Information Technology (NBA Accredited), Kamaraj College of Engineering and Technology (Autonomous).

Assessment Mark: 96

E. Vakaimalar

Dr. E. VAKAIMALAR
HEAD OF THE DEPARTMENT

Dr. S. SENTHIL
PRINCIPAL

S. Samson

Mr. S. SAMSON
CHIEF EXECUTIVE OFFICER

Certificate ID.: 23CC1193

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AUTONOMOUS

Accreditation

25 YEARS

CERTIFICATE

OF COMPLETION

This is to certify that

MEGHA.A.M

of III year has successfully completed

DATA SCIENCE WITH TABLEAU FOR BEGINNERS,

conducted from July 31, 2023 to August 5, 2023 in association with the Department of Information Technology (NBA Accredited), Kamaraj College of Engineering and Technology (Autonomous).

Assessment Mark: 96

E. Vakaimalar

Dr. E. VAKAIMALAR
HEAD OF THE DEPARTMENT

Dr. S. SENTHIL
PRINCIPAL

S. Samson

Mr. S. SAMSON
CHIEF EXECUTIVE OFFICER

Certificate ID.: 23CC1194

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AUTONOMOUS

Accreditation

25 YEARS

CERTIFICATE

OF COMPLETION

This is to certify that

AKILA . K

of III year has successfully completed

DATA SCIENCE WITH TABLEAU FOR BEGINNERS,

conducted from July 31, 2023 to August 5, 2023 in association with the Department of Information Technology (NBA Accredited), Kamaraj College of Engineering and Technology (Autonomous).

Assessment Mark: 95

E. Vakaimalar

Dr. E. VAKAIMALAR
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Assessment Mark: 56

E. Vakaimalar

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Assessment Mark: 92

E. Vakaimalar

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Assessment Mark: 82

E. Vakaimalar

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Assessment Mark: 91

E. Vakaimalar

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Assessment Mark: 92

E. Vakaimalar

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Assessment Mark: 93

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Assessment Mark: 71

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Assessment Mark: 98

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Assessment Mark: 80

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Assessment Mark: 78

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Assessment Mark: 95

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Assessment Mark: 97

E. Vakaimalar

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Assessment Mark: 56

E. Vakaimalar

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Assessment Mark: 95

E.Vakaimalar

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Assessment Mark: 97

E. Vakaimalar

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Assessment Mark: 70

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Assessment Mark: 77

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Assessment Mark: 92

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Assessment Mark: 94

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Assessment Mark: 95

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Department of Information Technology

8. Examination Schedule

Value Added Course

on

Data Science with Tableau

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S.P.G.C. Nagar, K.Vellakulam – 625 701 (Near VIRUDHUNAGAR).

DEPARTMENT OF INFORMATION TECHNOLOGY

Value Added Course on "Data Science with Tableau"

Circular

08.08.2023

MCQ based examination will be conducted for the Value Added Course on **"Data Science with Tableau"** for III year Information Technology students on **10.08.2023.** Students are advised to attend the test without fail.

Venue : Security Lab

HoD / IT

[Dr. E. Vakaûmalar]

To be read in:

1. III IT Class Room

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Department of Information Technology

9. Question and Answer Keys

Value Added Course

on

Data Science with Tableau

"DATA SCIENCE WITH TABLEAU"-VAC ASSESSMENT TEST

* This form will record your name, please fill your name.

1. What is the definition of data science? (3 Points)

- a) The process of collecting data from various sources
- b) The study of data patterns and trends in business
- c) The combination of statistical analysis, programming, and domain knowledge to extract insights from data
- d) The process of creating data visualizations

2. 1. Why is data science significant in today's world? (3 Points)

- a) It helps companies sell more products
- b) It enables better decision-making based on data-driven insights
- c) It eliminates the need for human involvement in data analysis
- d) It increases the complexity of data management

3. In which industries is data science commonly applied? (3 Points)

- a) Healthcare, finance, and education
- b) Manufacturing and construction
- c) Social media and fashion
- d) Data science is not widely used in industries

4. What is the role of a data scientist? (3 Points)

- a) To collect and store data in databases
- b) To visualize data using charts and graphs
- c) To clean and analyse data to extract meaningful insights
- d) To promote products through advertising

5. What skills are typically required of a data scientist? (3 Points)

- a) Advanced knowledge of graphic design
- b) Domain expertise and business acumen
- c) Proficiency in a single programming language
- d) Expertise in sports and entertainment

6. What is Tableau? (3 Points)

- a) A programming language for data analysis
- b) A data storage and retrieval system
- c) A data visualization software
- d) A cloud-based data processing platform

7. What can you do with Tableau? (3 Points)

- a) Connect to data sources and perform data analysis
- b) Write complex algorithms for machine learning
- c) Design websites and mobile applications
- d) Create 3D models and animations

8. Which of the following data formats is supported by Tableau? (3 Points)

- a) TXT and PNG
- b) MP4 and DOCX
- c) CSV and XLSX
- d) XML and JSON

9. How can you enhance data exploration using Tableau? (3 Points)

- a) By using Python scripts for data cleaning
- b) By creating interactive and dynamic visualizations
- c) By converting data into different formats
- d) By applying complex statistical tests

10. What types of visualizations can be created in Tableau? (3 Points)

- a) Only bar charts and pie charts
- b) Only scatter plots and line charts
- c) Bar charts, line charts, scatter plots, and more
- d) Only 3D visualizations

11. Which of the following data types can be found in data sets? (3 Points)

- a) Numerical, categorical, and sequential
- b) Quantitative, qualitative, and continuous
- c) Tables, charts, and graphs
- d) Pie charts, bar charts, and scatter plots
- Option 2

12. What are examples of unstructured data formats? (3 Points)

- a) Tables and spreadsheets
- b) JSON and XML
- c) CSV and TXT
- d) Pie charts and bar graphs

13. How can missing data be handled in Tableau? (3 Points)

- a) By deleting the entire row with missing data
- b) By interpolating missing values based on neighbouring points
- c) By filling in missing values with a constant value
- d) All of the above

14. What does data transformation involve in Tableau? (3 Points)

- a) Creating visualizations using charts and graphs
- b) Aggregating data to obtain summary statistics
- c) Reshaping data using pivot, split, and join features
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15. Which chart type is best suited for visualizing the distribution of a numerical variable? (3 Points)

- a) Bar chart
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- c) Histogram
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- a) By clicking on the "Calculated Field" button in the Tableau toolbar
- b) By using Tableau's built-in functions for common calculations
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- b) To create visualizations with gradients and shading effects
- c) To format data in a readable way for better analysis
- d) To delete irrelevant data from the dataset

18. What can you achieve by applying filters to data in Tableau? (3 Points)

- a) Combining multiple data sources
- b) Grouping data into meaningful categories
- c) Visualizing spatial data on maps
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19. Which chart type is commonly used to display data points on a geographical map? (3 Points)

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20. How can you customize the appearance of visualizations in Tableau? (3 Points)

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- c) By converting data from one format to another
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21. What is the role of machine learning algorithms in data analysis using Tableau? (4 Points)

- a) To automate data cleaning and filtering processes
- b) To build interactive visualizations with Tableau's drag-and-drop interface
- c) To predict future trends and outcomes using predictive modelling
- d) To publish and share Tableau workbooks with stakeholders

22. Which data science technique is used to group similar data points together based on their characteristics? (4 Points)

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- b) Clustering
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- d) Forecasting

23. How can Tableau be used for predictive modelling? (4 Points)

- a) By importing pre-trained machine learning models into Tableau
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24. What does segmentation analysis using Tableau involve? (4 Points)

- a) Building decision trees to classify data points
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- a) Tableau Workbooks
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- c) Tableau Cloud
- d) Tableau Hub

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- c) Embedding interactive controls and filters for better user engagement
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- b) By embedding Tableau visualizations on social media platforms
- c) By allowing public access to shared visualizations on the Tableau Public website
- d) By sharing visualizations only with Tableau Desktop users

ANSWER KEY EXPLANATION FOR
DATA SCIENCE WITH TABLEAU FOR BEGINNERS

Specially customized for Department of Information Technology, Kamaraj College of Engineering and Technology (Autonomous).

No. of Credits – 1 Total Minutes – 60

Answer-Key Explanation

1. c) The combination of statistical analysis, programming, and domain knowledge to extract insights from data.

Explanation: Data science is an interdisciplinary field that involves using statistical analysis, programming skills, and domain knowledge to derive valuable insights and knowledge from data.

2. b) It enables better decision-making based on data-driven insights.

Explanation: Data science plays a crucial role in helping organizations make informed decisions based on data-driven insights, leading to improved performance and efficiency.

3. **a) Healthcare, finance, and education.**

   Explanation: Data science is widely applied in various industries, including healthcare, finance, and education, to solve complex problems and make data informed decisions.

4. **c) To clean and analyse data to extract meaningful insights.**

   Explanation: The primary role of a data scientist is to process, clean, and analyse data to extract valuable insights and patterns.

5. **Domain expertise and business acumen.**

   Explanation: Data scientists need domain expertise and business acumen to understand the context of the data and provide actionable insights.

6. **A data visualization software.**

   Explanation: Tableau is a powerful data visualization software that enables users to create interactive and informative visualizations.

7. **a) Connect to data sources and perform data analysis.**

   Explanation: With Tableau, users can connect to various data sources and perform data analysis to create insightful visualizations.

8. c) CSV and XLSX.

Explanation: Tableau supports data formats like CSV (Comma Separated Values) and XLSX (Excel files) among others.

9. By creating interactive and dynamic visualizations.

Explanation: Tableau allows users to create interactive and dynamic visualizations, enhancing data exploration and analysis.

10. Bar charts, line charts, scatter plots, and more.

Explanation: Tableau offers a wide range of visualization options, including bar charts, line charts, scatter plots, and more.

11. b) Quantitative, qualitative, and continuous.

Explanation: Data sets can contain different types of data, such as quantitative (numerical), qualitative (categorical), and continuous (text, time).

12. b) JSON and XML.

Explanation: JSON and XML are examples of unstructured data formats commonly used in data science.

13. d) All of the above.

Explanation: Missing data can be handled in Tableau by deleting rows, interpolating values, or filling missing values with constant values.

14. c) Reshaping data using pivot, split, and join features.

Explanation: Data transformation in Tableau involves reshaping data using pivot, split, and join features.

15. c) Histogram.

Explanation: Histograms are used to visualize the distribution of a numerical variable.

16. a) By clicking on the "Calculated Field" button in the Tableau toolbar.

Explanation: In Tableau, a new calculated field can be created by clicking on the "Calculated Field" button.

17. a) To combine multiple data sources into a single dataset.

Explanation: Data blending in Tableau allows users to combine data from multiple sources into a single dataset for analysis.

18. d) Focusing on specific subsets of data for analysis.

Explanation: Applying filters to data in Tableau helps in focusing on specific subsets of data for analysis.

19. d) Symbol map.

Explanation: Symbol maps in Tableau are used to display data points on a geographical map.

20. By adding annotations and reference lines.

Explanation: Tableau allows users to customize visualizations by adding annotations and reference lines to provide additional context.

21. To predict future trends and outcomes using predictive modelling.

Explanation: Machine learning algorithms in Tableau can be used for predictive modelling to forecast future trends and outcomes based on historical data.

22. b) Clustering.

Explanation: Clustering is a data science technique used to group similar data points together based on their characteristics.

23. By using Tableau's built-in predictive modelling features.

Explanation: Tableau has built-in predictive modelling features that allow users to perform predictive analysis.

24. Grouping customers into distinct profiles for targeted marketing.

Explanation: Segmentation analysis in Tableau involves grouping customers into distinct profiles for targeted marketing strategies.

25. By comparing the predicted values with the actual outcomes.

Explanation: Model performance can be evaluated by comparing the predicted values with the actual outcomes.

26. Tableau Online.

Explanation: Tableau Online is a platform where Tableau workbooks can be published and shared.

27. b) Restricting access to specific data sources used in the workbooks.

Explanation: Configuring permissions and access controls in Tableau involves restricting access to specific data sources used in the workbooks.

28. To provide feedback and insights on shared visualizations.

Explanation: Collaborating with others using comments, annotations, and subscriptions in Tableau allows stakeholders to provide feedback and insights on shared visualizations.

29. Embedding interactive controls and filters for better user engagement.

Explanation: When embedding Tableau visualizations, adding interactive controls and filters enhances user engagement and interactivity.

30. c) By allowing public access to shared visualizations on the Tableau Public website.

Explanation: Tableau Public allows users to share visualizations publicly on the Tableau Public website, making them accessible to a wider audience.

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S.P.G.Chidambara Nadar - C.Nagammal Campus
S.P.G.C. Nagar, K.Vellakulam – 625 701 (Near VIRUDHUNAGAR).

Department of Information Technology

10. Attendance Sheet

Value Added Course

on

Data Science with Tableau

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DEPARTMENT OF INFORMATION TECHNOLOGY

Value Added Course on "Data Science with TABLEAU"

31.07.2023 to 05.08.2023

Attendance Sheet

Sl. No.	Roll Number	Student Name	31.07.2023		01.08.2023		02.08.2023		03.08.2023		04.08.2023		05.08.2023	
			FN	AN	FN	AN	FN	AN	FN	AN	FN	AN	FN	AN
1	21UIT003	VIGNESH V K												
2	21UIT008	SUBASHINI K												
3	21UIT009	MATHUMITHA V												
4	21UIT010	KALAISELVI K							AB	AB				
5	21UIT011	YAZHINI D S												
6	21UIT013	RAMYAA SHRI K												
7	21UIT016	RAJESH R M												
8	21UIT017	VEERA BALAGAN K												
9	21UIT018	CHARANYA D												
10	21UIT019	KAVIYA S												

Sl. No.	Roll Number	Student Name	31.07.2023		01.08.2023		02.08.2023		03.08.2023		04.08.2023		05.08.2023	
			FN	AN	FN	AN	FN	AN	FN	AN	FN	AN	FN	AN
11	21UIT027	MEGHA A M	Megha	Megha	Megha	Megha	Megha	Megha	Megha	Megha	Megha	Megha	Megha	Megha
12	21UIT029	AKILA K	Akila	Akila	Akila	Akila	Akila	Akila	Akila					
13	21UIT030	GANESH KUMAR M							ODI	ODI	ODI	ODI	ODI	ODI
14	21UIT031	DHARUN S	Dharun S	Dharun S	Dharun S	Dharun S	Dharun S	Dharun S	Dharun S		Dharun S	Dharun S		Dharun S
15	21UIT032	SUBEGA BANU S												
16	21UIT033	KABILESH K												
17	21UIT034	SENTHIL KUMAR T B												
18	21UIT036	VISALI MANIPIRYA V	Visali	Visali	Visali	Visali	Visali	Visali	Visali	Visali	Visali	Visali	Visali	Visali
19	21UIT038	MEENAKSHI S	LEAVE	LEAVE	LEAVE	LEAVE					S.M	S.M	S.M	S.M
20	21UIT040	VISHNU PRIYA G	Vishnupriya	Vishnupriya	Vishnupriya	Vishnupriya	Vishnupriya	Vishnupriya	Vishnupriya	Vishnupriya	Vishnupriya	Vishnupriya	Vishnupriya	Vishnupriya
21	21UIT043	KALPANA CHARULA S	Kalpana	Kalpana	Kalpana	Kalpana	Kalpana	Kalpana	Kalpana	Kalpana	Kalpana	Kalpana	Kalpana	Kalpana
22	21UIT045	ABISHEK RAJ S	S.Abi	S.Abi	S.Abi	S.Abi	S.Abi	S.Abi	S.Abi	S.Abi	S.Abi	S.Abi	AB	AB
23	21UIT047	EASKKITHAI @ SUMATHI M	Sumathi	Sumathi	Sumathi	Sumathi	Sumathi	Sumathi	Sumathi	Sumathi	Sumathi	Sumathi	Sumathi	Sumathi
24	21UIT048	BALAJI G S	G.Bal	G.Bal	G.Bal	G.Bal	G.Bal	G.Bal	G.Bal	G.Bal	G.Bal	G.Bal	G.Bal	G.Bal
25	21UIT049	VISHAL M	Vishal M	Vishal M	Vishal M	Vishal M	Vishal M	Vishal M	AB	AB	Vishal M	Vishal M	Vishal M	Vishal M
26	21UIT051	BABY S	Baby	Baby	Baby	Baby	Baby	Baby	Baby	Baby	Baby	Baby	S.Baby	S.Baby
27	21UIT052	KAVIYA M	Kaviya	Kaviya	Kaviya	Kaviya	Kaviya	Kaviya	Kaviya	Kaviya	Kaviya	Kaviya	Kaviya	Kaviya

Sl. No.	Roll Number	Student Name	31.07.2023		01.08.2023		02.08.2023		03.08.2023		04.08.2023		05.08.2023	
			FN	AN	FN	AN	FN	AN	FN	AN	FN	AN	FN	AN
28	21UIT054	KISHORE M												
29	21UIT057	BALA CHIBI HARIESH B							AB	AB	AB	AB	AB	AB
30	21UIT058	PRAVEEN L												
31	21UIT059	SAAMIR GAFFUR MOHAMMED YAKUB SHAH												
32	21UIT060	SWATHEESWARI G												
33	21UIT062	ROOBAN REYEASH S											AB	AB
34	21UIT065	SARAVANAKUMAR P												
Total Strength			34	34	34	34	34	34	34	34	34	34	34	34
Number of Students Present			33	33	33	33	34	34	30	30	32	32	30	30
Number of Students Absent			1	1	1	1	NIL 0	NIL 0	AB-3 OD-1	AB-3 OD-1	AB-1 OD-1	AB-1 OD-1	AB-3 OD-1	AB-3 OD-1
Signature of Value Added Course Coordinator														

UG Coordinator

HoD / IT

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Department of Information Technology

11. Evaluated Answer Script

Value Added Course

on

Data Science with Tableau

"DATA SCIENCE WITH TABLEAU"-VAC ASSESSMENT TEST

Points: 88/100

✕ **Incorrect** 0/3 Points

1. What is the definition of data science?

- a) The process of collecting data from various sources
- b) The study of data patterns and trends in business
- c) The combination of statistical analysis, programming, and domain knowledge to extract insights from data
- d) The process of creating data visualizations

✕ **Incorrect** 0/3 Points

2. 1. Why is data science significant in today's world?

- a) It helps companies sell more products

b) It enables better decision-making based on data-driven insights

c) It eliminates the need for human involvement in data analysis

d) It increases the complexity of data management

✓ **Correct** 3/3 Points

3. In which industries is data science commonly applied?

a) Healthcare, finance, and education

b) Manufacturing and construction

c) Social media and fashion

d) Data science is not widely used in industries

✓ **Correct** 3/3 Points

4. What is the role of a data scientist?

a) To collect and store data in databases

b) To visualize data using charts and graphs

c) To clean and analyse data to extract meaningful insights

d) To promote products through advertising

✓ **Correct** 3/3 Points

5. What skills are typically required of a data scientist?

a) Advanced knowledge of graphic design

b) Domain expertise and business acumen

c) Proficiency in a single programming language

d) Expertise in sports and entertainment

✓ **Correct** 3/3 Points

6. What is Tableau?

a) A programming language for data analysis

b) A data storage and retrieval system

c) A data visualization software

d) A cloud-based data processing platform

✓ **Correct** 3/3 Points

7. What can you do with Tableau?

a) Connect to data sources and perform data analysis

b) Write complex algorithms for machine learning

c) Design websites and mobile applications

d) Create 3D models and animations

✓ **Correct** 3/3 Points

8. Which of the following data formats is supported by Tableau?

- a) TXT and PNG
- b) MP4 and DOCX
- c) CSV and XLSX
- d) XML and JSON

✓ **Correct** 3/3 Points

9. How can you enhance data exploration using Tableau?

- a) By using Python scripts for data cleaning
- b) By creating interactive and dynamic visualizations
- c) By converting data into different formats
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✓ **Correct** 3/3 Points

10. What types of visualizations can be created in Tableau?

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- b) Only scatter plots and line charts
- c) Bar charts, line charts, scatter plots, and more
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✓ **Correct** 3/3 Points

11. Which of the following data types can be found in data sets?

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- b) Quantitative, qualitative, and continuous
- c) Tables, charts, and graphs
- d) Pie charts, bar charts, and scatter plots
- Option 2

✓ **Correct** 3/3 Points

12. What are examples of unstructured data formats?

- a) Tables and spreadsheets
- b) JSON and XML
- c) CSV and TXT
- d) Pie charts and bar graphs

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13. How can missing data be handled in Tableau?

- a) By deleting the entire row with missing data
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d) All of the above

✓ **Correct** 3/3 Points

14. What does data transformation involve in Tableau?

a) Creating visualizations using charts and graphs

b) Aggregating data to obtain summary statistics

c) Reshaping data using pivot, split, and join features

d) Deleting erroneous data points

✓ **Correct** 3/3 Points

15. Which chart type is best suited for visualizing the distribution of a numerical variable?

a) Bar chart

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16. How can you create a new calculated field in Tableau?

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- c) By importing an external file with the calculated field
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✗ **Incorrect** 0/3 Points

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✓ **Correct** 4/4 Points

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c) By writing custom Python code within Tableau

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✓ **Correct** 4/4 Points

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d) Creating visualizations with filters and sorting options

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✓ **Correct** 4/4 Points

26. Which of the following is a platform where Tableau workbooks can be published and shared?

a) Tableau Workbooks

b) Tableau Online

c) Tableau Cloud

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✓ **Correct** 4/4 Points

27. What does configuring permissions and access controls for shared content in Tableau involve?

a) Adjusting the visual appearance of shared dashboards

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✓ **Correct** 4/4 Points

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30. How can Tableau Public be used to share visualizations?

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"DATA SCIENCE WITH TABLEAU"-VAC ASSESSMENT TEST

Points: 54/100

✓ **Correct** 3/3 Points

1. What is the definition of data science?

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- b) The study of data patterns and trends in business
- c) The combination of statistical analysis, programming, and domain knowledge to extract insights from data
- d) The process of creating data visualizations

✓ **Correct** 3/3 Points

2. 1. Why is data science significant in today's world?

- a) It helps companies sell more products
- b) It enables better decision-making based on data-driven insights
- c) It eliminates the need for human involvement in data analysis
- d) It increases the complexity of data management

✓ **Correct** 3/3 Points

3. In which industries is data science commonly applied?

- a) Healthcare, finance, and education
- b) Manufacturing and construction
- c) Social media and fashion
- d) Data science is not widely used in industries

✓ **Correct** 3/3 Points

4. What is the role of a data scientist?

- a) To collect and store data in databases
- b) To visualize data using charts and graphs
- c) To clean and analyse data to extract meaningful insights
- d) To promote products through advertising

✓ **Correct** 3/3 Points

5. What skills are typically required of a data scientist?

- a) Advanced knowledge of graphic design
- b) Domain expertise and business acumen
- c) Proficiency in a single programming language
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✓ **Correct** 3/3 Points

6. What is Tableau?

- a) A programming language for data analysis
- b) A data storage and retrieval system
- c) A data visualization software
- d) A cloud-based data processing platform

✓ **Correct** 3/3 Points

7. What can you do with Tableau?

- a) Connect to data sources and perform data analysis
- b) Write complex algorithms for machine learning
- c) Design websites and mobile applications
- d) Create 3D models and animations

✓ **Correct** 3/3 Points

8. Which of the following data formats is supported by Tableau?

- a) TXT and PNG
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- c) CSV and XLSX
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- c) Tables, charts, and graphs
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- a) Creating visualizations using charts and graphs
- b) Aggregating data to obtain summary statistics
- c) Reshaping data using pivot, split, and join features
- d) Deleting erroneous data points

✓ **Correct** 3/3 Points

15. Which chart type is best suited for visualizing the distribution of a numerical variable?

- a) Bar chart
- b) Scatter plot
- c) Histogram
- d) Pie chart
- Option 2

✗ **Incorrect** 0/3 Points

16. How can you create a new calculated field in Tableau?

- a) By clicking on the "Calculated Field" button in the Tableau toolbar

b) By using Tableau's built-in functions for common calculations

c) By importing an external file with the calculated field

d) By writing a custom SQL query

✗ **Incorrect** 0/3 Points

17. What is the purpose of data blending in Tableau?

a) To combine multiple data sources into a single dataset

b) To create visualizations with gradients and shading effects

c) To format data in a readable way for better analysis

d) To delete irrelevant data from the dataset

✓ **Correct** 3/3 Points

18. What can you achieve by applying filters to data in Tableau?

a) Combining multiple data sources

b) Grouping data into meaningful categories

c) Visualizing spatial data on maps

d) Focusing on specific subsets of data for analysis

✓ **Correct** 3/3 Points

19. Which chart type is commonly used to display data points on a geographical map?

a) Bar chart

b) Line chart

c) Scatter plot

d) Symbol map

✗ **Incorrect** 0/3 Points

20. How can you customize the appearance of visualizations in Tableau?

a) By using advanced statistical functions

b) By adding annotations and reference lines

c) By converting data from one format to another

d) By importing external data sources

✗ **Incorrect** 0/4 Points

21. What is the role of machine learning algorithms in data analysis using Tableau?

a) To automate data cleaning and filtering processes

b) To build interactive visualizations with Tableau's drag-and-drop interface

c) To predict future trends and outcomes using predictive modelling

d) To publish and share Tableau workbooks with stakeholders

✗ **Incorrect** 0/4 Points

22. Which data science technique is used to group similar data points together based on their characteristics?

a) Predictive modelling

b) Clustering

c) Regression analysis

d) Forecasting

✓ **Correct** 4/4 Points

23. How can Tableau be used for predictive modelling?

a) By importing pre-trained machine learning models into Tableau

b) By using Tableau's built-in predictive modelling features

c) By writing custom Python code within Tableau

d) By connecting Tableau to external predictive modelling software

✗ **Incorrect** 0/4 Points

24. What does segmentation analysis using Tableau involve?

a) Building decision trees to classify data points

b) Predicting future trends based on historical data

c) Grouping customers into distinct profiles for targeted marketing

d) Creating visualizations with filters and sorting options

✓ **Correct** 4/4 Points

25. How can model performance be evaluated in Tableau?

a) By comparing the predicted values with the actual outcomes

b) By conducting A/B testing on visualizations

c) By applying clustering algorithms to the data

d) By customizing the color palettes for visualizations

✗ **Incorrect** 0/4 Points

26. Which of the following is a platform where Tableau workbooks can be published and shared?

a) Tableau Workbooks

b) Tableau Online

c) Tableau Cloud

d) Tableau Hub

✗ **Incorrect** 0/4 Points

27. What does configuring permissions and access controls for shared content in Tableau involve?

a) Adjusting the visual appearance of shared dashboards

b) Restricting access to specific data sources used in the workbooks

c) Adding annotations and reference lines to shared visualizations

d) Configuring interactive controls for embedded visualizations

✗ **Incorrect** 0/4 Points

28. What is the purpose of collaborating with others using comments, annotations, and subscriptions in Tableau?

a) To generate automated reports based on data analysis

b) To provide feedback and insights on shared visualizations

c) To create dynamic filters for dashboards

d) To apply advanced statistical techniques to the data

✗ **Incorrect** 0/4 Points

29. What is a recommended best practice for embedding Tableau visualizations in websites and presentations?

a) Embedding visualizations directly from Tableau Online without any customization

b) Embedding visualizations as static images to reduce loading time

c) Embedding interactive controls and filters for better user engagement

d) Embedding visualizations from third-party visualization tools

✓ **Correct** 4/4 Points

30. How can Tableau Public be used to share visualizations?

a) By sharing visualizations with a limited number of collaborators

b) By embedding Tableau visualizations on social media platforms

c) By allowing public access to shared visualizations on the Tableau Public website

d) By sharing visualizations only with Tableau Desktop users

"DATA SCIENCE WITH TABLEAU"-VAC ASSESSMENT TEST

Points: 100/100

✓ **Correct** 3/3 Points

1. What is the definition of data science?

- ○ a) The process of collecting data from various sources
- ○ b) The study of data patterns and trends in business
- ◉ c) The combination of statistical analysis, programming, and domain knowledge to extract insights from data
- ○ d) The process of creating data visualizations

✓ **Correct** 3/3 Points

2. 1. Why is data science significant in today's world?

- ○ a) It helps companies sell more products

- [x] b) It enables better decision-making based on data-driven insights
- [ ] c) It eliminates the need for human involvement in data analysis
- [ ] d) It increases the complexity of data management

✓ **Correct** 3/3 Points

3. In which industries is data science commonly applied?

- [x] a) Healthcare, finance, and education
- [ ] b) Manufacturing and construction
- [ ] c) Social media and fashion
- [ ] d) Data science is not widely used in industries

✓ **Correct** 3/3 Points

4. What is the role of a data scientist?

- [ ] a) To collect and store data in databases
- [ ] b) To visualize data using charts and graphs
- [x] c) To clean and analyse data to extract meaningful insights
- [ ] d) To promote products through advertising

✓ **Correct** 3/3 Points

5. What skills are typically required of a data scientist?

a) Advanced knowledge of graphic design

b) Domain expertise and business acumen

c) Proficiency in a single programming language

d) Expertise in sports and entertainment

✓ **Correct** 3/3 Points

6. What is Tableau?

a) A programming language for data analysis

b) A data storage and retrieval system

c) A data visualization software

d) A cloud-based data processing platform

✓ **Correct** 3/3 Points

7. What can you do with Tableau?

a) Connect to data sources and perform data analysis

b) Write complex algorithms for machine learning

c) Design websites and mobile applications

d) Create 3D models and animations

✓ **Correct** 3/3 Points

8. Which of the following data formats is supported by Tableau?

- a) TXT and PNG
- b) MP4 and DOCX
- c) CSV and XLSX
- d) XML and JSON

✓ **Correct** 3/3 Points

9. How can you enhance data exploration using Tableau?

- a) By using Python scripts for data cleaning
- b) By creating interactive and dynamic visualizations
- c) By converting data into different formats
- d) By applying complex statistical tests

✓ **Correct** 3/3 Points

10. What types of visualizations can be created in Tableau?

- a) Only bar charts and pie charts
- b) Only scatter plots and line charts
- c) Bar charts, line charts, scatter plots, and more
- d) Only 3D visualizations

✓ **Correct** 3/3 Points

11. Which of the following data types can be found in data sets?

- a) Numerical, categorical, and sequential
- b) Quantitative, qualitative, and continuous
- c) Tables, charts, and graphs
- d) Pie charts, bar charts, and scatter plots
- Option 2

✓ **Correct** 3/3 Points

12. What are examples of unstructured data formats?

- a) Tables and spreadsheets
- b) JSON and XML
- c) CSV and TXT
- d) Pie charts and bar graphs

✓ **Correct** 3/3 Points

13. How can missing data be handled in Tableau?

- a) By deleting the entire row with missing data
- b) By interpolating missing values based on neighbouring points
- c) By filling in missing values with a constant value

d) All of the above

✓ **Correct** 3/3 Points

14. What does data transformation involve in Tableau?

a) Creating visualizations using charts and graphs

b) Aggregating data to obtain summary statistics

c) Reshaping data using pivot, split, and join features

d) Deleting erroneous data points

✓ **Correct** 3/3 Points

15. Which chart type is best suited for visualizing the distribution of a numerical variable?

a) Bar chart

b) Scatter plot

c) Histogram

d) Pie chart

Option 2

✓ **Correct** 3/3 Points

16. How can you create a new calculated field in Tableau?

- [x] a) By clicking on the "Calculated Field" button in the Tableau toolbar
- [ ] b) By using Tableau's built-in functions for common calculations
- [ ] c) By importing an external file with the calculated field
- [ ] d) By writing a custom SQL query

✓ **Correct** 3/3 Points

17. What is the purpose of data blending in Tableau?

- [x] a) To combine multiple data sources into a single dataset
- [ ] b) To create visualizations with gradients and shading effects
- [ ] c) To format data in a readable way for better analysis
- [ ] d) To delete irrelevant data from the dataset

✓ **Correct** 3/3 Points

18. What can you achieve by applying filters to data in Tableau?

- [ ] a) Combining multiple data sources
- [ ] b) Grouping data into meaningful categories
- [x] c) Visualizing spatial data on maps
- [ ] d) Focusing on specific subsets of data for analysis

✓ **Correct** 3/3 Points

19. Which chart type is commonly used to display data points on a geographical map?

- a) Bar chart
- b) Line chart
- c) Scatter plot
- d) Symbol map

✓ **Correct** 3/3 Points

20. How can you customize the appearance of visualizations in Tableau?

- a) By using advanced statistical functions
- b) By adding annotations and reference lines
- c) By converting data from one format to another
- d) By importing external data sources

✓ **Correct** 4/4 Points

21. What is the role of machine learning algorithms in data analysis using Tableau?

- a) To automate data cleaning and filtering processes
- b) To build interactive visualizations with Tableau's drag-and-drop interface
- c) To predict future trends and outcomes using predictive modelling

d) To publish and share Tableau workbooks with stakeholders

✓ **Correct** 4/4 Points

22. Which data science technique is used to group similar data points together based on their characteristics?

a) Predictive modelling

b) Clustering

c) Regression analysis

d) Forecasting

✓ **Correct** 4/4 Points

23. How can Tableau be used for predictive modelling?

a) By importing pre-trained machine learning models into Tableau

b) By using Tableau's built-in predictive modelling features

c) By writing custom Python code within Tableau

d) By connecting Tableau to external predictive modelling software

✓ **Correct** 4/4 Points

24. What does segmentation analysis using Tableau involve?

a) Building decision trees to classify data points

b) Predicting future trends based on historical data

- [x] c) Grouping customers into distinct profiles for targeted marketing
- [ ] d) Creating visualizations with filters and sorting options

✓ **Correct** 4/4 Points

25. How can model performance be evaluated in Tableau?

- [x] a) By comparing the predicted values with the actual outcomes
- [ ] b) By conducting A/B testing on visualizations
- [ ] c) By applying clustering algorithms to the data
- [ ] d) By customizing the color palettes for visualizations

✓ **Correct** 4/4 Points

26. Which of the following is a platform where Tableau workbooks can be published and shared?

- [ ] a) Tableau Workbooks
- [x] b) Tableau Online
- [ ] c) Tableau Cloud
- [ ] d) Tableau Hub

✓ **Correct** 4/4 Points

27. What does configuring permissions and access controls for shared content in Tableau involve?

a) Adjusting the visual appearance of shared dashboards

b) Restricting access to specific data sources used in the workbooks

c) Adding annotations and reference lines to shared visualizations

d) Configuring interactive controls for embedded visualizations

✓ **Correct** 4/4 Points

28. What is the purpose of collaborating with others using comments, annotations, and subscriptions in Tableau?

a) To generate automated reports based on data analysis

b) To provide feedback and insights on shared visualizations

c) To create dynamic filters for dashboards

d) To apply advanced statistical techniques to the data

✓ **Correct** 4/4 Points

29. What is a recommended best practice for embedding Tableau visualizations in websites and presentations?

a) Embedding visualizations directly from Tableau Online without any customization

b) Embedding visualizations as static images to reduce loading time

c) Embedding interactive controls and filters for better user engagement

d) Embedding visualizations from third-party visualization tools

✓ **Correct** 4/4 Points

30. How can Tableau Public be used to share visualizations?

- a) By sharing visualizations with a limited number of collaborators
- b) By embedding Tableau visualizations on social media platforms
- c) By allowing public access to shared visualizations on the Tableau Public website
- d) By sharing visualizations only with Tableau Desktop users

"DATA SCIENCE WITH TABLEAU"-VAC ASSESSMENT TEST

34	91.6	Active
Responses	Average Score	Status

1. What is the definition of data science? (3 points)
94% of respondents (31 of 33) answered this question correctly.

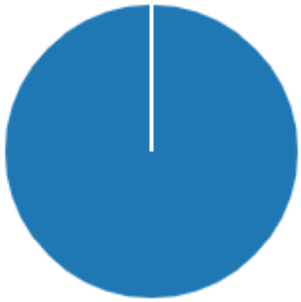
a) The process of collecting data...	0	
b) The study of data patterns an...	2	
c) The combination of statistical ...	31	✓
d) The process of creating data ...	0	

2. 1. Why is data science significant in today's world? (3 points)
100% of respondents (33 of 33) answered this question correctly.

a) It helps companies sell more ...	0	
b) It enables better decision-ma...	33	✓
c) It eliminates the need for hu...	0	
d) It increases the complexity of...	0	

3. In which industries is data science commonly applied? (3 points)
100% of respondents (34 of 34) answered this question correctly.

a) Healthcare, finance, and educ...	34	✓
b) Manufacturing and constructi...	0	
c) Social media and fashion	0	
d) Data science is not widely us...	0	



4. What is the role of a data scientist? (3 points)
100% of respondents (34 of 34) answered this question correctly.

a) To collect and store data in d...	0	
b) To visualize data using charts ...	0	
c) To clean and analyse data to ...	34	✓
d) To promote products throug...	0	

5. What skills are typically required of a data scientist? (3 points)
94% of respondents (32 of 34) answered this question correctly.

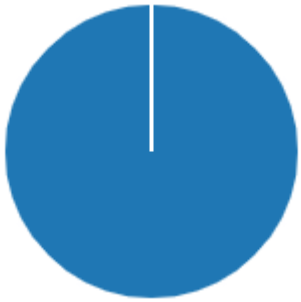
a) Advanced knowledge of grap...	1	
b) Domain expertise and busine...	32	✓
c) Proficiency in a single progra...	1	
d) Expertise in sports and entert...	0	

6. What is Tableau? (3 points)
100% of respondents (34 of 34) answered this question correctly.

a) A programming language for ...	0	
b) A data storage and retrieval s...	0	
c) A data visualization software	34	✓
d) A cloud-based data processin...	0	

7. What can you do with Tableau? (3 points)
100% of respondents (34 of 34) answered this question correctly.

a) Connect to data sources and ...	34	✓
b) Write complex algorithms for...	0	
c) Design websites and mobile a...	0	
d) Create 3D models and anima...	0	



8. Which of the following data formats is supported by Tableau? (3 points)
94% of respondents (32 of 34) answered this question correctly.

a) TXT and PNG	0	
b) MP4 and DOCX	0	
c) CSV and XLSX	32	✓
d) XML and JSON	2	

9. How can you enhance data exploration using Tableau? (3 points)
100% of respondents (33 of 33) answered this question correctly.

a) By using Python scripts for da...	0	
b) By creating interactive and dy...	33	✓
c) By converting data into differ...	0	
d) By applying complex statistic...	0	

10. What types of visualizations can be created in Tableau? (3 points)
100% of respondents (34 of 34) answered this question correctly.

a) Only bar charts and pie charts	0	
b) Only scatter plots and line ch...	0	
c) Bar charts, line charts, scatter ...	34	✓
d) Only 3D visualizations	0	

11. Which of the following data types can be found in data sets? (3 points)

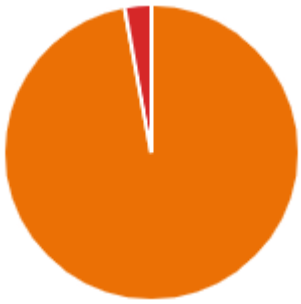
88% of respondents (30 of 34) answered this question correctly.

a) Numerical, categorical, and se...	3	
b) Quantitative, qualitative, and ...	30	✓
c) Tables, charts, and graphs	1	
d) Pie charts, bar charts, and sca...	0	
Option 2	0	

12. What are examples of unstructured data formats? (3 points)

97% of respondents (33 of 34) answered this question correctly.

a) Tables and spreadsheets	0	
b) JSON and XML	33	✓
c) CSV and TXT	0	
d) Pie charts and bar graphs	1	



13. How can missing data be handled in Tableau? (3 points)

94% of respondents (32 of 34) answered this question correctly.

a) By deleting the entire row wit...	1	
b) By interpolating missing valu...	1	
c) By filling in missing values wit...	0	
d) All of the above	32	✓

14. What does data transformation involve in Tableau? (3 points)

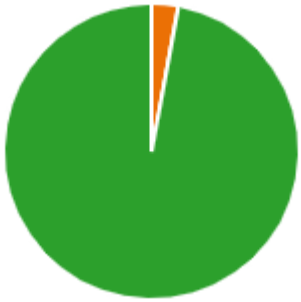
94% of respondents (32 of 34) answered this question correctly.

a) Creating visualizations using ...	1	
b) Aggregating data to obtain s...	1	
c) Reshaping data using pivot, s...	32	✓
d) Deleting erroneous data points	0	

15. Which chart type is best suited for visualizing the distribution of a numerical variable? (3 points)

97% of respondents (33 of 34) answered this question correctly.

a) Bar chart	0	
b) Scatter plot	1	
c) Histogram	33	✓
d) Pie chart	0	
Option 2	0	



16. How can you create a new calculated field in Tableau? (3 points)

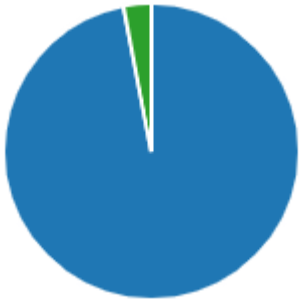
35% of respondents (12 of 34) answered this question correctly.

a) By clicking on the "Calculated...	12	✓
b) By using Tableau's built-in fu...	22	
c) By importing an external file ...	0	
d) By writing a custom SQL query	0	

17. What is the purpose of data blending in Tableau? (3 points)

97% of respondents (32 of 33) answered this question correctly.

a) To combine multiple data sou...	32	✓
b) To create visualizations with g...	0	
c) To format data in a readable ...	1	
d) To delete irrelevant data from...	0	



18. What can you achieve by applying filters to data in Tableau? (3 points)

47% of respondents (16 of 34) answered this question correctly.

a) Combining multiple data sour...	0	
b) Grouping data into meaningf...	2	
c) Visualizing spatial data on ma...	16	✓
d) Focusing on specific subsets ...	16	

19. Which chart type is commonly used to display data points on a geographical map? (3 points)

100% of respondents (34 of 34) answered this question correctly.

a) Bar chart	0	
b) Line chart	0	
c) Scatter plot	0	
d) Symbol map	34	✓

20. How can you customize the appearance of visualizations in Tableau? (3 points)

88% of respondents (30 of 34) answered this question correctly.

a) By using advanced statistical f...	2	
b) By adding annotations and re...	30	✓
c) By converting data from one f...	2	
d) By importing external data so...	0	

21. What is the role of machine learning algorithms in data analysis using Tableau? (4 points)

88% of respondents (30 of 34) answered this question correctly.

a) To automate data cleaning an...	2	
b) To build interactive visualizati...	0	
c) To predict future trends and o...	30	✓
d) To publish and share Tableau ...	2	

22. Which data science technique is used to group similar data points together based on their characteristics? (4 points)

97% of respondents (33 of 34) answered this question correctly.

a) Predictive modelling	1	
b) Clustering	33	✓
c) Regression analysis	0	
d) Forecasting	0	

23. How can Tableau be used for predictive modelling? (4 points)

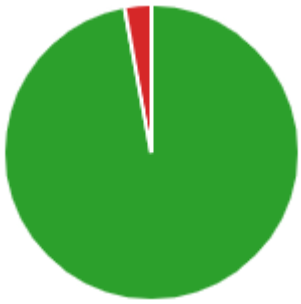
97% of respondents (33 of 34) answered this question correctly.

- a) By importing pre-trained mac... 1
- b) By using Tableau's built-in pr... 33 ✓
- c) By writing custom Python cod... 0
- d) By connecting Tableau to ext... 0

24. What does segmentation analysis using Tableau involve? (4 points)

97% of respondents (33 of 34) answered this question correctly.

- a) Building decision trees to clas... 0
- b) Predicting future trends base... 0
- c) Grouping customers into disti... 33 ✓
- d) Creating visualizations with fil... 1



25. How can model performance be evaluated in Tableau? (4 points)

94% of respondents (32 of 34) answered this question correctly.

- a) By comparing the predicted v... 32 ✓
- b) By conducting A/B testing on... 1
- c) By applying clustering algorit... 1
- d) By customizing the color pale... 0

26. Which of the following is a platform where Tableau workbooks can be published and shared? (4 points)

91% of respondents (31 of 34) answered this question correctly.

a) Tableau Workbooks	0	
b) Tableau Online	31	✓
c) Tableau Cloud	3	
d) Tableau Hub	0	

27. What does configuring permissions and access controls for shared content in Tableau involve? (4 points)

91% of respondents (31 of 34) answered this question correctly.

a) Adjusting the visual appearan...	2	
b) Restricting access to specific ...	31	✓
c) Adding annotations and refer...	0	
d) Configuring interactive contr...	1	

28. What is the purpose of collaborating with others using comments, annotations, and subscriptions in Tableau? (4 points)

94% of respondents (32 of 34) answered this question correctly.

a) To generate automated repor...	0	
b) To provide feedback and insi...	32	✓
c) To create dynamic filters for d...	1	
d) To apply advanced statistical ...	1	

29. What is a recommended best practice for embedding Tableau visualizations in websites and presentations? (4 points)

91% of respondents (31 of 34) answered this question correctly.

a) Embedding visualizations dire...	0	
b) Embedding visualizations as s...	1	
c) Embedding interactive contro...	31	✓
d) Embedding visualizations fro...	2	

30. How can Tableau Public be used to share visualizations? (4 points)

91% of respondents (31 of 34) answered this question correctly.

a) By sharing visualizations with ...	1	
b) By embedding Tableau visuali...	2	
c) By allowing public access to s...	31	✓
d) By sharing visualizations only ...	0	

KAMARAJ
COLLEGE OF ENGINEERING & TECHNOLOGY

(An Autonomous Institution - AFFILIATED TO ANNA UNIVERSITY, CHENNAI)
S.P.G.Chidambara Nadar - C.Nagammal Campus
S.P.G.C. Nagar, K.Vellakulam – 625 701 (Near VIRUDHUNAGAR).

Department of Information Technology

12. Test Report

Value Added Course

on

Data Science with Tableau

KAMARAJ®

COLLEGE OF ENGINEERING & TECHNOLOGY

(An Autonomous Institution - AFFILIATED TO ANNA UNIVERSITY, CHENNAI)

S.P.G.Chidambara Nadar - C.Nagammal Campus

S.P.G.C. Nagar, K.Vellakulam – 625 701 (Near VIRUDHUNAGAR).

DEPARTMENT OF INFORMATION TECHNOLOGY

VALUE ADDED COURSE

"DATA SCIENCE WITH TABLEAU"

31.07.2023 to 05.08.2023

PROJECT REPORT

Submitted By,

Sumathi.M – 21UIT047

Kaviya.M – 21UIT052

Akila.K – 21UIT029

10 + 15 + 13
= 38/40
95%

R. Aghila
(R. Aghila)

ABSTRACT

In the era of digital communication, social media platforms have become essential channels for individuals, businesses, and organizations to share information, connect with their audience, and engage in conversations. With the immense volume of data generated on these platforms, the ability to extract valuable insights from social media content has gained paramount importance. One such crucial aspect is sentiment analysis, which involves determining the emotional tone and polarity of text data. This paper presents an approach to perform sentiment analysis on social media data using Tableau, a powerful data visualization and analytics tool.The primary goal of this study is to develop a practical framework that enables users to effectively analyze and visualize sentiment trends across various social media platforms. By leveraging Tableau's capabilities in data preprocessing, integration, and visualization, this framework aims to provide users with an intuitive interface for exploring and understanding the sentiments expressed in social media content.Data is collected from multiple social media platforms using their respective APIs. Text data, which includes posts, comments, and tweets, is then preprocessed to remove noise, including stop words, special characters, and URLs. Text normalization techniques such as stemming and lemmatization are applied to standardize the language.Sentiment analysis is performed on the preprocessed text using Natural Language Processing (NLP) techniques. A pre-trained sentiment analysis model is employed to assign sentiment scores to each piece of text, categorizing them as positive, negative, or neutral. The sentiment scores are then used to quantify the sentiment strength,The sentiment analysis results are integrated into Tableau by importing the processed data. Tableau's data connection capabilities enable seamless integration with various data sources, facilitating real-time updates as new social media data becomes available.Tableau's strengths lie in its ability to create interactive and insightful visualizations. The sentiment analysis results are visualized through dynamic dashboards that allow users to explore sentiment trends over time, identify influential topics, and compare sentiment distributions across different social media platforms. Visual elements such as line charts, bar graphs, word clouds, and heatmaps are used to convey the sentiment insights effectively.The interactive dashboards empower users to engage with the data and derive meaningful insights. Users can interact with the visualizations to filter data by date range, platform, or specific keywords. This functionality enables them to uncover patterns, correlations, and anomalies within the sentiment data.To demonstrate the effectiveness of the proposed framework, a case study is conducted using real-world social media data

TABLE OF CONTENT

PLANNING REPORT

BASIC UNDERSTANDING ABOUT SOCIAL MEDIA SENTIMENT ANALYSIS

Social media sentiment analysis is a technique that involves analyzing and determining the sentiment expressed in social media content, such as tweets, Facebook posts, online reviews, and comments. The main goal is to understand the emotions, opinions, and attitudes of users towards a particular topic, brand, product, or event. This analysis can provide valuable insights for businesses, marketers, researchers, and decision-makers to make informed decisions and understand public perception.The first step is to gather social media data from various sources like Twitter, Facebook,Whatsapp,Instagram,Youtube etc. APIs provided by these platforms are commonly used to access public posts and comments related to a specific query or topic. The collected text data may contain noise, such as special characters, emojis, hashtags, and URLs. **Sentiment classification** is the core step in sentiment analysis. It involves using machine learning or deep learning models to classify the sentiment of each piece of text as positive, negative, or neutral.After the sentiment classification, the text data is assigned a sentiment score based on the model's prediction. The score could be a numerical value, a sentiment label (positive, negative, neutral), or a combination of both. The results of sentiment analysis are often visualized using charts or graphs to provide a better understanding of the overall sentiment distribution.

PROJECT OVERVIEW

Social media sentiment analysis is a powerful tool that enables businesses and researchers to gain valuable insights from the vast amount of data available on social platforms and make data-driven decisions. However, it's crucial to consider the limitations of sentiment analysis, such as sarcasm, irony, and language nuances that can impact the accuracy of results.

OBJECTIVE AND SIGNIFICANCE OF SOCIAL MEDIA ANALYSIS

The objective of social media analysis is to gather, analyze, and interpret data from various social media platforms to gain insights into user behavior, trends, opinions, and sentiments. This process involves using specialized tools and techniques to extract meaningful information from the vast amount of user-generated content on platforms like Facebook, Twitter, Instagram, LinkedIn, YouTube, etc.,

Analyzing and visualizing a diverse database using Tableau for social media sentiment analysis serves several crucial purposes. Social media platforms generate massive amounts of data every second, making it essential to employ effective tools to understand and interpret this data. Tableau, a powerful data visualization and business intelligence tool, can play a pivotal role in extracting insights from social media data related to sentiment analysis. Tableau excels at creating intuitive and interactive visualizations. It can help you create sentiment analysis dashboards with charts, graphs, heatmaps, and other visual elements. Visualizing sentiment analysis results in real-time allows for quick identification of trends and patterns.

PROJECT TIMELINE – 7hours

Creating a project timeline for social media sentiment analysis can vary depending on the scope, complexity, and available resources. Below is a general outline of the steps involved in such a project:

- Project Definition and Scope
- Data Collection and Preprocessing
- Sentiment Analysis Model Selection
- Model Evaluation
- Real-Time Sentiment Analysis Implementation
- Visualizations and Reporting
- Feedback and Improvements

SCOPE

Social Media Sentiment Analysis is a fascinating and important field that involves analyzing and understanding the sentiments expressed by users on various social media platforms. The primary goal of sentiment analysis is to determine the emotional tone (positive, negative, or neutral) of the content shared by users, such as posts, comments, tweets, reviews, and more.Data preprocessing is a crucial step in any data analysis project. In the context of social media sentiment analysis, it involves cleaning and preparing the raw social media data before analysis. This includes tasks like removing duplicates, handling missing values, tokenizing text, removing special characters, and converting text to lowercase.

DATA EXPLORATION AND VISUALIZATION

UNDERSTANDING COMPLEX DATA

Social media sentiment analysis involves dealing with vast amounts of unstructured text data from various sources. Visualization techniques help in simplifying complex patterns and trends, making it easier for analysts to comprehend the overall sentiment at a glance.

INSIGHTS AT A GLANCE

Visualizations offer a quick overview of sentiment patterns, allowing analysts to identify positive, negative, or neutral sentiments in real-time. This helps in timely decision-making and response to social media trends.

ENHANCED COMMUNICATION

Data visualizations are more intuitive and accessible compared to raw data or textual reports. They facilitate effective communication of findings and insights to non-technical stakeholders, enabling better understanding and informed decision-making.

IDENTIFYING INFLUENCERS AND TRENDS

Visualizations can reveal influential users and key trending topics within social media conversations. This knowledge can be valuable for marketing strategies, brand management, and campaign planning.

INTERATIVE DASHBOARD DESIGN

Stakeholders can interact with a dashboard to gain deeper insights into data by utilizing various interactive features and functionalities offered by the dashboard. Here are some ways stakeholders can interact with the dashboard:

- Filter and drill-down
- Interactive charts and graphs
- Hover and tooltip interactions
- Linked dashboards and storytelling
- Dynamic data updates

TESTING EVALUATION AND COLLABORATION

Testing and validating the accuracy and reliability of social media sentiment analysis involves several key steps and considerations. The first step is to collect a large and diverse dataset of social media posts or comments, which are labeled with their corresponding sentiment (positive, negative, neutral). The dataset should cover different topics, languages, and user demographics to ensure a representative sample. Fine tuning based on the evaluation results, fine-tune the model if necessary to improve its performance. After finalizing the model, evaluate it on the testing dataset to get an unbiased estimate of its accuracy and reliability. This step is crucial to ensure the model's generalization ability to unseen data.Deploy the sentiment analysis model in a real-world setting and continuously monitor its performance. It's important to track its accuracy and reliability over time.

1.1.INTRODUCTION

In the contemporary and ever-evolving digital landscape, the profound influence of social media platforms has transcended the conventional boundaries of communication, giving rise to powerful channels that empower individuals, businesses, and entire communities to express their opinions, emotions, and feedback in ways that were previously unimaginable. This paradigm shift in communication dynamics has paved the way for groundbreaking initiatives like the "Social Media Sentiment Analysis" project. This initiative seeks to harness the immense wealth of information embedded within the sprawling expanse of social media data by harnessing sophisticated data science techniques. Through meticulous and systematic analysis of sentiments expressed in social media posts, this endeavor aspires to offer businesses and organizations invaluable insights into customer perceptions, brand reputation, and the overarching sentiment prevailing within the public sphere.

The sheer magnitude and diversity of data generated by users on social media platforms each day have given rise to a dynamic tapestry of human expression, capturing everything from mundane observations to deeply profound reflections. Each post, tweet, or comment encapsulates a potential trove of information that, when properly extracted and interpreted, has the power to provide a comprehensive understanding of the prevailing sentiment within society. In an era where public opinion can sway markets, influence policies, and shape narratives, the ability to decode and comprehend this sentiment assumes paramount importance.

Sentiment analysis, a branch of natural language processing (NLP), has emerged as a critical tool in uncovering the sentiments enmeshed within textual data. This computational approach involves categorizing text as positive, negative, or neutral, thereby quantifying the sentiments conveyed. While humans might possess an inherent capacity to intuitively gauge sentiment in written communication, the sheer scale of social media content necessitates the application of automated solutions. Sentiment analysis not only enables the processing of vast volumes of data but also eradicates the potential for subjective biases that might inadvertently creep into manual analysis.

For businesses and organizations, deciphering the sentiments that permeate the digital realm holds immense strategic significance. Consumer perceptions have the potential to either elevate a brand to new heights or bring about its downfall. Social media sentiment analysis offers a real-time window into these perceptions. By assessing the sentiments associated with their

products, services, or marketing campaigns, businesses can identify areas for improvement and capitalize on their strengths. Positive sentiments can be harnessed to reinforce brand loyalty, while negative sentiments can be addressed proactively to mitigate potential reputational damage. In essence, sentiment analysis serves as a guiding compass, steering strategic decision-making within the fluid landscape of consumer preferences.

Beyond individual brands, sentiment analysis extends its purview to encompass broader industry trends and the collective sentiment toward significant societal issues. Through the aggregation and analysis of sentiments expressed across various social media platforms, researchers and policymakers can gain valuable insights into the pulse of the public. This can prove instrumental in the formulation of evidence-based policies and the identification of emerging societal concerns. During times of crisis, such as natural disasters or health emergencies, sentiment analysis can provide swift insights into public sentiment, thereby enabling authorities to tailor their responses to address prevailing concerns and anxieties effectively.

However, delving into the realm of sentiment analysis comes with its set of challenges. The nuances of human language, encompassing elements like sarcasm, irony, cultural context, and the ever-evolving landscape of slang, all present formidable hurdles to accurate analysis. For instance, a seemingly positive phrase like "this is sick" might actually convey praise in contemporary slang, but it could be misconstrued as negative sentiment when interpreted literally. Context emerges as a pivotal factor, and the development of algorithms that can accurately decipher context remains a complex and ongoing challenge. Furthermore, languages themselves are incredibly diverse, and sentiment analysis models that perform remarkably well in one language might encounter obstacles when faced with another due to linguistic idiosyncrasies.

As with any data science endeavor, the quality of insights derived from sentiment analysis hinges heavily on the quality of the underlying data. Social media posts, by their nature, can be riddled with noise, ranging from typos and grammatical errors to intentional misspellings aimed at evading automated content filters. Preprocessing steps, including text normalization and noise reduction, are crucial to ensuring the reliability of sentiment analysis outcomes. Furthermore, biases present within the training data can lead to skewed results, potentially leading to the overrepresentation of specific demographics or viewpoints.

Ethical considerations also loom large in the realm of sentiment analysis, particularly when it comes to public discourse. Striking a balance between

safeguarding the freedom of expression and the need to curb hate speech, misinformation, and cyberbullying poses a formidable challenge. The algorithms employed for sentiment analysis must be thoughtfully designed to prevent amplifying existing biases and to handle diverse viewpoints with fairness and impartiality.

The landscape of sentiment analysis has been significantly transformed by technological advancements, particularly in the domains of deep learning and neural networks. Modern models, such as recurrent neural networks (RNNs), convolutional neural networks (CNNs), and transformer-based architectures, have demonstrated impressive capabilities in discerning intricate patterns within textual data. Transfer learning, a technique in which a model trained on one task is adapted for another, has proven particularly valuable in sentiment analysis. Pretrained models can be fine-tuned on sentiment-specific datasets, thereby harnessing their innate understanding of language while tailoring them to the nuances of sentiment classification.

As the "Social Media Sentiment Analysis" project continues to evolve and mature, its potential implications for businesses, organizations, and society at large are profound and far-reaching. The insights extracted from sentiment analysis have the power to shape customer-centric strategies, amplify brand loyalty, and empower decision-making with well-informed insights. Moreover, the amalgamated sentiment data can expedite the identification of societal trends and public concerns, thereby facilitating evidence-based policymaking and fostering open and constructive dialogues.the evolution of social media platforms into multifaceted arenas of human expression has provided the fertile ground for the conception of the "Social Media Sentiment Analysis" project. This endeavor underscores the potency of data science in decoding the sentiments that underlie digital communication.

Through meticulous analysis of sentiments expressed in social media posts, this project serves as a gateway to a deeper comprehension of consumer perceptions, brand reputation, and the prevailing sentiment reverberating within the public sphere. Despite challenges stemming from language intricacies, data quality, biases, and ethical considerations, the relentless progress of technological advancement continues to expand the horizons of sentiment analysis. As this project unfurls its potential, its impact on shaping strategic decisions, informing policies, and fostering meaningful engagement ripples across businesses, organizations, and society at large.

1.2..MOTIVATION FOR SOCIAL MEDIA SENTIMENT ANALYSIS:

Companies and brands can gain valuable insights into customer opinions and perceptions about their products or services. By analyzing social media sentiment, businesses can understand customer satisfaction, identify areas for improvement, and make informed decisions about their marketing strategies.

Social media sentiment analysis helps organizations monitor their online reputation. By tracking sentiments, they can quickly identify and address negative feedback or potential PR crises, allowing them to maintain a positive image and manage public perception effectively.

Social media sentiment analysis can provide feedback for product development teams. By analyzing customer opinions, businesses can identify features that users like or dislike, helping them refine and enhance their offerings to better match customer preferences.

During times of crisis, such as product recalls or negative events, monitoring social media sentiment can provide real-time insights into public reactions.

This enables companies to respond promptly, mitigate negative sentiment, and take appropriate actions to manage the situation.Social media sentiment analysis can gauge the effectiveness of marketing campaigns. By understanding how people react to advertisements and promotions, businesses can adjust their strategies to resonate better with their target audience.

Social media sentiment analysis allows companies to compare their sentiment with that of their competitors.

This helps in understanding market dynamics, identifying strengths and weaknesses, and adjusting strategies accordingly Governments, political parties, and public figures can utilize sentiment analysis to gauge public opinion on various policies, initiatives, and events. This information can guide decision-making and communication strategies.

1.3.OBEJECTIVES

MULTILINGUAL SUPPORT

Our sentiment analysis framework will be designed to handle multiple languages, enabling businesses to understand global sentiments and expand their reach effectively.

REAL-TIME MONITORING

Implementing real-time sentiment monitoring will provide businesses with up-to-the-minute insights, allowing them to respond swiftly to evolving trends and customer reactions.

COMPETITOR ANALYSIS

We will incorporate comparative sentiment analysis to help businesses gauge their performance against competitors and identify areas for improvement.

SENTIMENT PREDICTION

By leveraging historical data and machine learning algorithms, our system will offer sentiment prediction, aiding businesses in anticipating shifts in user emotions and planning proactive strategies.

INFLUENCER IDENTIFICATION

Through sentiment analysis, we can identify influential users whose opinions carry significant weight, helping businesses engage with key individuals to amplify positive sentiment and address concerns.

MARKETING CAMPAIGN EVALUATION

The system can evaluate the sentiment impact of ongoing marketing campaigns, providing feedback on campaign effectiveness and guiding adjustments for optimal results.

CRISIS MANAGEMENT

Our solution can serve as an early warning system, detecting negative sentiment spikes that might indicate potential PR crises, enabling businesses to take swift action and mitigate reputational damage.

PRODUCT FEEDBACK UTILIZATION

Businesses can extract valuable insights from user sentiments about their products, guiding product development and enhancements based on customer preferences and criticisms.

2.1.PROBLEM IDENTIFICATION

Social media data is often unstructured, noisy, and contains a lot of slang, emojis, and misspellings, making it challenging to process accurately.Bias in data can lead to skewed sentiment analysis results, as certain groups or sentiments might be overrepresented or underrepresented in the data.Social media posts frequently include sarcasm and irony,

which can be difficult for sentiment analysis models to interpret correctly. A positive sentiment might be expressed using negative words, and vice versa.

Understanding the context of a post is crucial for accurate sentiment analysis. The same words can have different meanings based on the context in which they are used.Social media content is often multilingual, and sentiment analysis models need to be able to handle different languages to provide accurate results.Sentiments can change over time due to evolving events, trends, or news.

A model trained on older data might not perform well on current social media posts.Simple positive/negative sentiment labels might not capture the nuances of sentiment.

Users might express mixed emotions or sentiments that fall outside these categories.Sentiment analysis models trained on one domain might not perform well when applied to a different domain.

They need to be adapted or fine-tuned for specific industries or topic. Different users might express sentiments differently. A positive statement from one user might have a different sentiment than the same statement from another user.

2.2.PROPOSED SYSTEM FOR SOCIAL MEDIA SENTIMENT ANALYSIS:

DATA COLLECTION AND PREPROCESSING

Gather data from various social media platforms using APIs or web scraping tools.Preprocess the data to clean and normalize text, handle special characters, remove emojis, and convert text to lowercase.

DATA LABELING AND ANNOTATION

anually label a subset of the data for training and validation. Use crowdsourcing platforms if a large labeled dataset is needed.Apply sentiment labels such as positive, negative, neutral, or even more fine-grained labels.

MODEL SELECTION AND TRAINING

- Choose a suitable sentiment analysis model, such as recurrent neural networks (RNNs), convolutional neural networks (CNNs), transformer models (e.g., BERT), or their variants.
- Fine-tune the selected model using the labeled data. Transfer learning from pre-trained language models can significantly boost performance.

CONTEXTUAL UNDERSTANDING:

- Utilize context-aware models that can capture the context of a sentence or post to improve sentiment interpretation.
- Consider using attention mechanisms to highlight important words and phrases within a post.

MULTILINGUAL SUPPORT

Incorporate language-specific models or train a multilingual model that can handle sentiment analysis for various languages.

REAL-TIME ANALYSIS

Implement a pipeline for real-time analysis of incoming social media data. This might involve efficient model inference and parallel processing.

HANDLING IMAGES AND VIDEOS

Use computer vision techniques to analyze images and videos for sentiment cues, such as facial expressions and visual context.

ADDRESSING SARCASM AND IRONY

Integrate sentiment analysis models with natural language understanding techniques that can identify sarcasm and irony using contextual clues.

DOMAIN ADAPTATION

Fine-tune the sentiment analysis model for specific domains to improve accuracy on industry-specific terminology and sentiments.

TEMPORAL ANALYSIS

Incorporate temporal models that can capture sentiment changes over time. Update the model periodically to adapt to evolving sentiment trends.

2.3.SOFTWARE DESCRIPTION ABOUT TABLEAU DESKTOP

Tableau Desktop is a powerful data visualization and business intelligence software developed by Tableau, which is now a part of Salesforce. It enables users to create interactive and shareable visualizations, reports, and dashboards from various data sources. Here's a comprehensive software description of Tableau Desktop:

Tableau Desktop is designed to help individuals and organizations explore, analyze, and understand their data by transforming raw data into meaningful insights and visual representations. It is widely used across industries to make data-driven decisions and communicate complex information effectively.

DATA CONNECTION AND INTEGRATION: Tableau Desktop supports connecting to various data sources such as databases, spreadsheets, cloud services, and more. It can blend and integrate data from multiple sources to create a unified dataset.

Data Visualization: Users can create a wide range of visualizations, including bar charts, line graphs, scatter plots, heat maps, maps, and more.

These visualizations can be customized to reflect data patterns, trends, and outliers.

Drag-and-Drop Interface Tableau offers an intuitive drag-and-drop interface that allows users to build visualizations without the need for complex coding. Users can simply drag fields onto shelves to create charts and graphs.

Dashboard Creation Users can combine multiple visualizations and objects to create interactive dashboards. Dashboards enable the combination of different views, allowing users to see different aspects of the data in one place.

Calculations and Expressions Tableau provides a powerful formula language called "Tableau Calculations." This allows users to create custom calculations, expressions, and aggregations based on their data, enabling deeper analysis.

Data Journalism Journalists and bloggers can use Tableau Public to visually represent complex data sets, making news stories more engaging and understandable.

SOFTWARE DESCRIPTION ABOUT TABLEAU PUBLIC

Tableau Public is a powerful data visualization software that allows users to create and share interactive visualizations, charts, and dashboards with the public. It's specifically designed for individuals, journalists, bloggers, and organizations that want to present their data in a visually engaging and informative manner. Here's a comprehensive description of Tableau Public:

Tableau Public is a free version of Tableau's data visualization platform, tailored for users who want to create compelling visualizations without the need for extensive technical skills or licensing costs. It enables users to connect to various data sources, transform raw data into meaningful insights, and design interactive dashboards that can be shared with a global audience.

Data Connection: Tableau Public allows users to connect to a wide range of data sources, including spreadsheets, databases, cloud services, and more. This data can be imported and transformed into visual elements.

Interactive Visualizations: Users can create interactive charts, graphs, maps, and other visual elements to represent data in a dynamic and engaging way. The interactive features allow viewers to explore the data on their own, enabling deeper insights.

Drag-and-Drop Interface: Tableau Public features an intuitive drag-and-drop interface, making it accessible for users with varying levels of technical expertise. This allows users to build visualizations without needing to write complex code.

Dashboards: Users can combine multiple visualizations into interactive dashboards. Dashboards provide a holistic view of the data and allow viewers to interact with different visualizations in one place.

Storytelling: Tableau Public enables users to create data-driven stories by arranging visualizations and text annotations in a sequence. This feature aids in conveying a narrative and guiding viewers through the data.

Sharing: Once a visualization or dashboard is created, users can publish it to the Tableau Public website. The visualizations can then be embedded in websites,

3.SYSTEM ANALYSIS

3.1.PERFORAMANCE ANALYSIS

The performance of sentiment analysis on social media data can vary widely based on several factors. These factors include the quality of the data, the complexity of the language used in the posts, the size and diversity of the dataset, and the techniques and models employed for sentiment analysis. Here are some key points to consider regarding the performance of social media sentiment analysis:

Data Quality Social media data can be noisy and filled with slang, abbreviations, emojis, and misspellings. This can make accurate sentiment analysis challenging, as these nuances might not be properly captured by traditional sentiment analysis models.

Language Complexity Social media posts can range from simple and straightforward language to highly contextual and sarcastic expressions. Understanding the context is crucial for accurate sentiment analysis.

Dataset Size and Diversity The size and diversity of the dataset used for training and testing models significantly impact performance. A larger and more diverse dataset can help models better generalize and handle various language styles and sentiments.

Preprocessing Proper preprocessing steps, such as tokenization, stemming, and removing special characters, play a significant role in improving sentiment analysis accuracy.

Model Selection The choice of sentiment analysis model or algorithm is crucial. Traditional approaches like rule-based methods might struggle with the complexity of social media data. Machine learning models like Support Vector Machines, Naive Bayes, and more advanced techniques like Recurrent Neural Networks (RNNs) and Transformers (such as BERT) have shown promising results.

Fine-tuning Pretrained language models like BERT can be fine-tuned on social media-specific data to improve performance. Fine-tuning involves training the model further on a domain-specific dataset to adapt it to the specific language and sentiment patterns of social media.

Emojis and Emoticons Emojis and emoticons carry emotional content that can greatly influence sentiment analysis. Some models are designed to incorporate

these symbols into their analysis, while others might struggle to interpret them accurately.

3.2.BASIC SYSTEM REQUIREMENT ABOUT TABLEAU

As of my last knowledge update in September 2021, here are the basic system requirements for running Tableau Desktop, which is a data visualization and business intelligence tool. Please note that these requirements might have changed since then, so I recommend checking the official Tableau website for the most up-to-date information.

OPERATING SYSTEM

PROCESSOR

- Intel Core i3 or equivalent
- Recommended: Intel Core i5 or equivalent

MEMORY (RAM)

- Minimum: 8 GB
- Recommended: 16 GB or more

HARD DISK SPACE

- Minimum: 1.5 GB for installation
- Additional space is required for data and workbooks

DISPLAY

- Minimum screen resolution: 1366 x 768

Network

- Internet connection might be required for certain features, like accessing online data sources.

OTHER REQUIREMENTS

- Microsoft .NET Framework 4.5.2 (Windows)
- Java Runtime Environment (JRE) 8 (Windows)
- Apple Xcode Command Line Tools (macOS)

3.3.DATABASE SOURCE

ALL THE DATA ARE CREATED BY OUR OWN

For a social media sentiment analysis dataset used in a Tableau project, you would typically want to include several fields in the Excel sheet to ensure comprehensive analysis and visualization. Here are some essential fields you might consider including:

- TEXT
- DATE/TIME
- SENTIMENT SCORE
- USER
- SOURCE
- HASHTAGS/MENTIONS
- COMMENTS
- .LOCATION
- URL/LINK
- LANGUAGE
- .TOPIC/CATEGORY

TEXT

This field contains the actual text of the social media posts or comments.

DATE/TIME

The timestamp of when the post was made or the comment was posted.

SENTIMENT SCORE

A numerical value representing the sentiment score of the text (e.g., positive, negative, or neutral sentiment).

USER

The username or identifier of the person who posted the content.

SOURCE

The social media platform or source from which the content was collected (e.g., Twitter, Facebook, Instagram).

HASHTAGS/MENTIONS

Any relevant hashtags or user mentions present in the text.Likes/Shares/Reactions.The number of likes, shares, or reactions the post received.

COMMENTS

The number of comments the post received.

LOCATION

The location (if available) from where the post was made or the user's location.

URL/LINK

If applicable, the URL or link associated with the post.

LANGUAGE

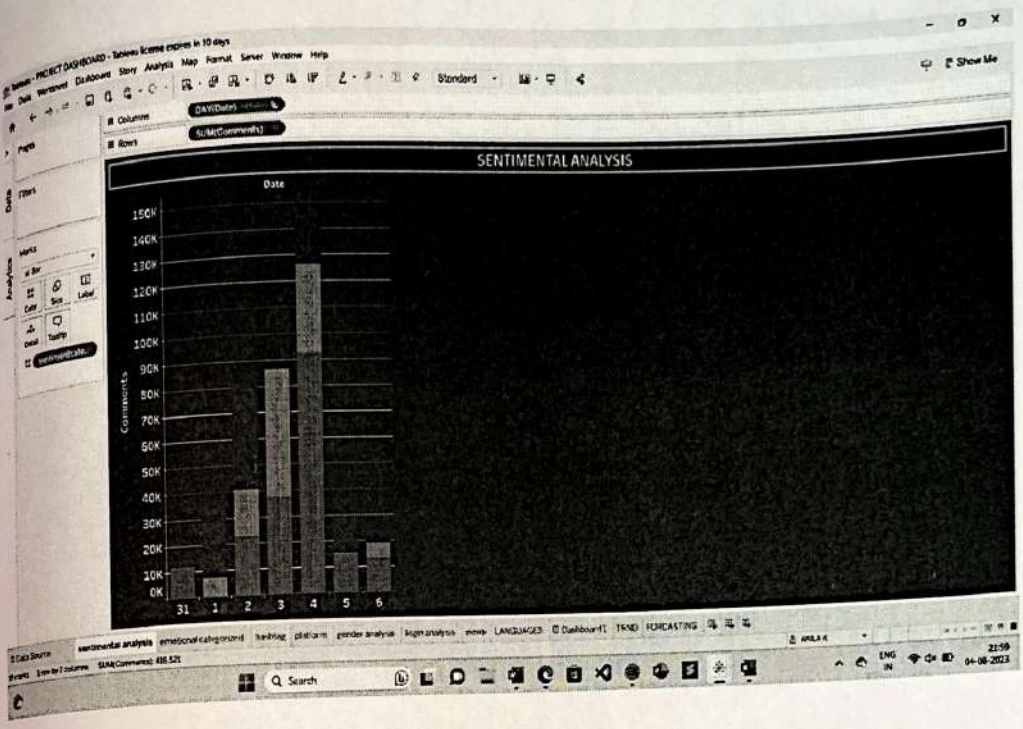
The language in which the post is written.

TOPIC/CATEGORY

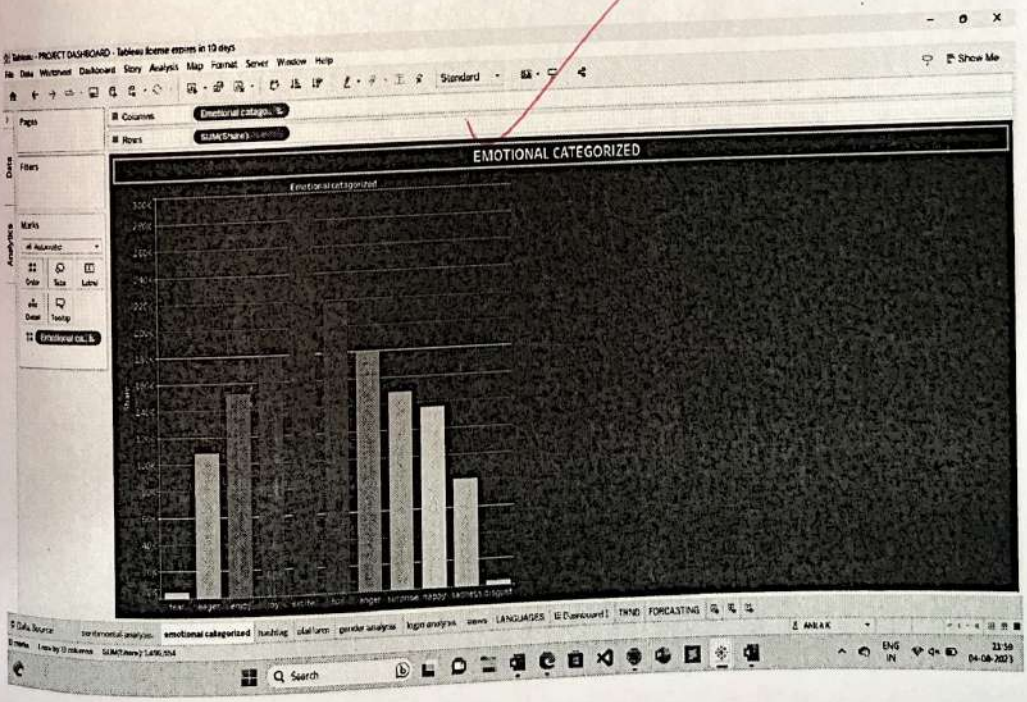
A categorization of the post's topic (e.g., politics, sports, technology).

RESULT AND DISCUSSION

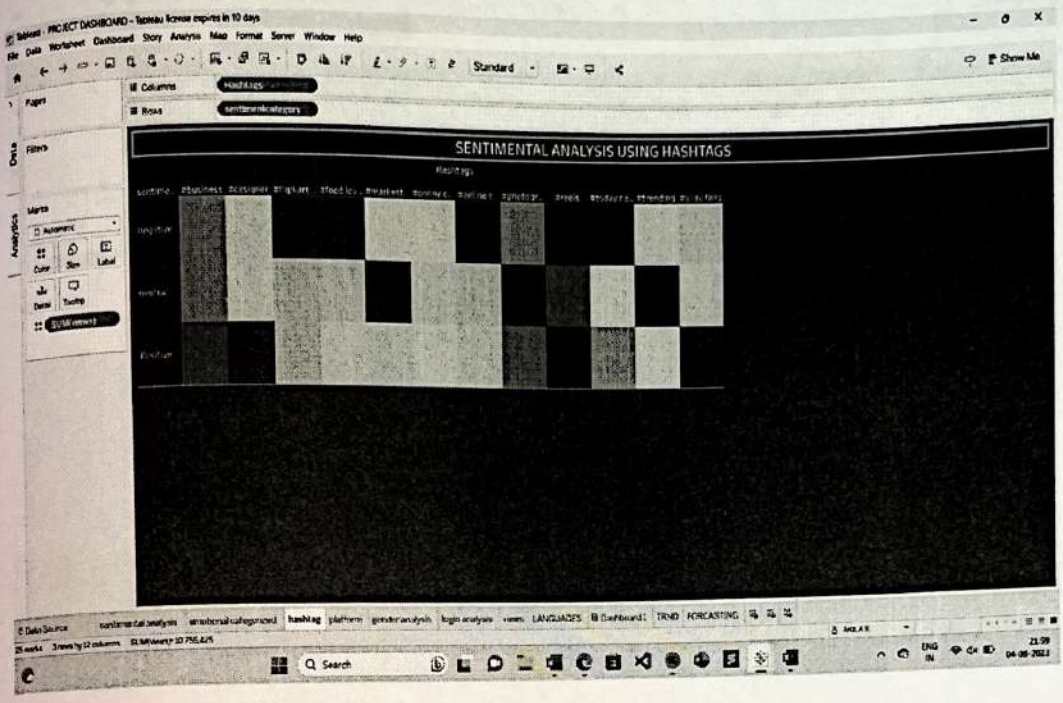
SENTIMENTAL ANALYSIS



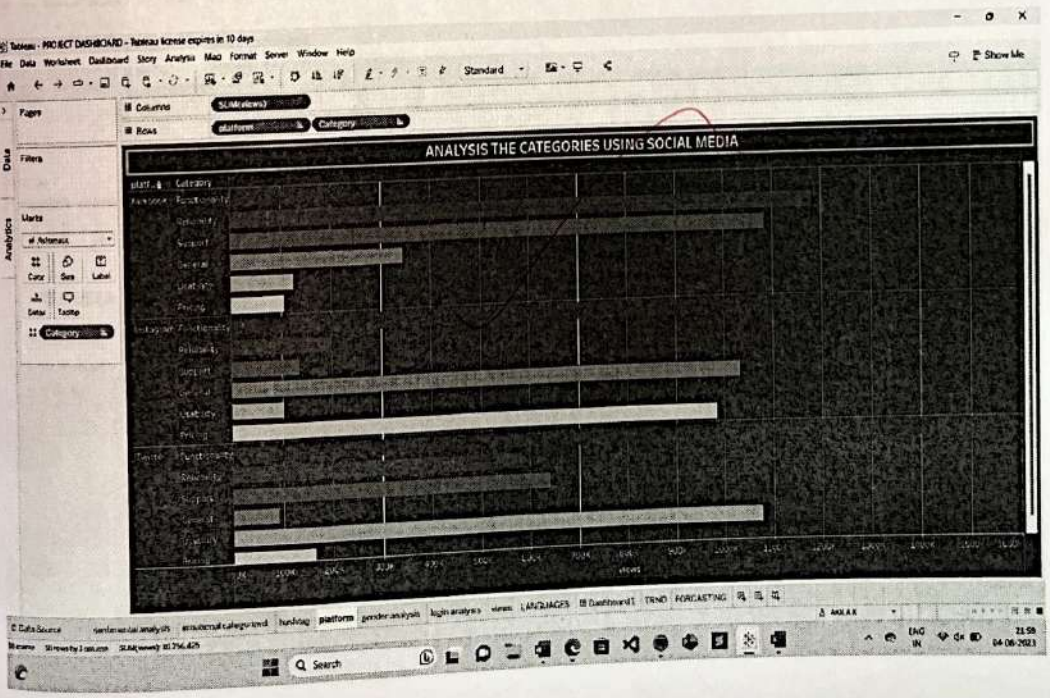
EMOTIONAL CATEGORIZED



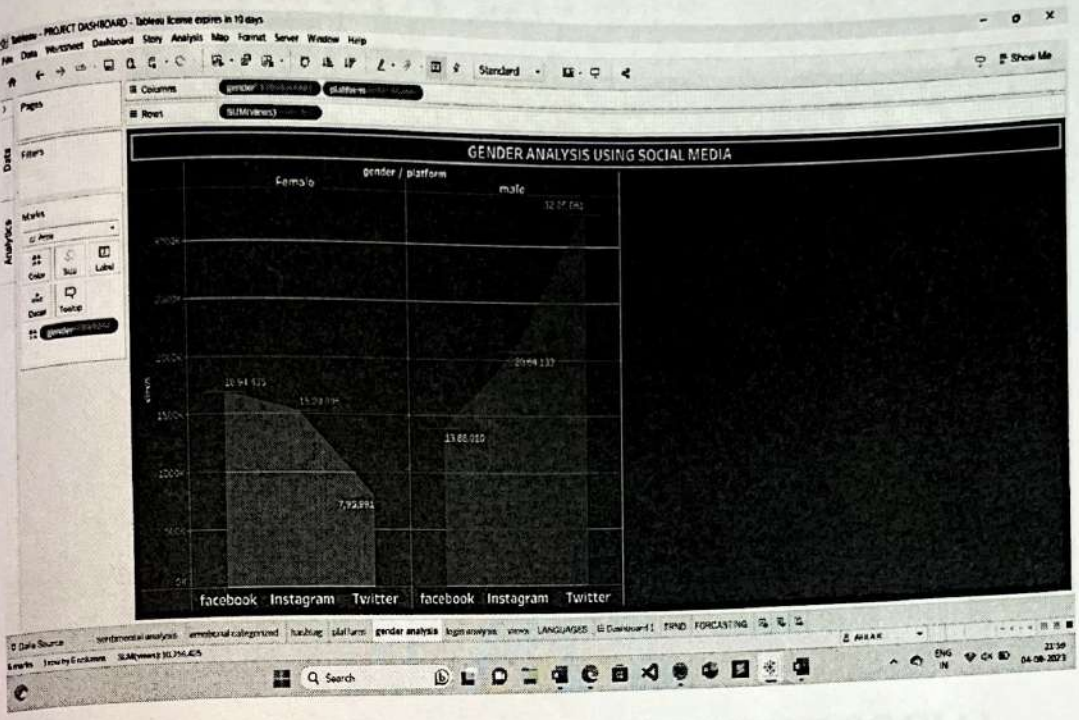
SENTIMENTAL ANALYSIS USING HASHTAGS



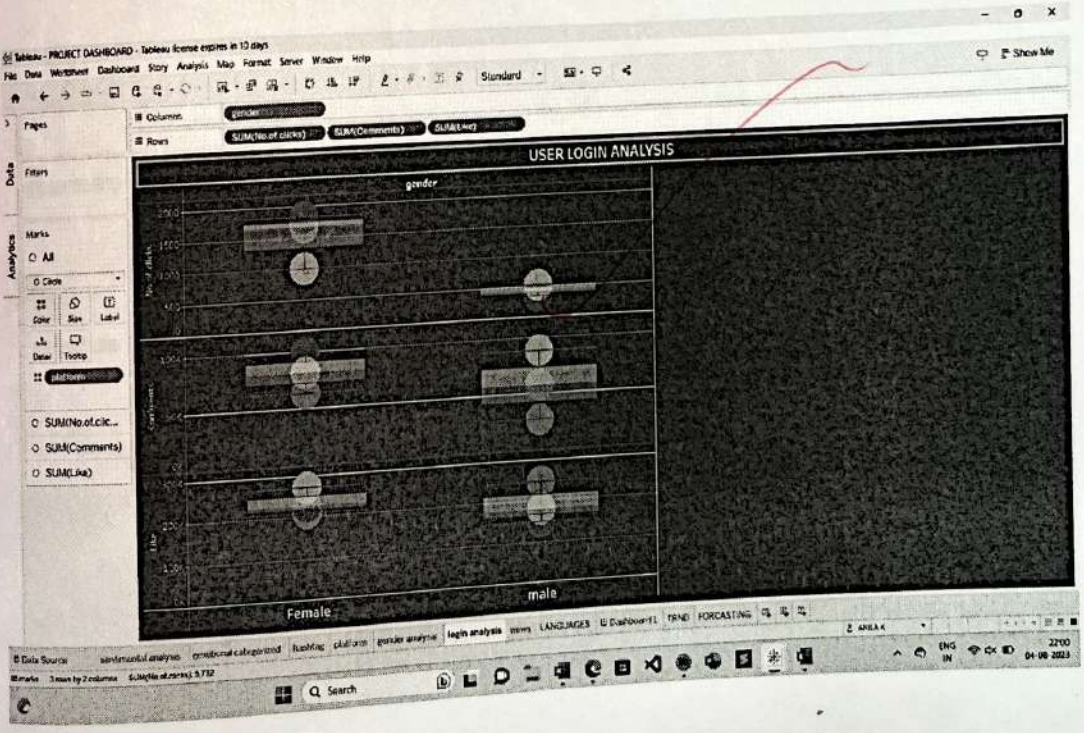
ANALYSIS FOR CATEGORIES USING SOCIAL MEDIA



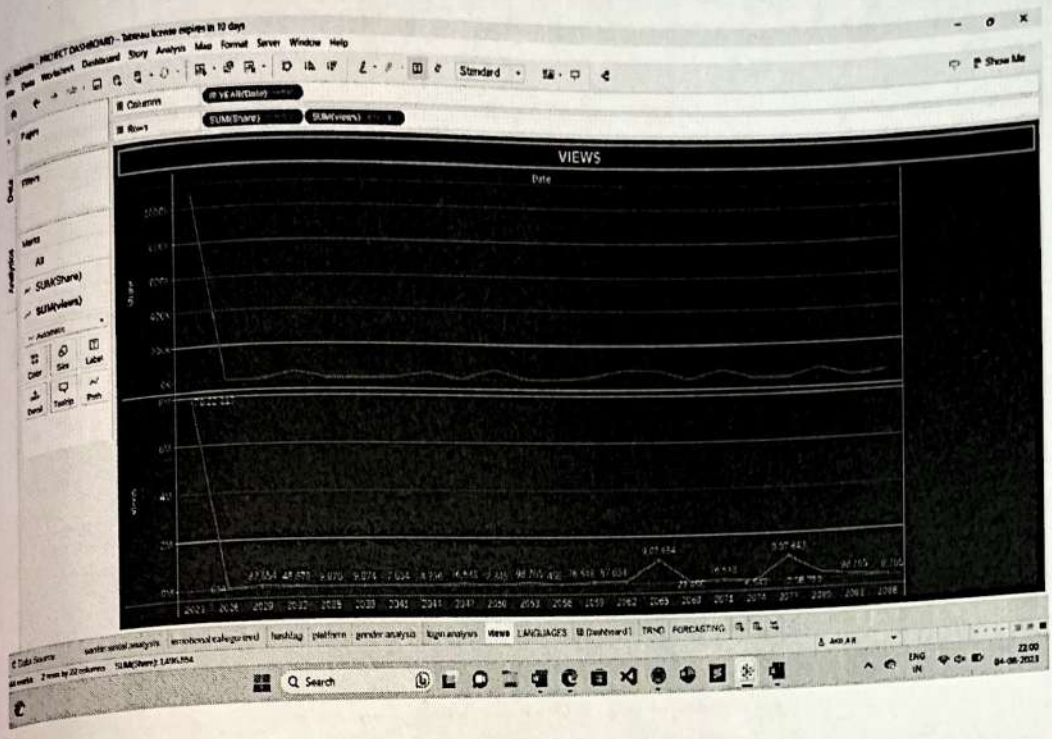
GENDER ANALYSIS USING SOCIAL MEDIA



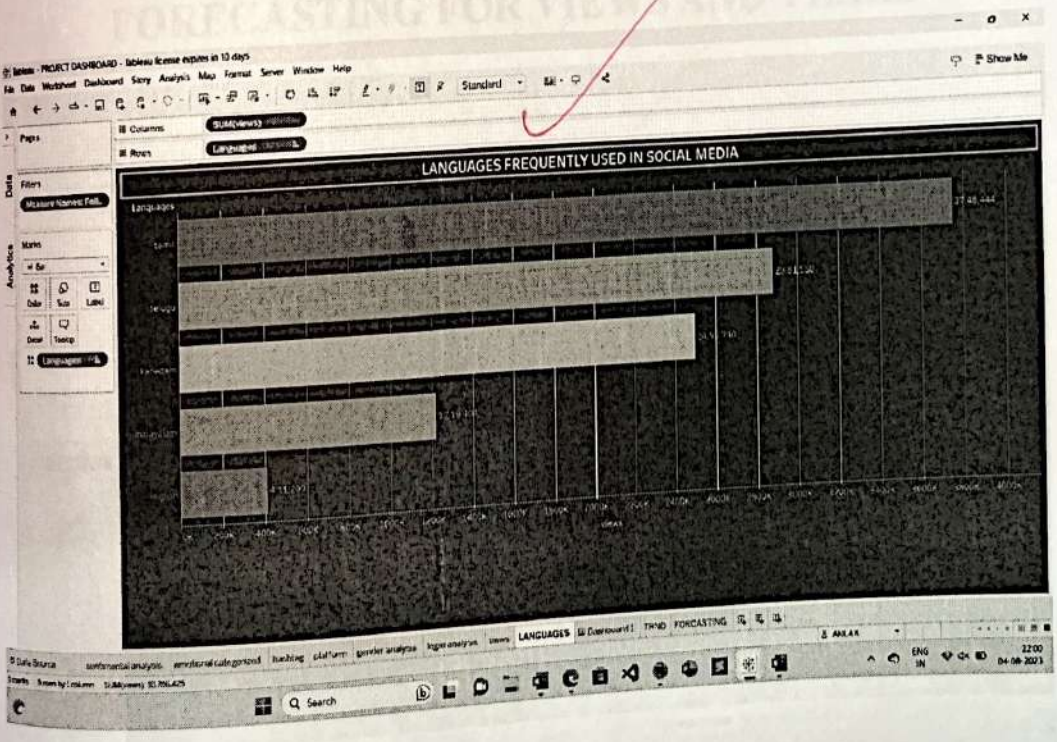
USER LOGIN ANALYSIS



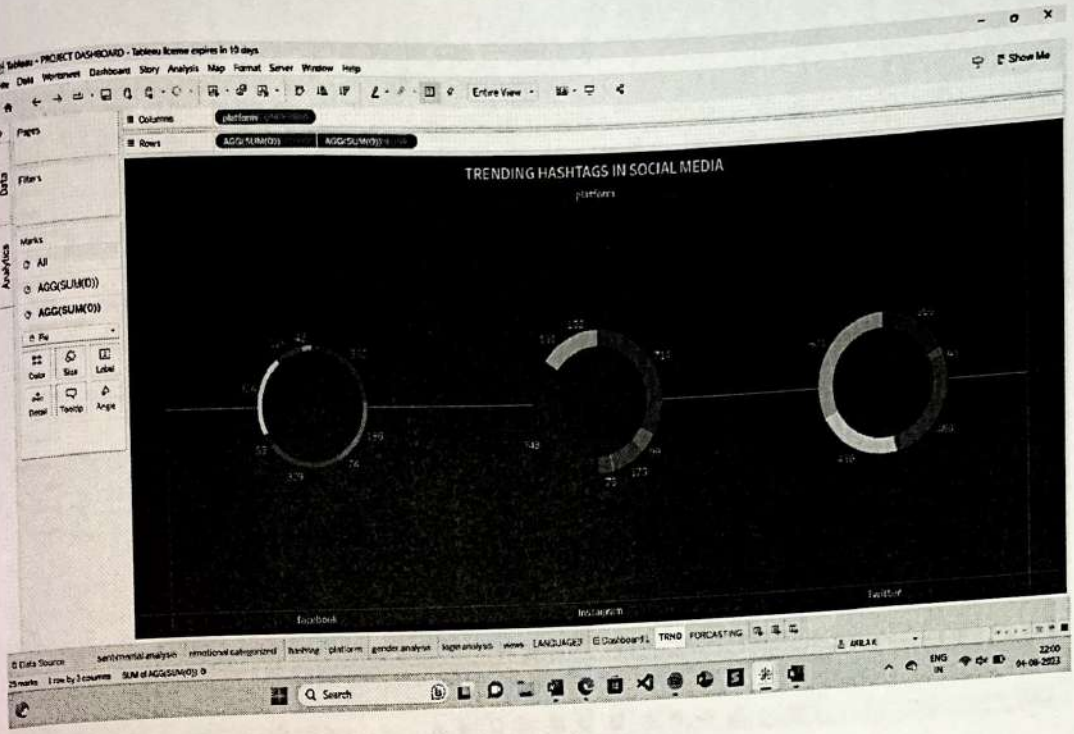
VIEWS



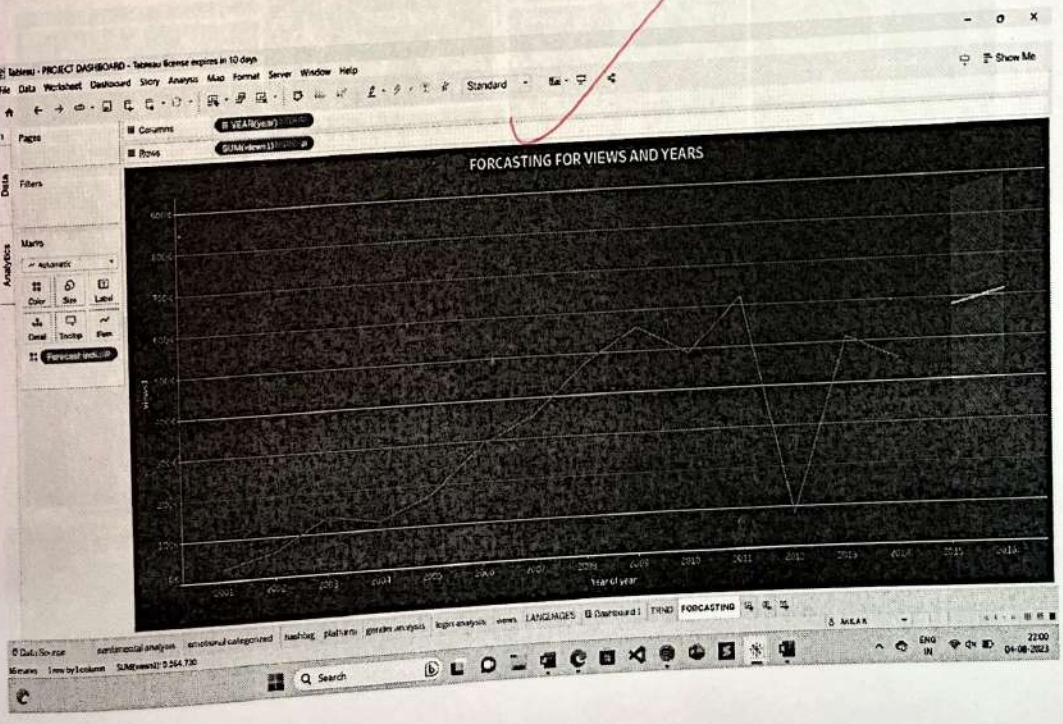
LANGUAGES FREQUENTLY USED IN SOCIAL MEDIA



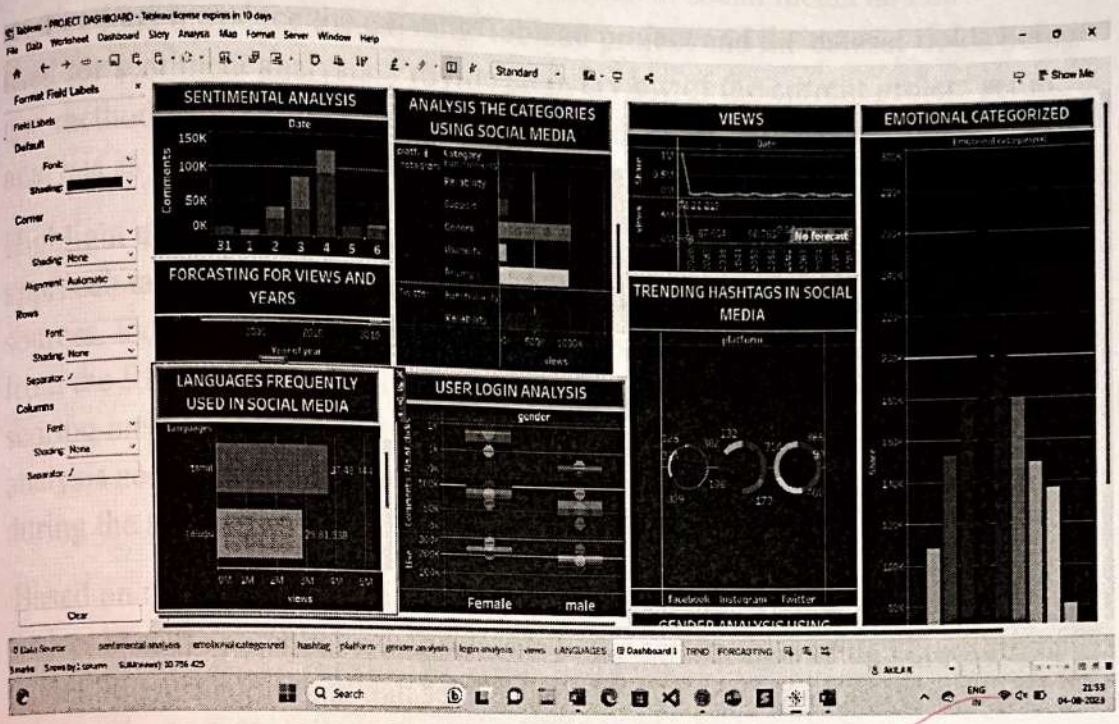
TRENDING HASHTAGS IN SOCIAL MEDIA

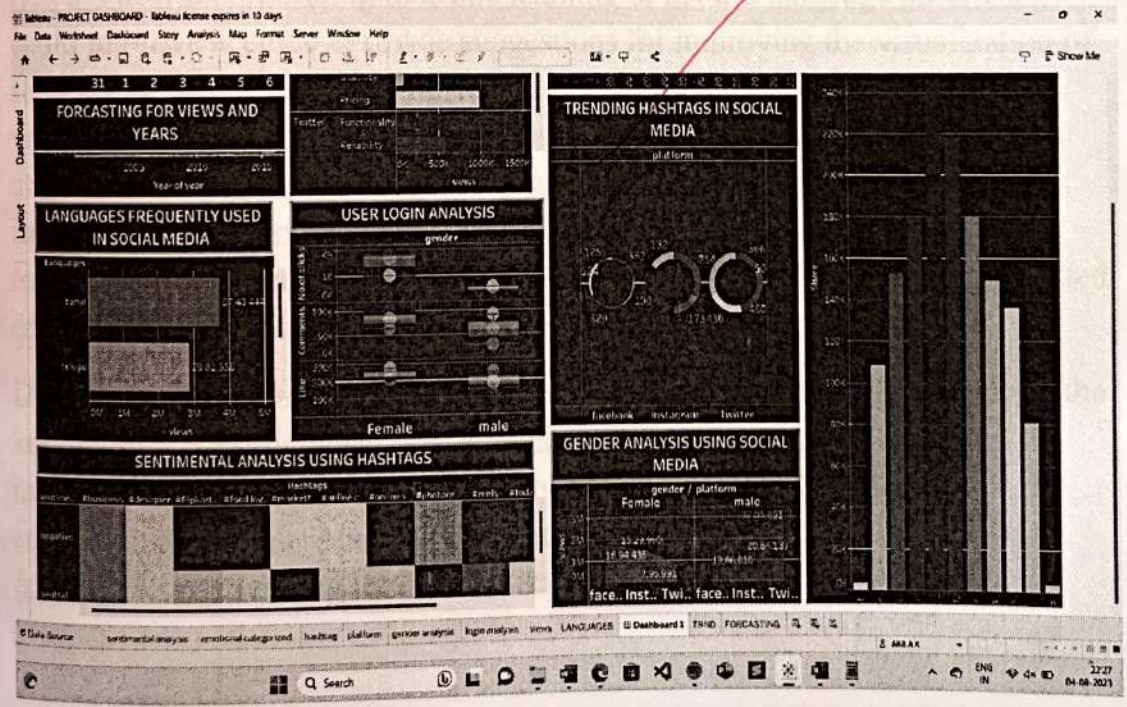


FORECASTING FOR VIEWS AND YEARS



SOCIAL MEDIA SENTIMENTAL ANALYSIS IN DASHBOARD





RESEARCH AND DEVELOPMENT REPORT

Describe the importance of sentiment analysis in social media and its applications.Introduce the existing Tableau project and the dataset fields being used for sentiment analysis. Provide an overview of the current project setup and methodology.Summarize the dataset fields being utilized for sentiment analysis as listed in the provided list.

Highlight the strengths and limitations of the current approach. Explain the approach taken for conducting research and development. Describe the data sources, tools, and techniques used for analysis.Present the key insights gained from the R&D process.Analyze the effectiveness of the existing sentiment scoring method.Discuss the impact of various dataset fields on sentiment analysis accuracy and depth of insights.Identify any challenges encountered during the analysis.

Based on the findings, outline the recommended improvements for the project.Discuss potential enhancements to the sentiment scoring algorithm or model.Suggest additional dataset fields that could provide more context and enhance analysis.Explore advanced sentiment analysis techniques such as aspect-based sentiment analysis or emotion detection.

Discuss how incorporating machine learning or natural language processing could improve accuracy.Provide suggestions for improving the visualization of sentiment analysis results using Tableau.Demonstrate how different types of visualizations (word clouds, time series plots, heatmaps) could be utilized.Explore the possibility of integrating external data sources (economic indicators, news trends) to enhance sentiment analysis context.Outline a roadmap for implementing the proposed improvements. Prioritize the suggested enhancements based on impact and feasibility.

Discuss potential challenges in implementing the improvements.Summarize the key findings, recommendations, and the potential impact of the proposed improvements.Emphasize the importance of continuous refinement and adaptation in sentiment analysis.Cite any research papers, articles, tools, or frameworks used during the R&D process.

CONCLUSION

social media sentiment analysis is a powerful tool that provides valuable insights into the collective emotions, opinions, and attitudes of individuals across various online platforms. Through the use of natural language processing and machine learning techniques, sentiment analysis enables us to gauge public sentiment towards specific topics, brands, products, events, and more.

The implications of sentiment analysis are far-reaching. It aids businesses in understanding customer perceptions, helping them make informed decisions about product development, marketing strategies, and customer service improvements. Similarly, sentiment analysis can assist in tracking public reactions to social and political events, contributing to the understanding of societal trends and potential shifts in public opinion.

However, it's important to note that sentiment analysis is not without challenges. Contextual understanding, sarcasm, cultural nuances, and language variations pose difficulties in accurately gauging sentiment. Additionally, the overreliance on automated analysis might lead to misinterpretations or oversimplifications of complex emotions.

As technology continues to advance, there's an opportunity for sentiment analysis to become more refined, capable of recognizing subtler emotional cues and adapting to evolving language trends. Collaboration between data scientists, linguists, and domain experts is crucial in enhancing the accuracy and reliability of sentiment analysis tools.

In essence, social media sentiment analysis opens a window into the collective mind of online communities. Its insights can shape business strategies, guide public relations efforts, and contribute to a deeper understanding of human behavior in the digital age. However, it's important to approach its results with a critical and nuanced perspective, recognizing its limitations and continuously refining its methodologies.

. Discuss how incorporating machine learning or natural language processing could improve accuracy.Provide suggestions for improving the visualization of sentiment analysis results using Tableau.Demonstrate how different types of visualizations

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DEPARTMENT OF INFORMATION TECHNOLOGY

VALUE ADDED COURSE
"DATA SCIENCE WITH TABLEAU"
31.07.2023 to 05.08.2023

PROJECT REPORT

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Abstract:

Healthcare analytics, powered by advanced data processing and predictive modeling, has emerged as a transformative force in modern healthcare systems. This paper explores the application of healthcare analytics and its integration into interactive dashboards, enabling healthcare providers to harness the power of data-driven insights to improve patient care and optimize operational efficiency.

The first section delves into the role of healthcare analytics, highlighting its potential to analyze vast amounts of patient data, including electronic health records, medical images, and genetic information. By identifying patterns, trends, and correlations, healthcare analytics aids in making accurate diagnoses, predicting disease outcomes, and personalizing treatment plans to optimize patient outcomes.

The second section focuses on the development and implementation of healthcare dashboards. These real-time, user-friendly interfaces present critical key performance indicators (KPIs) and metrics in a visually intuitive manner. Through interactive visualizations, dashboards facilitate timely decision-making by providing healthcare professionals with actionable insights, such as patient demographics, resource utilization, and quality indicators.

The paper then explores the significant impact of healthcare analytics and dashboards on healthcare organizations. By streamlining workflows, optimizing resource allocation, and improving operational efficiency, healthcare providers can enhance patient care and reduce healthcare costs. Moreover, the ability to track patient progress, identify high-risk areas, and forecast healthcare demands empowers healthcare institutions to adopt a proactive approach to healthcare delivery.

The ethical considerations of healthcare analytics, such as data privacy, security, and bias, are addressed in the subsequent section. Safeguarding patient information and ensuring data integrity are paramount in the pursuit of ethical and responsible use of analytics in healthcare.

Finally, the paper discusses future trends and challenges in healthcare analytics and dashboard development. The potential of artificial intelligence, machine learning, and natural language processing in further revolutionizing healthcare

nalytics is examined. Additionally, the adoption barriers and strategies for romoting data-driven decision-making in healthcare are explored.

n conclusion, healthcare analytics and dashboards offer unprecedented pportunities to transform healthcare delivery by empowering healthcare rofessionals with data-driven insights. By leveraging the power of analytics, ealthcare organizations can enhance patient care, improve operational fficiency, and navigate the complexities of modern healthcare challenges ffectively. However, addressing ethical concerns and fostering a data-driven ulture remain crucial for the sustainable integration of healthcare analytics and lashboard solutions into the healthcare ecosystem.

Chapter:1

.1Introduction:

The healthcare industry is experiencing a rapid transformation driven by echnological advancements and the unprecedented generation of data. This data evolution presents a tremendous opportunity to revolutionize patient care, nhance medical practices, and optimize healthcare systems. The "Healthcare nalytics Dashboard" project is an innovative and transformative initiative that eeks to leverage the power of data analytics and visualization using the cutting-dge Tableau platform.

Healthcare, as an industry, generates an extensive and diverse array of datasets, ncompassing various sources of information. From electronic health records EHRs) containing crucial patient data to performance metrics tracking hospital fficiency and effectiveness, the data landscape in healthcare is vast and ultifaceted. However, the sheer volume and complexity of this data pose gnificant challenges for healthcare professionals, administrators, and olicymakers who are eager to utilize it effectively for informed decision-aking and driving improvements in the industry.

At the heart of the "Healthcare Analytics Dashboard" project lies a core bjective - to streamline the extraction of meaningful insights from this oundance of data. By harnessing the robust capabilities of Tableau, a leading latform in data analysis and visualization, the project aims to create interactive nd user-friendly dashboards that empower stakeholders to explore healthcare ata effortlessly. The overarching vision is to transform raw data into actionable sights, equipping medical professionals, administrators, and policymakers ith the tools they need to make informed decisions and drive positive changes healthcare outcomes.

ata analytics holds immense potential to revolutionize the healthcare industry. y deploying sophisticated algorithms and statistical techniques, data analytics an reveal hidden patterns and correlations within the data, unlocking valuable sights that were previously elusive. For example, machine learning algorithms an analyze vast sets of patient data to identify early indicators of diseases, redict potential health outcomes, and recommend personalized treatment plans.

By tapping into these insights, healthcare professionals can improve patient diagnoses, optimize treatment strategies, and ultimately enhance patient outcomes.

One of the key features of the "Healthcare Analytics Dashboard" project is its emphasis on simplicity and accessibility. Tableau's user-friendly interface empowers stakeholders, regardless of their technical expertise, to interact with complex datasets and visualize the results in an intuitive manner. Medical professionals can seamlessly navigate through patient records, medical histories, and treatment outcomes, gaining a comprehensive view of individual health profiles. Administrators can monitor hospital performance metrics in real-time, tracking resource allocation, patient wait times, and readmission rates to optimize operational efficiency and enhance the quality of care provided.

The project's potential impact extends beyond individual patient care and hospital management. Policymakers and public health officials stand to benefit significantly from the insights provided by the analytics dashboard. By accessing real-time data on population health indicators, disease prevalence, and healthcare utilization rates, policymakers can design evidence-based interventions and targeted initiatives to address public health challenges effectively. Moreover, the dashboard's visualization capabilities allow policymakers to monitor the effectiveness of existing healthcare programs, optimize resource allocation, and make informed decisions to improve overall healthcare outcomes at a population level.

As with any healthcare initiative involving data, data security and privacy are paramount concerns. The "Healthcare Analytics Dashboard" project places the utmost emphasis on adhering to stringent data protection protocols and regulatory standards. Measures will be put in place to ensure the confidentiality and privacy of sensitive patient information, maintaining compliance with relevant healthcare regulations and ethical guidelines.

In conclusion, the "Healthcare Analytics Dashboard" project represents a groundbreaking endeavor at the forefront of healthcare innovation. By harnessing the power of data analytics and visualization through Tableau, the project aims to drive significant advancements in patient care, medical practices, and healthcare system optimization. Empowering stakeholders with actionable insights, this initiative seeks to shape the future of healthcare, leading to improved patient outcomes, optimized resource utilization, and ultimately a healthier society. Through collaboration, innovation, and a commitment to data-driven decision-making, the project endeavors to pave the way for a more efficient, effective, and patient-centric healthcare ecosystem.

1.2 motivation of the project:

The motivation behind the "Healthcare Analytics Dashboard" project is rooted in the recognition of the transformative potential that data analytics and visualization can bring to the healthcare industry. Healthcare generates vast amounts of data on a daily basis, ranging from patient records and medical procedures to hospital performance metrics and public health indicators. However, this wealth of information often remains underutilized, making it challenging for healthcare professionals, administrators, and policymakers to extract meaningful insights and translate them into actionable decisions.

The primary motivation for this project is to bridge the gap between the abundance of healthcare data and its practical application to improve patient care, enhance medical practices, and optimize healthcare systems. By creating an advanced analytics dashboard powered by Tableau, the project aims to empower stakeholders with a comprehensive and user-friendly platform for exploring and visualizing healthcare data.

The overarching goal is to drive data-driven decision-making in the healthcare domain. Medical professionals will be equipped with tools that enable them to access patient data more efficiently, leading to improved diagnoses, personalized treatment plans, and better health outcomes for patients. Hospital administrators will gain real-time insights into performance metrics, allowing them to optimize resource allocation, streamline operations, and enhance overall healthcare services. Policymakers will have access to data-driven evidence that informs the design of targeted interventions, policy changes, and public health initiatives to address community health needs effectively.

Additionally, the project's motivation extends to promoting a culture of continuous improvement within the healthcare industry. By providing stakeholders with intuitive and interactive visualizations of healthcare data, the project aims to foster a data-driven mindset, encouraging healthcare professionals to use data as a powerful tool in their decision-making processes.

Moreover, the project seeks to address the challenges of data complexity and data silos commonly faced in healthcare organizations. By centralizing and aggregating diverse datasets, the analytics dashboard facilitates collaboration

and information sharing among healthcare stakeholders, promoting interdisciplinary approaches to patient care and driving greater efficiency in healthcare delivery.

Ultimately, the motivation behind the "Healthcare Analytics Dashboard" project is to unlock the full potential of healthcare data. By democratizing access to data analytics and visualization tools through Tableau, the project aims to empower stakeholders at all levels of the healthcare ecosystem, from individual medical practitioners to large healthcare institutions and policymakers. Through this democratization, the project endeavors to drive positive changes in patient outcomes, healthcare services, and public health initiatives, contributing to the overall advancement of the healthcare industry and ultimately benefiting the health and well-being of individuals worldwide.

Objective:

The primary objective of the "Healthcare Analytics Dashboard" project is to simplify the process of extracting meaningful insights from this abundance of data. By employing Tableau's robust capabilities, we aim to create interactive and intuitive dashboards that empower stakeholders to explore healthcare data effortlessly. These visualizations will serve as powerful tools, enabling medical professionals, administrators, and policymakers to gain actionable insights, identify trends, and uncover hidden patterns within the data, which, in turn, can lead to data-driven decision-making and improved healthcare outcomes.

The Value of Data Analytics in Healthcare:

In the era of digital transformation, the healthcare industry has witnessed a data explosion, fueled by advancements in medical technology, electronic health records (EHRs), wearable devices, and IoT sensors. This abundance of data holds immense potential to drive positive changes across various facets of healthcare. Data analytics in healthcare has emerged as a vital discipline that uses statistical, quantitative, and qualitative techniques to extract valuable information from complex datasets.

One of the key advantages of data analytics in healthcare is its ability to reveal previously unseen patterns and correlations. By examining vast quantities of patient data, analytics algorithms can identify risk factors for certain diseases, assess treatment effectiveness, and predict potential health outcomes. For example, machine learning algorithms can analyze EHRs to identify patterns

indicative of chronic conditions like diabetes or cardiovascular disease, allowing for early intervention and personalized treatment plans.

Furthermore, data analytics plays a crucial role in healthcare quality improvement. By tracking and analyzing clinical outcomes, patient satisfaction scores, and healthcare facility performance metrics, healthcare organizations can identify areas that require improvement and implement evidence-based strategies to enhance patient care and safety. This continuous feedback loop helps healthcare providers deliver higher-quality care and create a culture of continuous improvement.

The Role of Tableau in Healthcare Data Visualization:

Tableau, a powerful and widely adopted data visualization platform, has gained significant traction in the healthcare industry due to its intuitive interface and user-friendly functionalities. Its ability to connect to diverse data sources, including spreadsheets, databases, and cloud-based repositories, makes it an ideal tool for analyzing and visualizing complex healthcare datasets.

Through Tableau's interactive dashboards and visualizations, healthcare professionals can explore data from multiple angles, zoom in on specific aspects, and drill down to granular details. These visual representations facilitate better comprehension of complex data, enabling medical professionals to detect trends, spot anomalies, and gain valuable insights for improving patient care.

Tableau's real-time data processing capabilities are particularly valuable in the fast-paced and dynamic healthcare environment. Medical professionals can monitor critical patient metrics, track treatment progress, and respond swiftly to changes in health status. This real-time visibility enables timely interventions and improved patient outcomes, especially in emergency care settings.

The Impact on Medical Professionals:

The "Healthcare Analytics Dashboard" project holds immense promise for medical professionals who stand at the forefront of patient care. In their daily practice, healthcare providers grapple with an overwhelming amount of patient data, ranging from medical histories and diagnostic reports to prescription records and treatment plans. Traditionally, accessing and analyzing this data required significant manual effort and time.

With the implementation of the analytics dashboard, medical professionals gain access to a centralized and organized repository of patient information. By simply interacting with the dashboard, they can quickly retrieve comprehensive

patient profiles, including medical histories, lab results, and prescribed medications. This streamlined access to data allows physicians to make well-informed and evidence-based decisions, leading to more precise diagnoses and personalized treatment strategies.

Moreover, the dashboard's ability to aggregate and visualize data from multiple sources offers a holistic view of patient health, facilitating a multidisciplinary approach to care. For instance, a patient's primary care physician can collaborate with specialists, pharmacists, and allied healthcare professionals, all working with the same comprehensive dataset. This collaborative care model improves care coordination, reduces the likelihood of medical errors, and enhances patient outcomes.

The Impact on Hospital Administrators:

Beyond clinical care, the "Healthcare Analytics Dashboard" project extends its impact to hospital administrators, who play a pivotal role in managing healthcare facilities efficiently. Administrators face a multitude of challenges, including resource allocation, capacity management, and financial sustainability. The dashboard's analytics capabilities provide crucial insights that help administrators optimize operations and maximize the quality of care delivered.

By analyzing hospital performance metrics, such as patient wait times, length of stay, and readmission rates, administrators can identify bottlenecks and inefficiencies in the healthcare workflow. Armed with this information, they can implement process improvements, allocate resources more effectively, and optimize staff scheduling to enhance overall operational efficiency.

The dashboard also aids administrators in tracking key performance indicators (KPIs) related to revenue generation, cost management, and budget planning. With access to real-time financial data, administrators can make data-driven decisions to maintain the financial health of the healthcare institution while ensuring a high standard of care for patients.

Moreover, the dashboard's analytics capabilities extend to human resource management. Administrators can analyze employee performance, track workforce productivity, and identify opportunities for staff development and training. By nurturing a skilled and motivated workforce, healthcare institutions can deliver better patient experiences and reduce staff turnover rates.

The Impact on Policymakers and Public Health:

In addition to the direct impact on patient care and hospital management, the "Healthcare Analytics Dashboard" project has far-reaching implications for policymakers and public health initiatives. Policymakers at the local, regional, and national levels require accurate and up-to-date data to develop effective healthcare policies and interventions.

By leveraging the analytics dashboard, policymakers can access real-time data on population health indicators, disease prevalence, and healthcare utilization rates. Armed with this information, they can identify high-risk populations, target specific health issues, and design evidence-based interventions to address public health challenges.

The dashboard's visualizations offer policymakers a comprehensive view of the effectiveness of existing healthcare programs and policies. By analyzing data on preventive care, vaccination rates, and disease management outcomes, policymakers can make informed decisions to allocate resources where they are most needed and optimize the allocation of healthcare funding.

Furthermore, the analytics dashboard plays a crucial role in monitoring and responding to public health emergencies and outbreaks. During times of crisis, such as disease outbreaks or natural disasters, timely and accurate data can be a matter of life and death. The dashboard's ability to visualize real-time data empowers policymakers to make swift decisions, coordinate response efforts, and implement targeted interventions to mitigate the impact of the crisis on public health.

Data Security and Privacy Considerations:

As the "Healthcare Analytics Dashboard" project delves into the realm of healthcare data, ensuring data security and privacy is of paramount importance. The healthcare industry is subject to stringent regulatory frameworks, such as the Health Insurance Portability and Accountability

apter:2

problem identification:

healthcare analytics and dashboard projects, several challenges and problem eas need to be carefully identified and addressed to ensure the success and ectiveness of the initiative. Some of the key problem areas are:

1. **Data Complexity and Quality:** Healthcare data is incredibly diverse, originating from various sources and systems. Integrating and harmonizing data from different electronic health records (EHRs), medical devices, and administrative systems can be complex. Data quality issues, such as missing or inaccurate data, can also impact the reliability and validity of analytics results.

2. **Data Security and Privacy:** Healthcare data contains sensitive and confidential patient information. Protecting patient privacy and ensuring compliance with data security regulations (e.g., HIPAA in the United States) is a critical challenge in healthcare analytics projects. Any breaches or mishandling of data could have severe legal and ethical consequences.

3. **Interoperability:** Achieving interoperability among different healthcare systems and data sources is a significant hurdle. Ensuring that data can be seamlessly exchanged and integrated between disparate systems is essential for comprehensive healthcare analytics.

4. **Real-Time Data Processing:** In a fast-paced healthcare environment, real-time data processing and analytics are essential for timely decision-making and interventions. The ability to process and visualize data in real-time is critical, especially in emergency care situations.

5. **Data Governance and Standards:** Establishing robust data governance and adhering to data standards are crucial for maintaining data integrity, consistency, and trustworthiness. Clear data governance policies help

ensure that data is used and interpreted consistently across the organization.

6. **User Adoption and Training:** Even with a powerful analytics dashboard, its effectiveness depends on user adoption. Healthcare professionals and administrators need to be adequately trained and educated on using the dashboard to its full potential.

7. **Complexity of Insights:** Extracting actionable insights from complex healthcare datasets can be challenging. The dashboard should present data in a way that is easily understandable and actionable, even for non-technical users.

8. **Scalability:** As healthcare organizations grow and their data volume increases, the analytics infrastructure should be scalable to accommodate the expanding data requirements without compromising performance.

9. **Identifying Relevant Key Performance Indicators (KPIs):** Selecting the right KPIs is vital for assessing the performance of healthcare systems accurately. The analytics dashboard should focus on relevant metrics that align with the organization's goals and objectives.

10. **Analytics Bridging the Gap between and Decision-Making:** While analytics can provide valuable insights, the challenge lies in translating those insights into tangible actions and decisions. Healthcare professionals and administrators need support in understanding how to use analytics results to drive improvements in patient care and operations.

11. **Budget and Resource Constraints**: Implementing a robust healthcare analytics dashboard requires financial investment and resources. Ensuring that the project remains within budget and aligns with the organization's priorities is crucial.

Addressing these problem areas requires a multidisciplinary approach involving data scientists, healthcare professionals, IT experts, and administrators. By identifying and proactively tackling these challenges, healthcare analytics and dashboard projects can maximize their impact and contribute significantly to improved patient outcomes and enhanced healthcare services.

2.2 proposed system:

The proposed system in healthcare analytics and dashboard aims to create a comprehensive and user-friendly platform that leverages data analytics and

visualization to drive informed decision-making and optimize healthcare services. The system will be built using Tableau, a powerful data visualization platform, and will address the identified challenges in healthcare analytics. The key components of the proposed system are as follows:

1. Data Integration and Quality Assurance: The system will incorporate robust data integration capabilities to seamlessly combine data from various sources, such as EHRs, medical devices, and administrative systems. A data quality assurance process will be implemented to identify and rectify any data inaccuracies or inconsistencies.

2. Interactive Dashboard Interface: The heart of the system will be an interactive and intuitive dashboard interface developed using Tableau. The dashboard will allow users to explore and visualize healthcare data in real-time, offering a user-friendly experience for both technical and non-technical stakeholders.

3. Real-Time Data Processing: The system will implement real-time data processing to enable healthcare professionals to access and analyze up-to-date information promptly. This feature is particularly critical in emergency care settings, where swift decision-making can save lives.

4. Data Security and Privacy Measures: To ensure data security and privacy, the system will implement robust encryption, access controls, and authentication mechanisms. Compliance with relevant healthcare regulations, such as HIPAA, will be a top priority.

5. Scalable Architecture: The system will be designed with scalability in mind, enabling it to handle increasing data volumes and accommodate the growth of healthcare organizations without compromising performance.

6. Data Governance and Standards: The system will enforce data governance policies and adhere to industry standards to maintain data consistency and integrity throughout the analytics process.

7. Key Performance Indicators (KPIs) Selection: The system will allow users to choose relevant KPIs tailored to their specific needs, such as patient outcomes, resource utilization, and operational efficiency.

8. Predictive Analytics: To enhance decision-making, the system will integrate predictive analytics capabilities. Machine learning algorithms will be utilized to forecast patient outcomes, identify high-risk patients, and recommend personalized treatment plans.

9. User Training and Support: To ensure user adoption, the system will provide comprehensive training and support to healthcare professionals, administrators, and policymakers. Training sessions will focus on effectively utilizing the dashboard to drive improvements in patient care and operations.

10. Actionable Insights: The system will present data insights in a clear and actionable manner, utilizing data visualizations, charts, and graphs that are easily interpretable. The goal is to empower users to make well-informed decisions based on the data presented.

11. Integration with Existing Systems: The proposed system will be designed to integrate seamlessly with existing healthcare IT infrastructure, minimizing disruption during implementation and maximizing the utilization of data from different sources.

12. Cost-Effectiveness: The system will be developed with cost-effectiveness in mind, ensuring that the benefits outweigh the investment required for implementation and maintenance.

n summary, the proposed system in healthcare analytics and dashboard is a ophisticated platform that embraces the power of data analytics and isualization. By addressing the identified problem areas and focusing on user xperience, data security, and actionable insights, the system aims to empower ealthcare professionals, administrators, and policymakers to make informed ecisions, optimize healthcare services, and ultimately improve patient utcomes. The integration of advanced analytics capabilities, real-time data rocessing, and a user-friendly interface will position the system as a vital tool n driving positive changes in the healthcare industry.

2.3 software description about tableau desktop:

Tableau Desktop is a powerful and user-friendly data visualization and analytics software developed by Tableau Software. It is designed to help users explore, analyze, and visualize data from various sources to gain valuable insights and make data-driven decisions. Tableau Desktop is widely used in industries like business, healthcare, finance, education, and government to uncover patterns, trends, and correlations within datasets.

Key Features of Tableau Desktop:

1. Data Connectivity: Tableau Desktop allows users to connect to a wide range of data sources, including spreadsheets, databases, cloud-based

platforms, and big data sources. This flexibility enables seamless integration of diverse datasets, making it easy to analyze data from multiple sources in one place.

2. Interactive Visualizations: One of the highlights of Tableau Desktop is its ability to create interactive and dynamic visualizations. Users can drag and drop data fields to create charts, graphs, maps, and dashboards with just a few clicks. Interactivity enables users to explore data at different levels of granularity and drill down into specific details.

3. Drag-and-Drop Interface: Tableau Desktop's intuitive drag-and-drop interface makes it accessible to users with various levels of technical expertise. No coding is required to create compelling visualizations, making it an ideal tool for both data analysts and non-technical users.

4. Data Blending and Joining: The software allows users to blend and join data from multiple sources, even if the data is in different formats or structures. This feature facilitates comprehensive data analysis by combining data from different systems and uncovering correlations that might otherwise be missed.

5. Calculation and Formulas: Tableau Desktop supports calculated fields and custom formulas, allowing users to create new data variables and perform complex calculations without altering the underlying dataset. This capability enables users to derive insights that might not be readily available in the original data.

6. Real-Time Data Analysis: Tableau Desktop can connect to live data sources, enabling real-time data analysis. This is particularly valuable in scenarios where immediate insights and decision-making are crucial, such as monitoring sales performance or tracking operational metrics.

7. Storytelling: Tableau Desktop offers a unique storytelling feature that enables users to weave together multiple visualizations into a cohesive narrative. Storypoints can be added to create dynamic presentations that guide stakeholders through the data analysis process, enhancing data communication and understanding.

8. Collaboration and Sharing: Tableau Desktop facilitates collaboration by allowing users to save and share their work in Tableau file formats or publish interactive dashboards to Tableau Server or Tableau Online. This enables seamless sharing of insights and visualizations with colleagues and stakeholders.

9. Mobile-Friendly: The visualizations created in Tableau Desktop are responsive and can be viewed on various devices, including desktops, tablets, and smartphones. This mobile-friendly feature enables users to access and interact with data on-the-go.

10. Security and Data Governance: Tableau Desktop supports enterprise-grade security features, including user authentication, access controls, and data encryption. This ensures that sensitive data remains secure and compliant with data governance policies.

In conclusion, Tableau Desktop is a versatile and user-friendly data visualization and analytics software that empowers users to explore data, create interactive visualizations, and make data-driven decisions. Its intuitive interface, powerful analytics capabilities, and seamless data integration make it a popular choice for data analysts, business professionals, and decision-makers across various industries.

Software description about tableau public:

Tableau Public is a free and cloud-based data visualization platform provided by Tableau Software. It allows users to create, publish, and share interactive data visualizations, dashboards, and reports with a wider audience on the web. Tableau Public is designed for data enthusiasts, journalists, bloggers, students, and anyone interested in exploring and sharing data-driven insights with the world.

Key Features of Tableau Public:

1. Cloud-Based Platform: Tableau Public is entirely cloud-based, which means users can access and work with their data visualizations from any web browser without the need for local installation. This cloud-based approach makes it easy to collaborate and share visualizations with a global audience.

2. Interactive Data Visualizations: Similar to Tableau Desktop, Tableau Public allows users to create interactive and dynamic data visualizations. Users can drag and drop data fields, customize colors, and add filters to create compelling charts, graphs, maps, and dashboards.

3. Data Connectivity: Users can connect to various data sources, including files, spreadsheets, databases, and cloud-based data storage services. Data can be imported or updated regularly to keep visualizations up-to-date.

4. Tableau Public Profile: Each user on Tableau Public gets a profile page where they can showcase their published visualizations. The profile acts as a personal portfolio, showcasing a collection of interactive visualizations created by the user.

5. Social Sharing and Embedding: Tableau Public visualizations can be shared on social media platforms, such as Twitter, LinkedIn, and Facebook, with a single click. Additionally, users can embed their visualizations into websites, blogs, and articles, making it easy to disseminate insights to a broader audience.

6. Community and Collaboration: Tableau Public has an active and engaged community of data enthusiasts who share their visualizations and insights. Users can browse and explore public visualizations created by others, providing inspiration and opportunities for collaboration.

7. Limitations: While Tableau Public is a powerful platform, it has some limitations compared to Tableau Desktop and Tableau Server. Notably, visualizations are publicly accessible and cannot be restricted to specific users or organizations. Additionally, data sources must be stored publicly, and the data size is limited.

8. Tableau Public Gallery: The Tableau Public Gallery showcases a collection of featured and popular visualizations created by the Tableau Public community. This gallery is a valuable resource for discovering innovative data stories and insights.

9. Mobile-Friendly: Visualizations published on Tableau Public are responsive and can be viewed on various devices, including desktops, tablets, and smartphones. This mobile-friendly feature ensures that the visualizations reach a wider audience.

10. Data Storytelling: Tableau Public enables users to create data stories by combining multiple visualizations into a cohesive narrative. This storytelling feature enhances the impact of data communication and engages viewers with compelling data-driven narratives.

In conclusion, Tableau Public is a versatile and accessible data visualization platform that empowers users to explore, create, and share interactive data visualizations with a global audience. Its cloud-based nature, interactive capabilities, and social sharing features make it an excellent choice for data enthusiasts, journalists, educators, and anyone passionate about leveraging data to tell compelling stories and drive data-driven discussions.

hapter:3

1 performance analysis:

ne performance of healthcare analytics and dashboard solutions can have a ofound impact on the healthcare industry, leading to improved patient itcomes, enhanced operational efficiency, and more informed decision-aking. Here are some key aspects of performance in healthcare analytics and ashboard implementations:

1. **Data Accessibility and Integration:** The performance of a healthcare analytics dashboard heavily relies on its ability to access and integrate data from various sources seamlessly. A well-performing dashboard should be capable of handling large and diverse datasets, including electronic health records (EHRs), medical devices, administrative systems, and external data sources.

2. **Real-Time Data Processing:** In healthcare, timely decision-making can be critical to patient care. A high-performance analytics dashboard should process and analyze data in real-time, enabling medical professionals to access up-to-date information and respond swiftly to changes in patient conditions or operational metrics.

3. **Speed and Responsiveness:** The dashboard's speed and responsiveness are crucial to providing an optimal user experience. Users should be able to interact with visualizations, apply filters, and drill down into data without experiencing significant delays or lag.

4. **Visualization Performance:** The ability to generate interactive and visually compelling charts, graphs, and dashboards is a core aspect of healthcare analytics. A high-performance dashboard should render visualizations quickly and smoothly, allowing users to gain insights intuitively.

5. **Scalability:** As healthcare organizations grow and generate more data, the analytics infrastructure should be scalable to accommodate increasing data volumes and user demands without sacrificing performance.

6. **Predictive Analytics:** High-performance healthcare analytics dashboards can leverage predictive analytics to forecast patient outcomes, identify at-risk patients, and recommend personalized treatment plans. This capability enhances the dashboard's ability to support proactive and preventive healthcare interventions.

7. **User Experience:** A user-friendly interface and intuitive navigation are essential for user adoption and engagement. A well-designed dashboard should be accessible to both technical and non-technical users, enabling healthcare professionals, administrators, and policymakers to explore data effortlessly.

8. **Data Security and Privacy:** Healthcare analytics dashboards should prioritize data security and privacy. Robust encryption, access controls, and compliance with relevant healthcare regulations (e.g., HIPAA) are crucial to protect sensitive patient information.

9. **Actionable Insights:** The ultimate goal of a healthcare analytics dashboard is to provide actionable insights. A high-performance dashboard should present data in a clear and understandable manner, facilitating data-driven decision-making and leading to tangible improvements in patient care and healthcare services.

10. **Integration with Existing Systems:** A well-performing healthcare analytics dashboard should seamlessly integrate with existing healthcare IT infrastructure, allowing for the efficient exchange of data and minimizing disruptions during implementation.

11. **Impact on Patient Outcomes and Healthcare Services:** Ultimately, the performance of a healthcare analytics dashboard should be assessed based on its impact on patient outcomes and healthcare services. Improved patient care, reduced costs, optimized resource allocation, and better public health interventions are indicators of a successful healthcare analytics implementation.

In conclusion, the performance of healthcare analytics and dashboard solutions is critical to driving positive changes in the healthcare industry. By providing timely access to comprehensive data, facilitating data-driven decision-making, and supporting proactive healthcare interventions, high-performance analytics

dashboards can contribute significantly to improved patient care, operational efficiency, and overall healthcare outcomes.

3.2 basic system requirement for tableau:

Tableau is a powerful data visualization and analytics software that runs on both Windows and Mac operating systems. To run Tableau effectively, the following are the basic system requirements:

For Windows:

- Operating System: Microsoft Windows 7 or newer (64-bit)
- Processor: Intel Core i5 or equivalent AMD processor (64-bit)
- Memory (RAM): 8 GB or higher
- Hard Disk Space: 1.5 GB minimum free disk space for installation
- Screen Resolution: 1366 x 768 or higher

For Mac:

- Operating System: macOS 10.14 (Mojave) or newer
- Processor: Intel Core i5 or equivalent
- Memory (RAM): 8 GB or higher
- Hard Disk Space: 1.5 GB minimum free disk space for installation
- Screen Resolution: 1366 x 768 or higher

Additional requirements:

- Internet Connection: Tableau requires an internet connection to activate the software and access certain features, such as sharing workbooks on Tableau Server or Tableau Online.
- Web Browser: Tableau Server and Tableau Online require modern web browsers such as Google Chrome, Microsoft Edge, Mozilla Firefox, or Safari.

It's important to note that the system requirements can vary depending on the size and complexity of the datasets being analyzed and the type of visualizations being created. Larger datasets and more complex calculations may require higher memory and processing capabilities.

For optimal performance, it is recommended to have a machine that exceeds the minimum requirements, especially when working with large datasets or conducting complex analyses in Tableau.

Before installing Tableau, it's advisable to check the official Tableau website for the most up-to-date system requirements, as they may change with new software releases and updates.

3.3 database source about healthcare analytics and dashboard:

Healthcare analytics and dashboard solutions typically rely on a variety of data sources to provide comprehensive insights into patient care, hospital performance, public health indicators, and more. Here are some common database sources used in healthcare analytics and dashboard implementations:

1. **Electronic Health Records (EHRs):** EHRs are digital versions of patients' paper charts and contain a wealth of information, including medical histories, diagnoses, treatments, medications, and lab results. Integrating and analyzing data from EHRs is essential for gaining a holistic view of patient health and tracking outcomes over time.

2. **Hospital Information Systems (HIS):** HIS includes various operational and administrative systems used in hospitals, such as patient admission, discharge, and transfer (ADT) systems, billing and revenue cycle management, and resource scheduling. Analyzing HIS data helps optimize hospital operations and resource allocation.

3. **Clinical Data Repositories (CDRs):** CDRs are centralized databases that store clinical data from various sources within a healthcare organization. They often serve as a data warehouse for aggregating and organizing data from multiple systems, making it easier for analytics and reporting.

4. **Laboratory Information Systems (LIS):** LIS manages and stores data from clinical laboratory tests, including blood tests, urine tests, and pathology reports. Integrating LIS data with other clinical data sources allows for more comprehensive diagnostic insights and disease monitoring.

5. **Picture Archiving and Communication Systems (PACS):** PACS store and manage medical images, such as X-rays, MRIs, and CT scans. Integrating PACS data with other clinical data can provide a complete picture of a patient's health status and aid in diagnosis and treatment planning.

Public Health Datasets: Healthcare analytics may also utilize public health datasets, such as those provided by government agencies, to track population health indicators, disease prevalence, and healthcare utilization trends at a broader community or regional level.

Health Insurance Claims Data: Insurance claims data contains information on the healthcare services provided to insured individuals. Analyzing claims data can provide insights into healthcare utilization patterns, cost trends, and reimbursement rates.

Wearable Devices and IoT Data: With the rise of wearable devices and the Internet of Things (IoT) in healthcare, data from these devices can be integrated into analytics platforms to monitor patient health in real-time and support remote patient monitoring.

Research and Clinical Trials Data: Data from research studies and clinical trials are valuable for evaluating the effectiveness of treatments and interventions. Integrating this data into analytics platforms can aid in evidence-based decision-making.

).Social Determinants of Health (SDOH) Data: SDOH data includes factors such as socioeconomic status, education level, and environmental conditions that impact health outcomes. Incorporating SDOH data into healthcare analytics can help address disparities and design targeted interventions.

ffectively utilize these data sources in healthcare analytics and dashboard ions, data integration, cleansing, and transformation processes are often red. Modern data analytics platforms, like Tableau, Power BI, or Qlik, de tools and connectors that facilitate the integration of data from various es to create comprehensive and actionable insights for healthcare ssionals, administrators, and policymakers.

Chapter:4

4.1 result and discussion about healthcare analytics and dashboard:

Results and discussions in healthcare analytics and dashboard projects are essential components that showcase the insights derived from the data and the implications of those findings. Let's explore a hypothetical example to illustrate the potential results and discussions in a healthcare analytics and dashboard project:

Example: Analysis of Hospital Readmission Rates

Results:

1. Readmission Patterns: The healthcare analytics dashboard reveals patterns of readmission rates across different patient populations, medical conditions, and hospital departments. It identifies specific patient groups that have a higher likelihood of readmission within a certain timeframe.
2. Risk Factors: The analysis uncovers key risk factors contributing to readmissions, such as age, comorbidities, and socioeconomic factors. It highlights patients with multiple chronic conditions as high-risk individuals.
3. Impact of Interventions: The dashboard evaluates the effectiveness of interventions implemented to reduce readmission rates. It compares readmission rates before and after the implementation of specific interventions or care protocols.
4. Hospital Performance: The dashboard compares readmission rates among different hospitals within a healthcare system or across multiple

healthcare organizations. It identifies hospitals with lower readmission rates and highlights best practices for reducing readmissions.

5. Seasonal Variations: The analysis explores any seasonal variations in readmission rates, such as higher readmissions during flu seasons or extreme weather conditions.

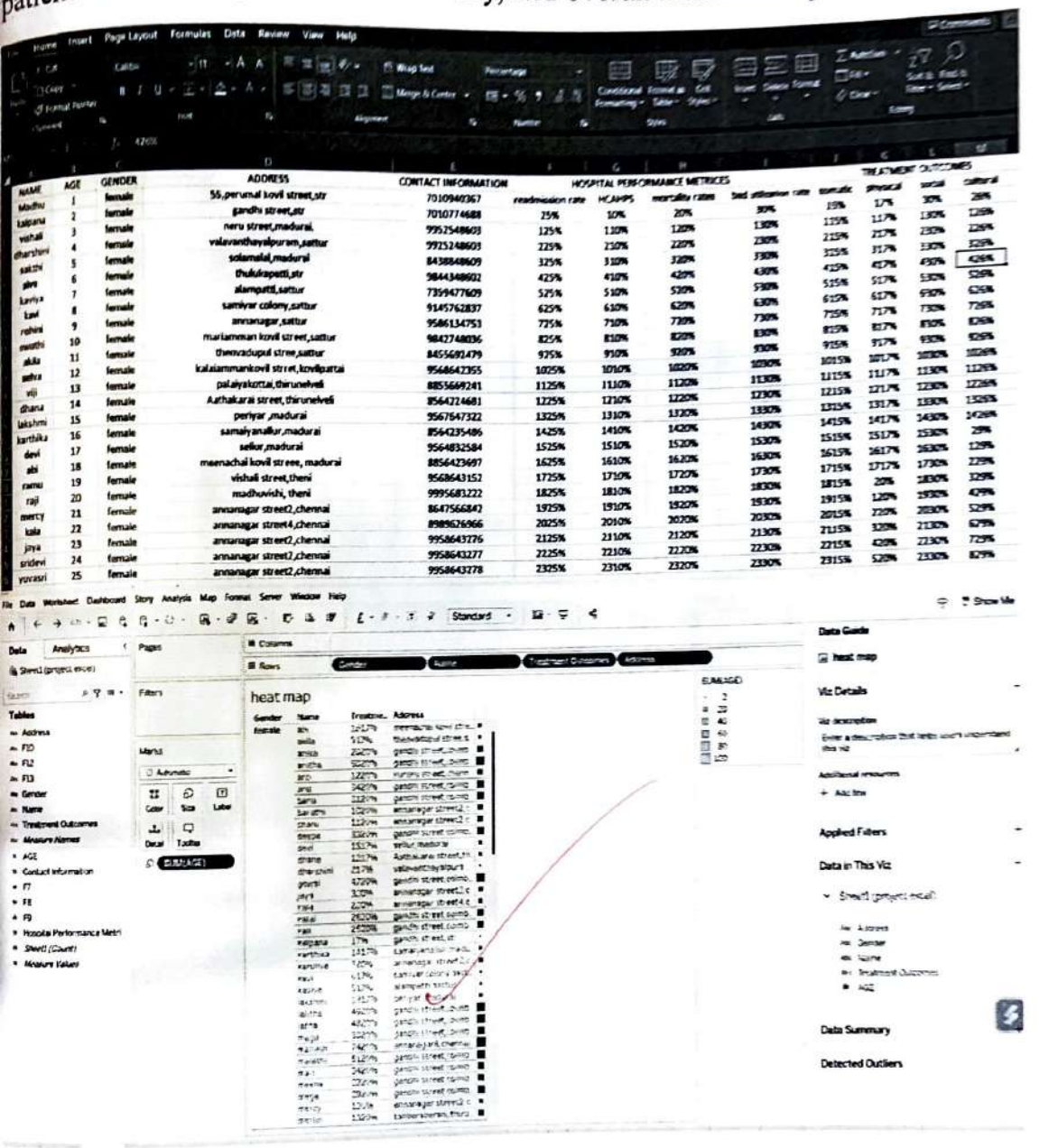
Discussions:

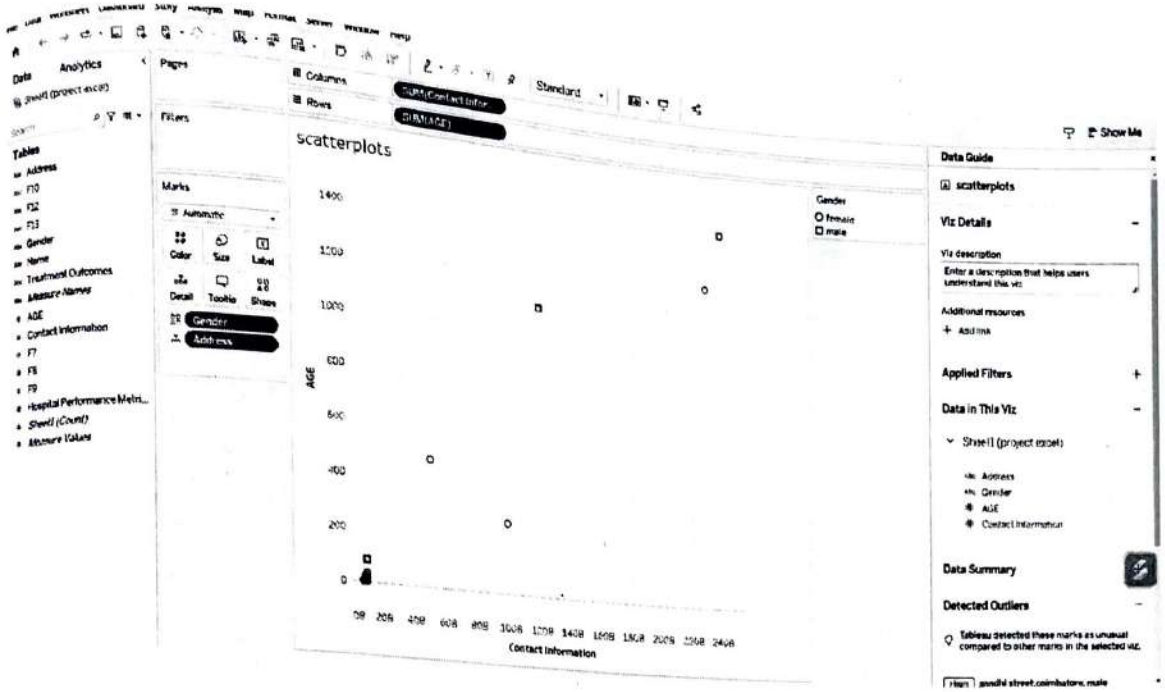
1. Targeted Interventions: Based on the results, healthcare providers can develop targeted interventions to reduce readmissions in high-risk patient groups. These interventions may involve improved care coordination, patient education, and home healthcare services.
2. Resource Allocation: Hospital administrators can use the insights from the dashboard to allocate resources efficiently, focusing on departments and patient populations with higher readmission rates. This may include increasing staff or enhancing discharge planning services.
3. Quality Improvement Initiatives: The dashboard results can inform quality improvement initiatives aimed at addressing specific risk factors and improving patient outcomes. For example, identifying opportunities to improve post-discharge follow-up care for patients with chronic conditions.
4. Collaboration and Benchmarking: Healthcare organizations can collaborate and share best practices to improve readmission rates. Benchmarking against hospitals with lower readmission rates can provide valuable insights for performance improvement.
5. Policy and Public Health Implications: The analysis can inform policymakers and public health officials about readmission trends, influencing policy decisions related to healthcare reimbursements, patient safety, and preventive care strategies.
6. Continuous Monitoring: The healthcare analytics dashboard serves as an ongoing monitoring tool to track the impact of interventions over time. Regular updates and data-driven decisions can lead to sustained improvements in readmission rates.

Conclusion:

The results and discussions from healthcare analytics and dashboard projects are pivotal in shaping healthcare strategies, improving patient care, and optimizing hospital performance. The insights gained from data analysis enable informed

decision-making, empowering healthcare professionals, administrators, and policymakers to address challenges, implement evidence-based interventions, and deliver better healthcare services to patients. By leveraging data-driven insights, healthcare organizations can achieve significant advancements in patient outcomes, operational efficiency, and overall healthcare quality.

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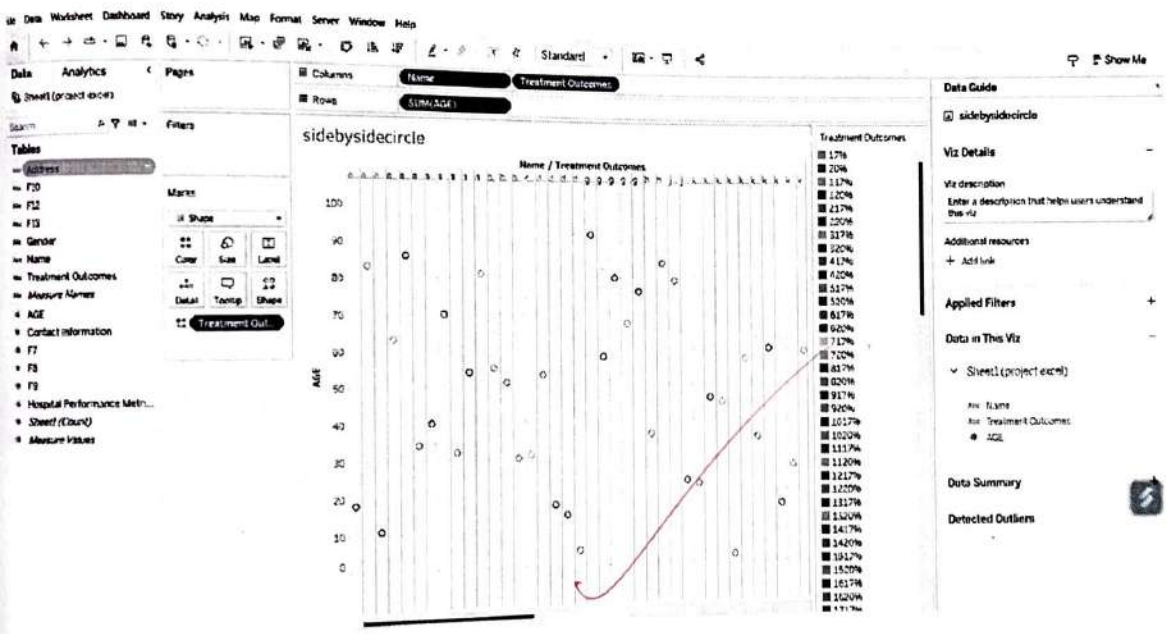
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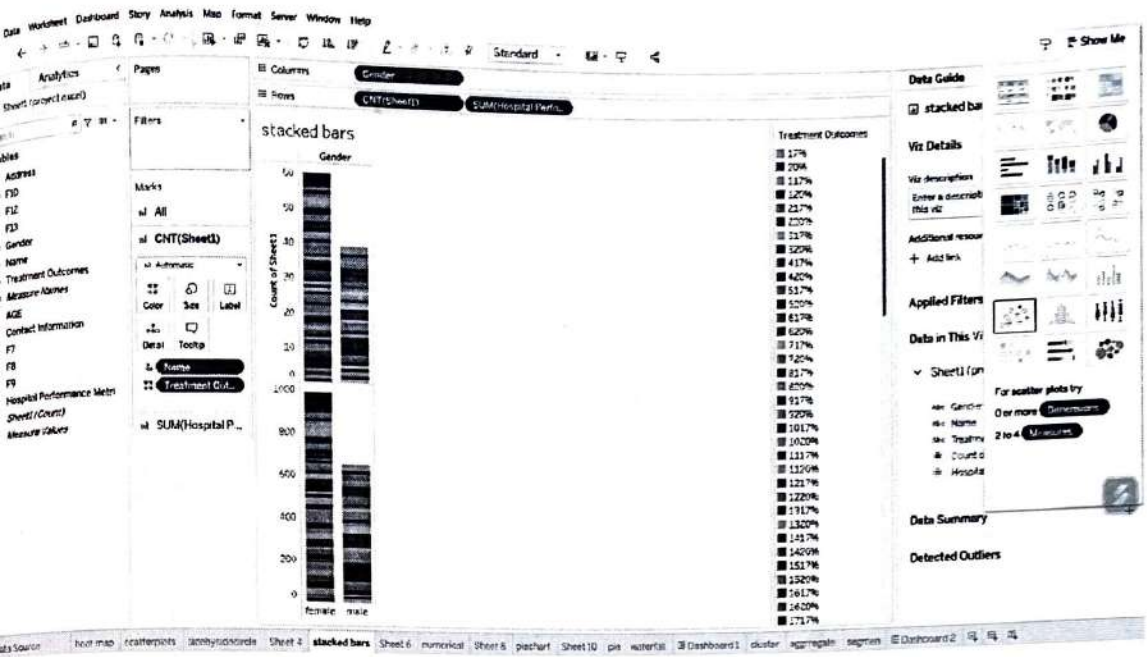
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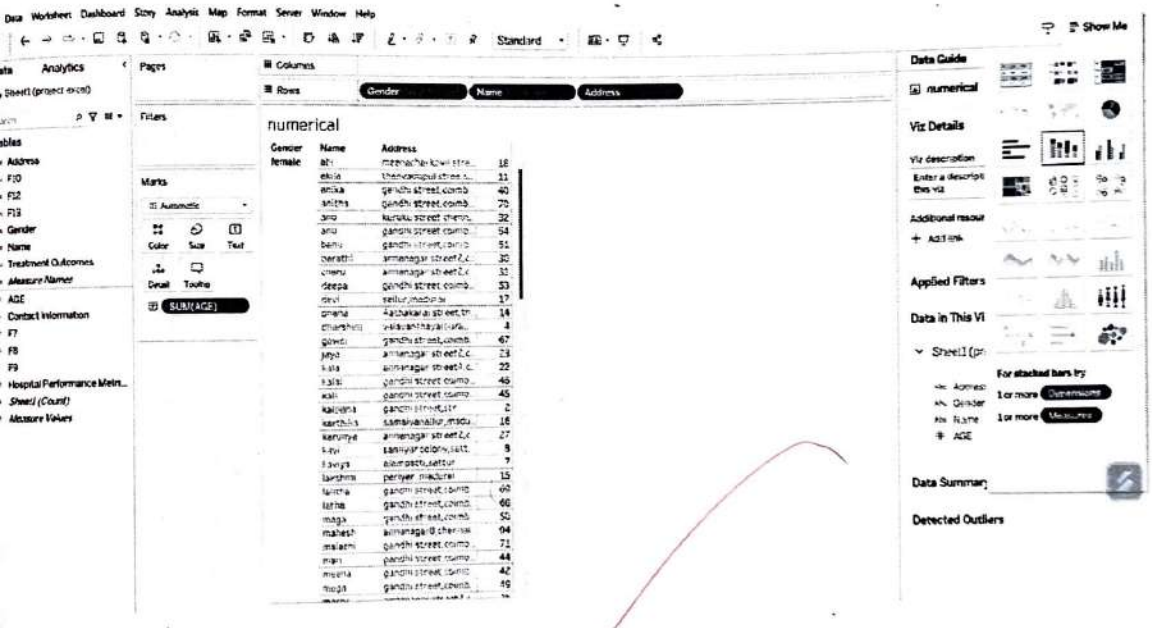
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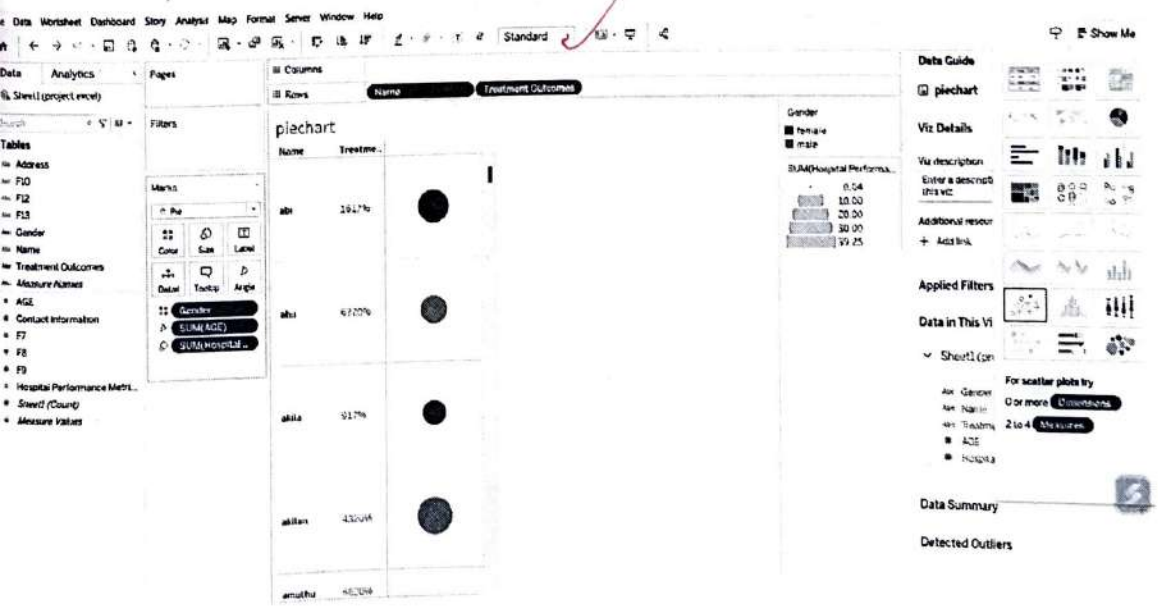
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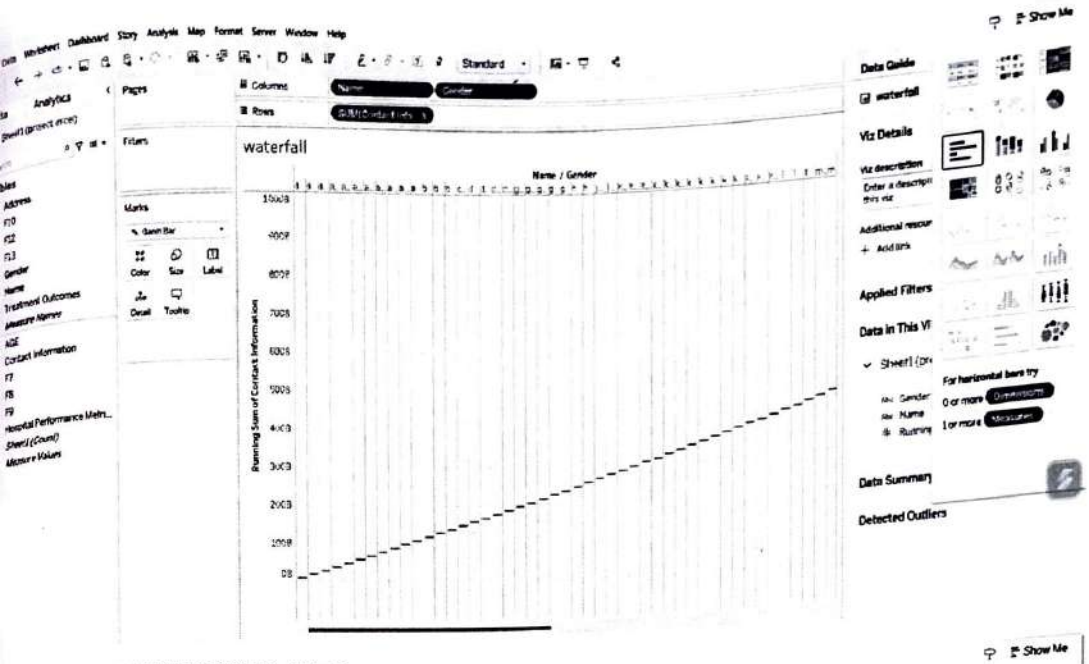
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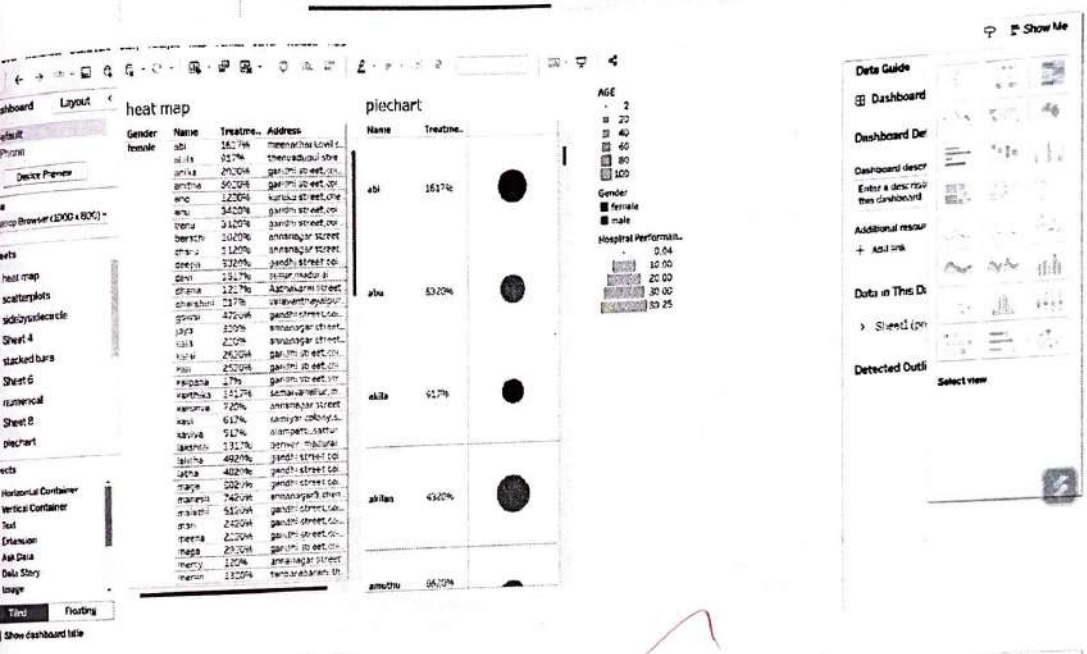
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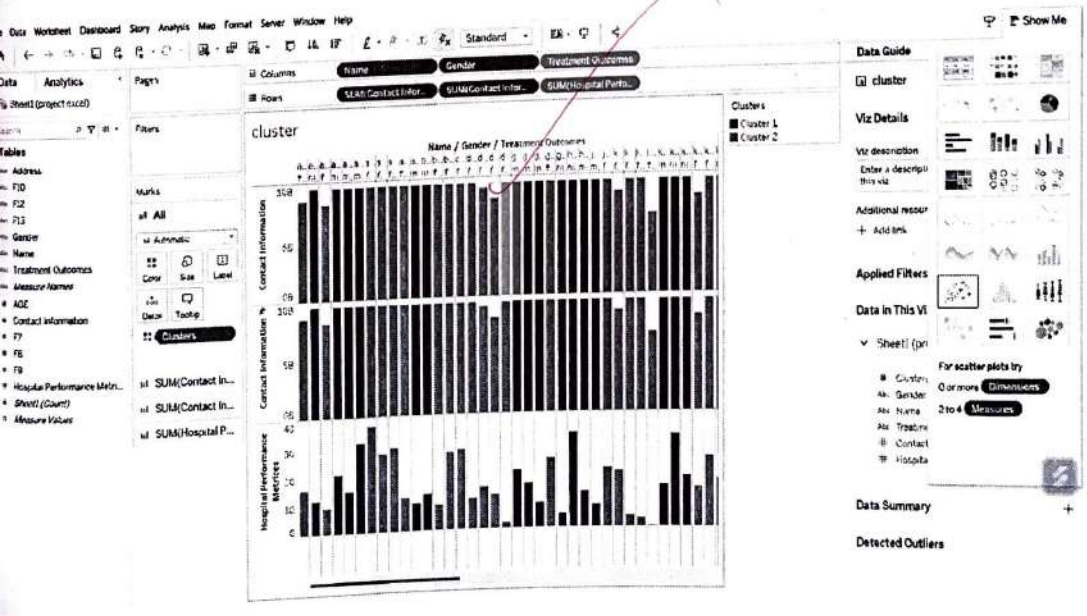
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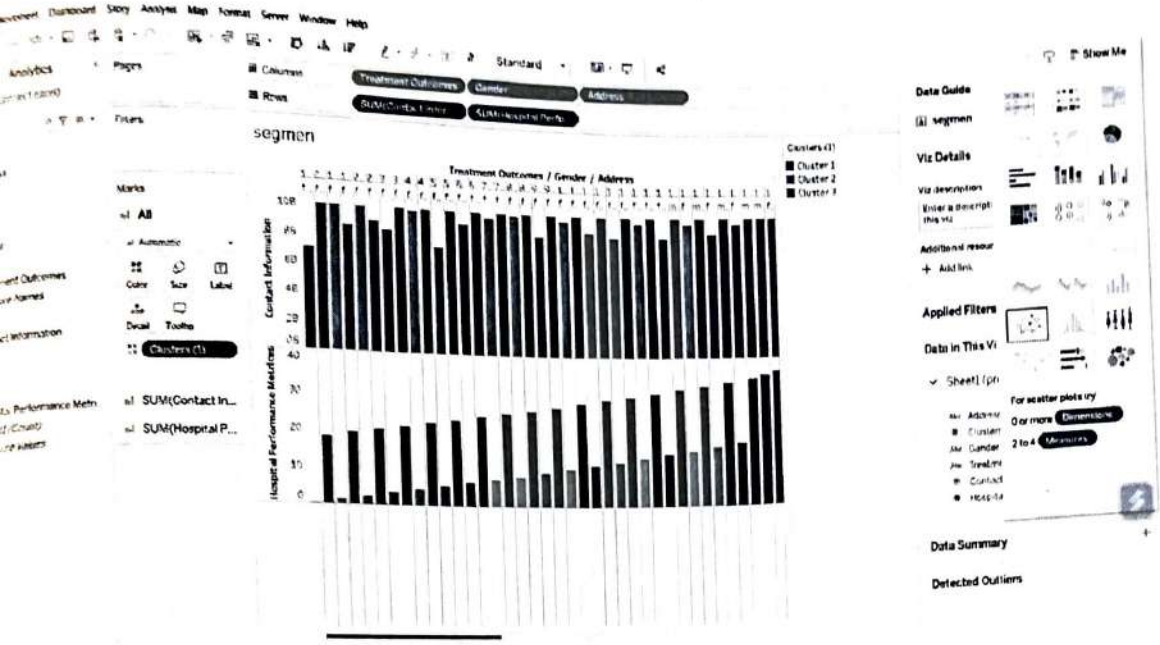
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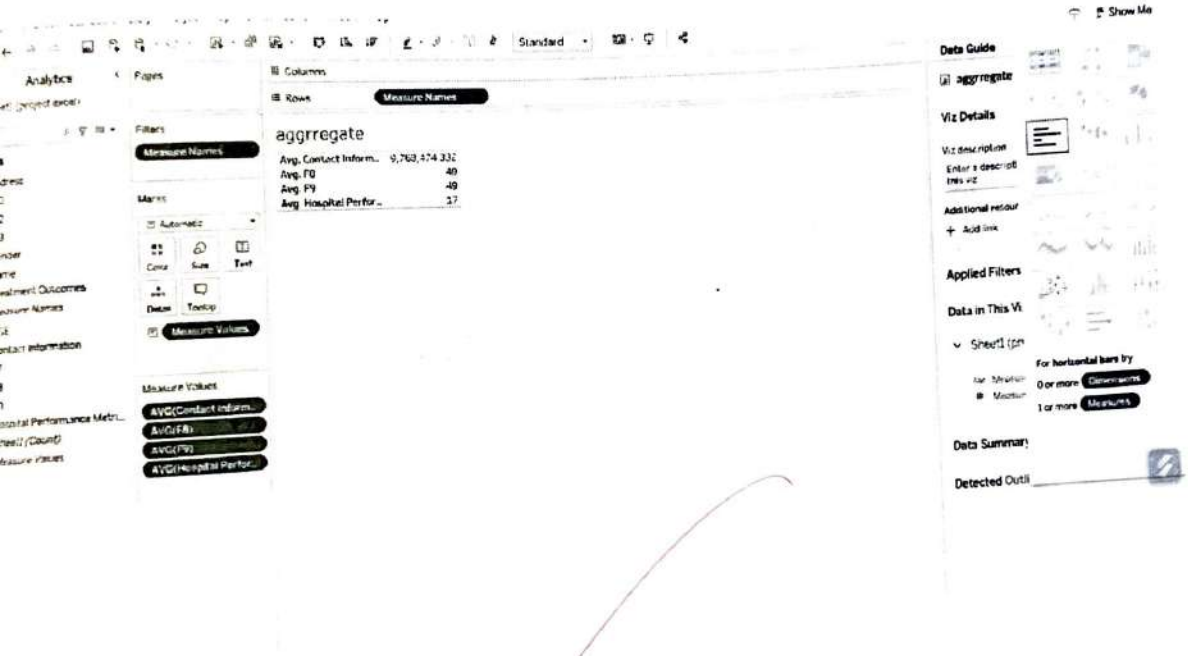
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apter:5

nclusion:

conclusion, healthcare analytics and dashboard solutions hold tremendous ential to revolutionize the healthcare industry by leveraging data-driven ights to enhance patient care, optimize operations, and inform policy isions. Through the integration of diverse healthcare data sources, these tems enable stakeholders to gain comprehensive views of patient health, spital performance, and population health indicators.

althcare analytics and dashboard projects provide several key benefits:

1. **Improved Patient Outcomes:** By analyzing electronic health records, medical procedures, and clinical data, healthcare professionals can identify patterns, predict risks, and personalize treatment plans, leading to improved patient outcomes and more targeted care.
2. **Enhanced Operational Efficiency:** Hospital administrators can utilize analytics dashboards to optimize resource allocation, streamline workflows, and identify areas for process improvement. This helps reduce operational costs and enhances overall healthcare service delivery.
3. **Real-Time Decision-Making:** Real-time data processing and analytics enable healthcare professionals to access up-to-date information, respond swiftly to emergencies, and make informed decisions promptly, thus saving lives and improving patient care quality.
4. **Data-Driven Policy Decisions:** Policymakers can use healthcare analytics to analyze population health trends, track the effectiveness of

public health initiatives, and allocate resources strategically to address community health needs effectively.

5. **Empowerment of Stakeholders:** Healthcare analytics and dashboard solutions empower various stakeholders, including clinicians, administrators, researchers, and policymakers, by providing user-friendly tools to explore and visualize data, democratizing access to valuable insights.

6. **Proactive Healthcare Interventions:** Predictive analytics in healthcare helps identify high-risk patients and potential health hazards before they escalate, allowing for proactive interventions and preventive care strategies.

7. **Interdisciplinary Collaboration:** By integrating data from various departments and sources, healthcare analytics fosters interdisciplinary collaboration among medical professionals, encouraging a more holistic approach to patient care.

8. **Data Security and Compliance:** Modern healthcare analytics systems prioritize data security and privacy, adhering to stringent regulations like HIPAA to protect sensitive patient information.

9. **Continual Improvement:** Healthcare analytics and dashboard projects promote a culture of continuous improvement within the healthcare industry, encouraging evidence-based practices and data-driven decision-making.

summary, healthcare analytics and dashboard solutions play a pivotal role in nsforming healthcare by harnessing the power of data to improve patient re, optimize operations, and drive evidence-based decisions. These tools npower healthcare professionals, administrators, and policymakers to unlock luable insights, ultimately leading to better healthcare outcomes, increased ficiency, and more effective public health interventions. As technology ntinues to advance, the future of healthcare analytics holds immense promise, volutionizing the way healthcare is delivered and improving the lives of tients worldwide.

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Department of Information Technology

13. Mark Statement
and
Assessment Rubrics

Value Added Course

on

Data Science with Tableau

DEPARTMENT OF INFORMATION TECHNOLOGY

VAC-Data Science with Tableau Project Marks

SL. NO.	ROLL NUMBER	NAME	Problem definition and Objective (10)	Data Collection (15)	Visualization (15)	PROJECT MARKS (40)	PROJECT MARKS (100)
1	21UIT003	VIGNESH.V.K	8	7	7	22	54
2	21UIT008	SUBASHINI.K	10	15	10	35	87
3	21UIT009	MATHUMITHA.V	10	15	10	35	87
4	21UIT010	KALAISELVI.K	10	15	10	35	87
5	21UIT011	YAZHINI D S	10	15	10	35	87
6	21UIT013	RAMYAA SHRI K	10	15	11	36	90
7	21UIT016	RAJESH R M	10	15	10	35	87
8	21UIT017	VEERABALAGAN K	8	7	7	22	55
9	21UIT018	CHARANYA.D	10	15	12	37	93
10	21UIT019	KAVIYA.S	10	15	11	36	90
11	21UIT027	MEGHA A M	10	15	11	36	90
12	21UIT029	AKILA.K	10	15	13	38	96
13	21UIT030	GANESH KUMAR.M	10	7	7	24	60
14	21UIT031	DHARUN.S	10	15	10	35	88
15	21UIT032	SUBEGA BANU.S	8	8	8	24	61
16	21UIT033	KABILESH.K	10	15	10	35	87
17	21UIT034	SENTHILKUMAR.T.B	10	15	10	35	88
18	21UIT036	VISALI MANIPIRYA.V	10	15	10	35	87
19	21UIT038	MEENAKSHI.S	8	8	8	24	60
20	21UIT040	VISHNU PRIYA.G	10	15	13	38	94
21	21UIT043	KALPANA CHARULA.S	8	7	7	22	54

22	21UIT045	ABISHEK RAJ.S	8	7	7	22	55
23	21UIT047	EASKKITHAI @SUMATHI.M	10	15	13	38	96
24	21UIT048	BALAJI.G.S	10	15	12	37	93
25	21UIT049	VISHAL.M	8	8	8	24	60
26	21UIT051	BABY.S	10	15	12	37	93
27	21UIT052	KAVIYA.M	10	15	13	38	96
28	21UIT054	KISHORE.M	10	15	10	35	87
29	21UIT057	BALA CHIBI HARIESH	8	8	8	24	60
30	21UIT058	PRAVEEN.L	10	15	12	37	93
31	21UIT059	SAAMIR GAFFUR MOHAMMED YAKUB SHAH	10	15	10	35	88
32	21UIT060	SWATHEESWARI.G	10	15	13	38	94
33	21UIT062	ROOBAN REYEASH S	10	15	10	35	88
34	21UIT065	SARAVANAKUMAR P	10	15	12	37	93

VAC i/c

HOD i/c

DEPARTMENT OF INFORMATION TECHNOLOGY

VAC-Data Science with Tableau Marks

SL. NO.	ROLL NUMBER	NAME	MCQ TEST MARKS (100)	PROJECT MARKS	MCQ MARKS (OUT OF 60)	PROJECT MARKS(OUT OF 40)	TOTAL MARKS (OUT OF 100)
1	21UIT003	VIGNESH.V.K	94	54	56	22	78
2	21UIT008	SUBASHINI.K	94	87	56	35	91
3	21UIT009	MATHUMITHA.V	94	87	56	35	91
4	21UIT010	KALAISELVI.K	94	87	56	35	91
5	21UIT011	YAZHINI D S	94	87	56	35	91
6	21UIT013	RAMYAA SHRI K	100	90	60	36	96
7	21UIT016	RAJESH R M	100	87	60	35	95
8	21UIT017	VEERABALAGAN K	96	55	58	22	80
9	21UIT018	CHARANYA.D	94	93	56	37	94
10	21UIT019	KAVIYA.S	100	90	60	36	96
11	21UIT027	MEGHA A M	100	90	60	36	96
12	21UIT029	AKILA.K	94	96	56	38	95
13	21UIT030	GANESH KUMAR.M	54	60	32	24	56
14	21UIT031	DHARUN.S	94	88	56	35	92
15	21UIT032	SUBEGA BANU.S	96	61	58	24	82
16	21UIT033	KABILESH.K	94	87	56	35	91
17	21UIT034	SENTHILKUMAR.T.B	94	88	56	35	92
18	21UIT036	VISALI MANIPIRYA.V	97	87	58	35	93
19	21UIT038	MEENAKSHI.S	79	60	47	24	71
20	21UIT040	VISHNU PRIYA.G	100	94	60	38	98
21	21UIT043	KALPANA CHARULA.S	97	54	58	22	80
22	21UIT045	ABISHEK RAJ.S	94	55	56	22	78
23	21UIT047	EASKKITHAI @SUMA	94	96	56	38	95
24	21UIT048	BALAJI.G.S	100	93	60	37	97

26	21UIT051	BABY.S	97	96	58	38	97
27	21UIT052	KAVIYA.M	97	96	58	38	97
28	21UIT054	KISHORE.M	59	87	35	35	70
29	21UIT057	BALA CHIBI HARIESH	88	60	53	24	77
30	21UIT058	PRAVEEN.L	92	93	55	37	92
31	21UIT059	SAAMIR GAFFUR MO	94	88	56	35	92
32	21UIT060	SWATHEESWARI.G	94	94	56	38	94
33	21UIT062	ROOBAN REYEASH S	94	88	56	35	92
34	21UIT065	SARAVANAKUMAR P	97	93	58	37	95

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Nagamalai, Madurai – 625 019.

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Marks for Assignment and Project

Sl.No.	Name	Marks Obtained / 100
1	Vignesh V K	54
2	Subashini K	87
3	Mathumitha A	87
4	Kalaiselvi K	87
5	Yazhini D S	87
6	Ramyaa Shri K	90
7	Rajesh R M	87
8	Veera Balagan K	55
9	Charanya D	93
10	Kaviya S	90
11	Megha A M	90
12	Akila K	96
13	Ganesh Kumar M	60

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14	Dharun S	88
15	Subega Banu S	61
16	Kabilesh K	87
17	Senthil Kumar T B	88
18	Visali Manipirya V	87
19	Meenakshi S	60
20	Vishnu Priya G	94
21	Kalpana Charula S	54
22	Abishek Raj S	55
23	Easkkithai @ Sumathi M	96
24	Balaji G S	93
25	Vishal M	60
26	Baby S	93
27	Kaviya M	96
28	Kishore M	87
29	Bala Chibi Hariesh B	60

30	Praveen L	93
31	Saamir Gaffur Mohammed Yakub Shah	88
32	Swatheeshwari G	94
33	Rooban Reyeash S	88
34	Saravanakumar P	93

WHITE PIXEL TECHNOLOGIES MADURAI 625 019

Mr. SAMSON S.
CHIEF EXECUTIVE OFFICER
WHITE PIXEL TECHNOLOGIES
NAGAMALAI, MADURAI - 625 019.

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DEPARTMENT OF INFORMATION TECHNOLOGY

Value Added Course

Data Science with Tableau

[31.07.2023 - 05.08.2023]

Mark Statement

rtment : Information Technology **Regulation : R 2021**

: III **Semester : V**

Sl. No.	Roll Number	Name	Internal Marks	External Marks	Total [100]
			Project Report [40]	MCQs [60]	
1	21uit003	Vignesh.V.K	22	56	78
2	21uit008	Subashini.K	35	56	91
3	21uit009	Mathumitha.V	35	56	91
4	21uit010	Kalaiselvi.K	35	56	91
5	21uit011	Yazhini D S	35	56	91
6	21uit013	Ramyaa Shri K	36	60	96
7	21uit016	Rajesh R M	35	60	95
8	21uit017	Veerabalagan K	22	58	80
9	21uit018	Charanya.D	37	56	94
10	21uit019	Kaviya.S	36	60	96
11	21uit027	Megha A M	36	60	96
12	21uit029	Akila.K	38	56	95
13	21uit030	Ganesh Kumar.M	24	32	56
14	21uit031	Dharun.S	35	56	92
15	21uit032	Subega Banu.S	24	58	82

Sl. No.	Roll Number	Name	Internal Marks	External Marks	Total [100]
			Project Report [40]	MCQs [60]	
16	21uit033	Kabilesh.K	35	56	91
17	21uit034	Senthilkumar.T.B	35	56	92
18	21uit036	Visali Manipirya.V	35	58	93
19	21uit038	Meenakshi.S	24	47	71
20	21uit040	Vishnu Priya.G	38	60	98
21	21uit043	Kalpana Charula.S	22	58	80
22	21uit045	Abishek Raj.S	22	56	78
23	21uit047	Easkkithai @Sumathi.M	38	56	95
24	21uit048	Balaji.G.S	37	60	97
25	21uit049	Vishal.M	24	32	56
26	21uit051	Baby.S	37	58	95
27	21uit052	Kaviya.M	38	58	97
28	21uit054	Kishore.M	35	35	70
29	21uit057	Bala Chibi Hariesh	24	53	77
30	21uit058	Praveen.L	37	55	92
31	21uit059	Saamir Gaffur Mohammed Yakub Shah	35	56	92
32	21uit060	Swatheeswari.G	38	56	94
33	21uit062	Rooban Reyeash S	35	56	92
34	21uit065	Saravanakumar P	37	58	95

VAC Coordinator

Dr. R. Aghila

HoD / IT

Dean (Academic Courses)

24/4/24

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14. Grade Sheet

Value Added Course

on

Data Science with Tableau

Not Included

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Department of Information Technology

15. Feedback Form

Value Added Course

on

Data Science with Tableau

Day 1 Feedback - VAC on "Data Science with TABLEAU"

Resource Person:
Mr. Samson
Mr.M.Satheesh Kumar
Ms.Rohini

Date: 31.07.2023

* Required

* This form will record your name, please fill your name.

1. The objective of the day 2 value added course was met. *

- ◯ Strongly Agree
- ◯ Agree
- ◯ Neutral
- ◯ Disagree
- ◯ Strongly disagree

2. The program sequence was well planned. *

- ◯ Strongly Agree
- ◯ Agree
- ◯ Neutral
- ◯ Disagree
- ◯ Strongly disagree

3. The lectures were clear and easy to understand. *

- ◯ Strongly Agree
- ◯ Agree
- ◯ Neutral
- ◯ Disagree
- ◯ Strongly disagree

4. The instructors encouraged the interaction. *

- ◯ Strongly Agree
- ◯ Agree
- ◯ Neutral
- ◯ Disagree
- ◯ Strongly disagree

5. The information presented in this VAC was highly beneficial. *

- ◯ Strongly Agree
- ◯ Agree
- ◯ Neutral
- ◯ Disagree
- ◯ Strongly disagree

6. Well organized VAC course. *

- ◯ Strongly Agree
- ◯ Agree
- ◯ Neutral
- ◯ Disagree
- ◯ Strongly disagree

7. Overall Rating *

☆ ☆ ☆ ☆ ☆

8. Any comments? *

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COLLEGE OF ENGINEERING & TECHNOLOGY

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S.P.G.C. Nagar, K.Vellakulam – 625 701 (Near VIRUDHUNAGAR).

Department of Information Technology

16. Feedback Analysis & Report

Value Added Course

on

Data Science with Tableau

Day 1 Feedback - VAC on "Data Science with TABLEAU"

33	02:32	Active
Responses	Average time to complete	Status

1. The objective of the day 2 value added course was met.

Strongly Agree	16
Agree	15
Neutral	2
Disagree	0
Strongly disagree	0

2. The program sequence was well planned.

Strongly Agree	15
Agree	14
Neutral	4
Disagree	0
Strongly disagree	0

3. The lectures were clear and easy to understand.

Strongly Agree	18
Agree	13
Neutral	2
Disagree	0
Strongly disagree	0

4. The instructors encouraged the interaction.

Strongly Agree	15
Agree	17
Neutral	1
Disagree	0
Strongly disagree	0

5. The information presented in this VAC was highly beneficial.

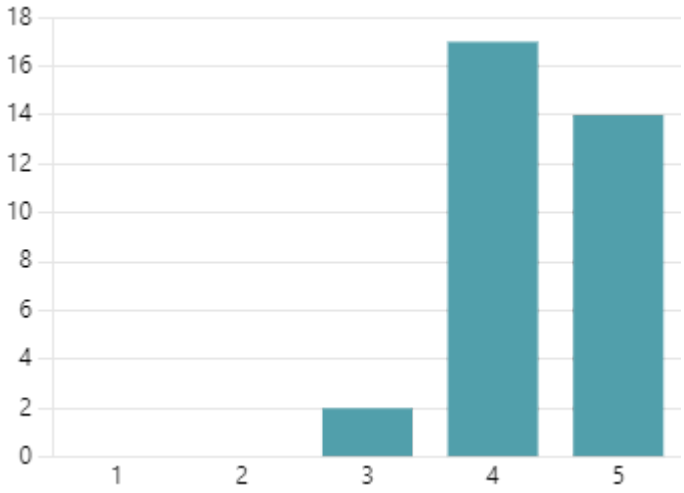
Strongly Agree	18
Agree	13
Neutral	2
Disagree	0
Strongly disagree	0

6. Well organized VAC course.

Strongly Agree	15
Agree	14
Neutral	4
Disagree	0
Strongly disagree	0

7. Overall Rating

4.36
Average Rating



8. Any comments?

32
Responses

Latest Responses

"*learn more information about data science*"

"."

"*Good Introduction to Data Science*"

Update

12 respondents (**36**%) answered **Good** for this question.

Day 2 Feedback - VAC on "Data Science with Tableau"

33	00:43	Active
Responses	Average time to complete	Status

1. The objective of the day 2 value added course was met.

Strongly Agree	11
Agree	19
Neutral	3
Disagree	0
Strongly disagree	0

2. The program sequence was well planned.

Strongly Agree	11
Agree	19
Neutral	3
Disagree	0
Strongly disagree	0

3. The lectures were clear and easy to understand.

Strongly Agree	10
Agree	18
Neutral	5
Disagree	0
Strongly disagree	0

4. The instructors encouraged the interaction.

Strongly Agree	13
Agree	17
Neutral	3
Disagree	0
Strongly disagree	0

5. The information presented in this VAC was highly beneficial.

Strongly Agree	11
Agree	19
Neutral	3
Disagree	0
Strongly disagree	0

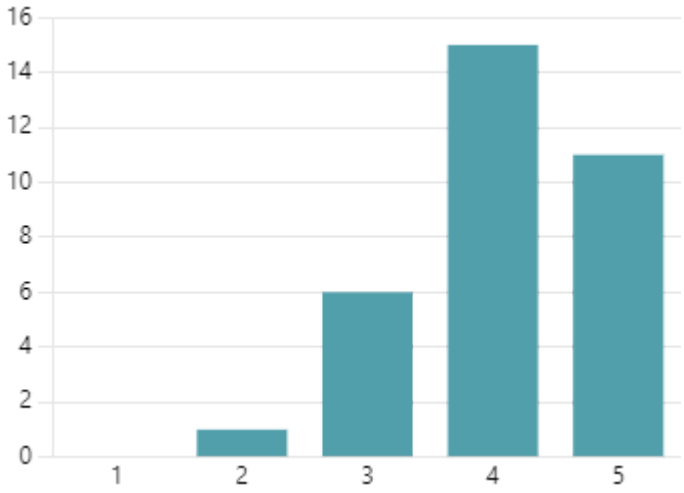
6. Well organized VAC course.

Strongly Agree	12
Agree	17
Neutral	4
Disagree	0
Strongly disagree	0

7. Overall Rating

4.09

Average Rating



8. Any comments?

32
Responses

Latest Responses

"*good*"

"*good*"

"-"

Update

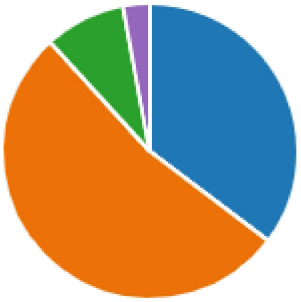
13 respondents (**39**%) answered **GOOD** for this question.

Day 3 Feedback - VAC on "Data Science with Tableau"

34	01:02	Active
Responses	Average time to complete	Status

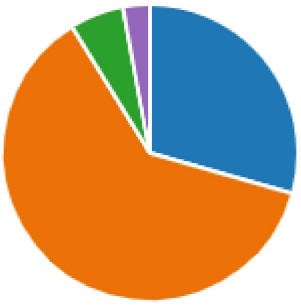
1. The objective of the day 3 value added course was met.

Strongly Agree	12
Agree	18
Neutral	3
Disagree	0
Strongly disagree	1



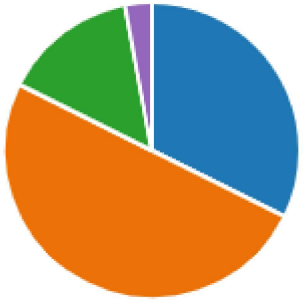
2. The program sequence was well planned.

Strongly Agree	10
Agree	21
Neutral	2
Disagree	0
Strongly disagree	1



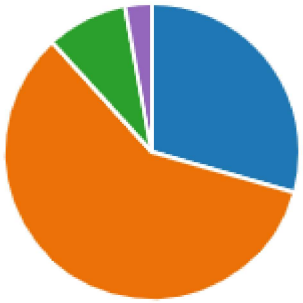
3. The lectures were clear and easy to understand.

Strongly Agree	11
Agree	17
Neutral	5
Disagree	0
Strongly disagree	1



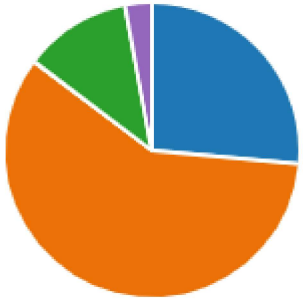
4. The instructors encouraged the interaction.

Strongly Agree	10
Agree	20
Neutral	3
Disagree	0
Strongly disagree	1



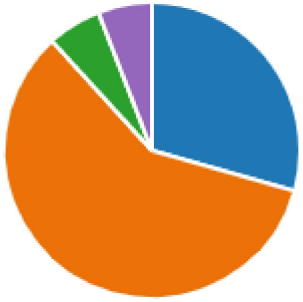
5. The information presented in this VAC was highly beneficial.

Strongly Agree	9
Agree	20
Neutral	4
Disagree	0
Strongly disagree	1



6. Well organized VAC course.

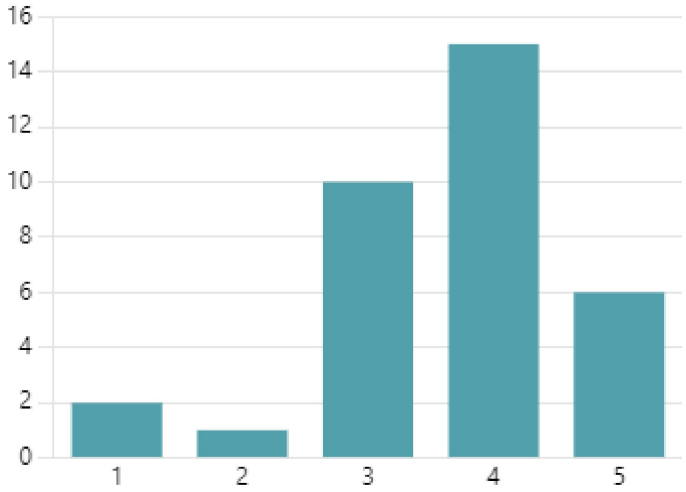
Strongly Agree	10
Agree	20
Neutral	2
Disagree	0
Strongly disagree	2



7. Overall Rating

3.65

Average Rating



8. Any comments?

31
Responses

Latest Responses
"🤢"
"*good*"
"*Good*"

↻ Update

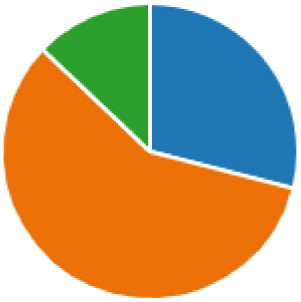
14 respondents (**41**%) answered **Good** for this question.

Day 4 Feedback - VAC on "Data Science with Tableau"

31	00:43	Active
Responses	Average time to complete	Status

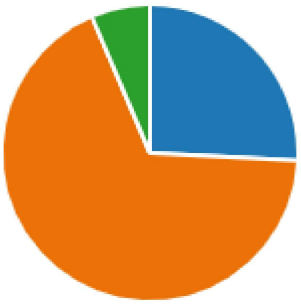
1. The objective of the day 4 value added course was met.

Strongly Agree	9
Agree	18
Neutral	4
Disagree	0
Strongly disagree	0



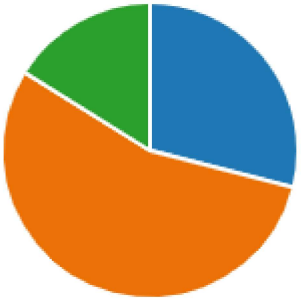
2. The program sequence was well planned.

Strongly Agree	8
Agree	21
Neutral	2
Disagree	0
Strongly disagree	0



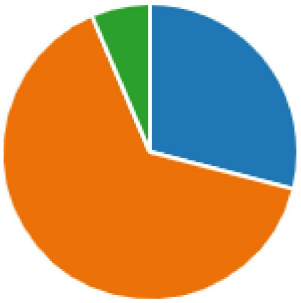
3. The lectures were clear and easy to understand.

Strongly Agree	9
Agree	17
Neutral	5
Disagree	0
Strongly disagree	0



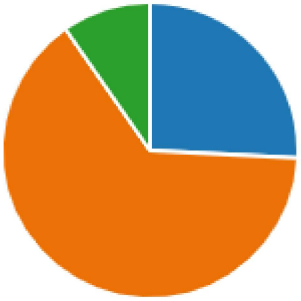
4. The instructors encouraged the interaction.

Strongly Agree	9
Agree	20
Neutral	2
Disagree	0
Strongly disagree	0



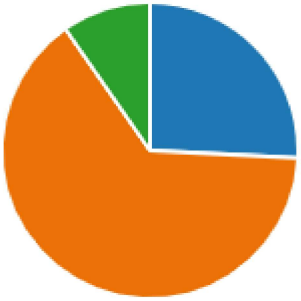
5. The information presented in this VAC was highly beneficial.

Strongly Agree	8
Agree	20
Neutral	3
Disagree	0
Strongly disagree	0



6. Well organized VAC course.

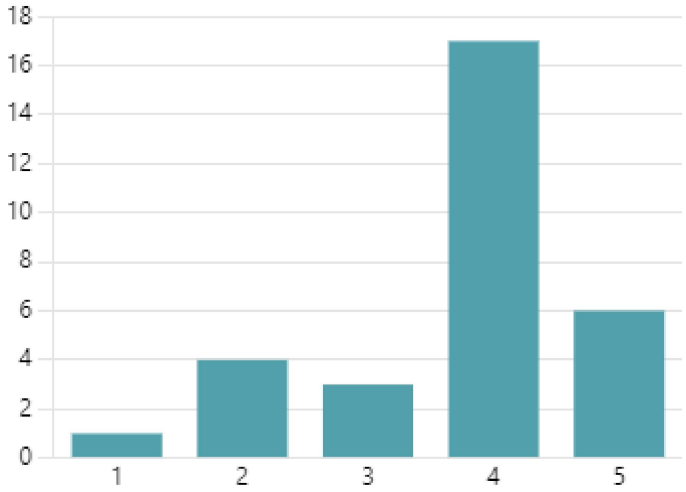
Strongly Agree	8
Agree	20
Neutral	3
Disagree	0
Strongly disagree	0



7. Overall Rating

3.74

Average Rating



8. Any comments?

30
Responses

Latest Responses

"*good*"

"."

"*EXCELLENT*"

↻ Update

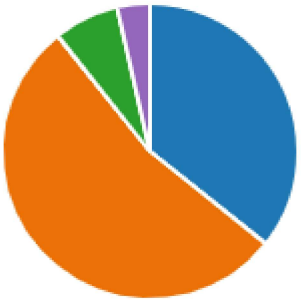
10 respondents (**32**%) answered **Good** for this question.

Day 5 Feedback - VAC on "Data Science with Tableau"

28	03:31	Active
Responses	Average time to complete	Status

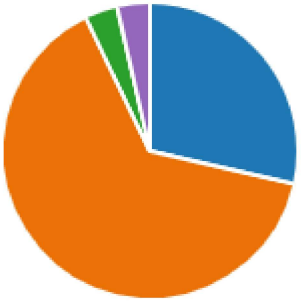
1. The objective of the day 5 value added course was met.

Strongly Agree	10
Agree	15
Neutral	2
Disagree	0
Strongly disagree	1



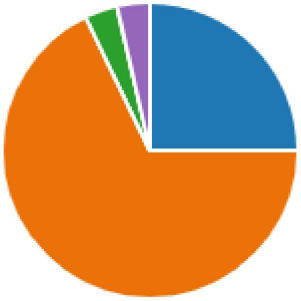
2. The program sequence was well planned.

Strongly Agree	8
Agree	18
Neutral	1
Disagree	0
Strongly disagree	1



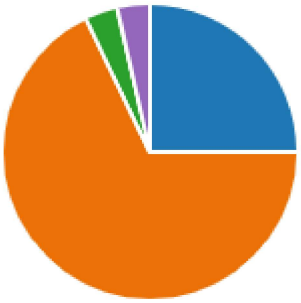
3. The lectures were clear and easy to understand.

Strongly Agree	7
Agree	19
Neutral	1
Disagree	0
Strongly disagree	1



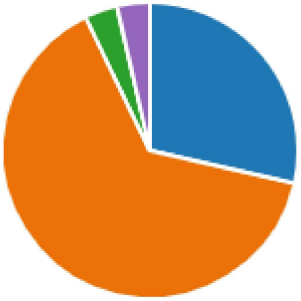
4. The instructors encouraged the interaction.

Strongly Agree	7
Agree	19
Neutral	1
Disagree	0
Strongly disagree	1



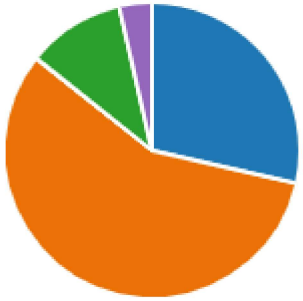
5. The information presented in this VAC was highly beneficial.

Strongly Agree	8
Agree	18
Neutral	1
Disagree	0
Strongly disagree	1



6. Well organized VAC course.

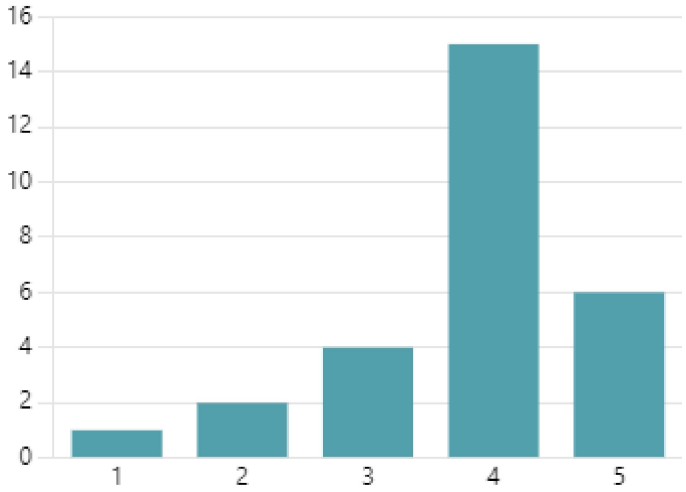
Strongly Agree	8
Agree	16
Neutral	3
Disagree	0
Strongly disagree	1



7. Overall Rating

3.82

Average Rating



8. Any comments?

26
Responses

Latest Responses
"*Class go intrested* "
"."
"*Worst* "

↻ Update

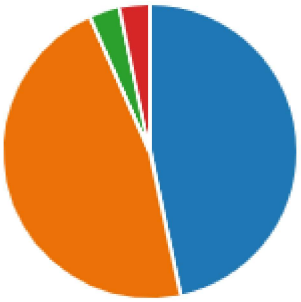
13 respondents (**46**%) answered **good** for this question.

Day 6 Feedback - VAC on "Data Science with Tableau"

30	00:44	Active
Responses	Average time to complete	Status

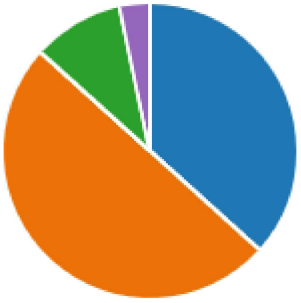
1. The objective of the day 6 value added course was met.

Strongly Agree	14
Agree	14
Neutral	1
Disagree	1
Strongly disagree	0



2. The program sequence was well planned.

Strongly Agree	11
Agree	15
Neutral	3
Disagree	0
Strongly disagree	1



3. The lectures were clear and easy to understand.

Strongly Agree	13
Agree	14
Neutral	2
Disagree	0
Strongly disagree	1

4. The instructors encouraged the interaction.

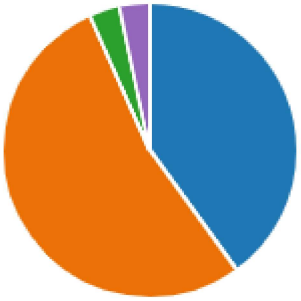
Strongly Agree	13
Agree	14
Neutral	2
Disagree	0
Strongly disagree	1

5. The information presented in this VAC was highly beneficial.

Strongly Agree	13
Agree	14
Neutral	2
Disagree	1
Strongly disagree	0

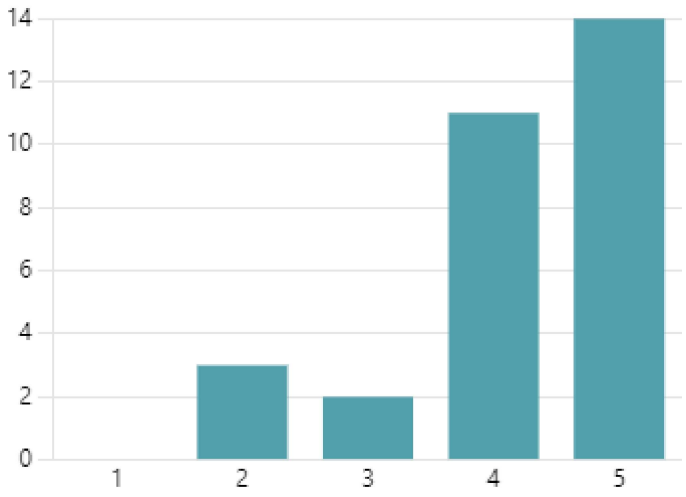
6. Well organized VAC course.

Strongly Agree	12
Agree	16
Neutral	1
Disagree	0
Strongly disagree	1



7. Overall Rating

4.20
Average Rating



8. Any comments?

29
Responses

Latest Responses

"*Good*"

"…. "

"*Good*"

↻ Update

8 respondents (**27**%) answered **good** for this question.

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Department of Information Technology

17. Programme Summary / Report

Value Added Course

on

Data Science with Tableau

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DEPARTMENT OF INFORMATION TECHNOLOGY

VALUE ADDED COURSE

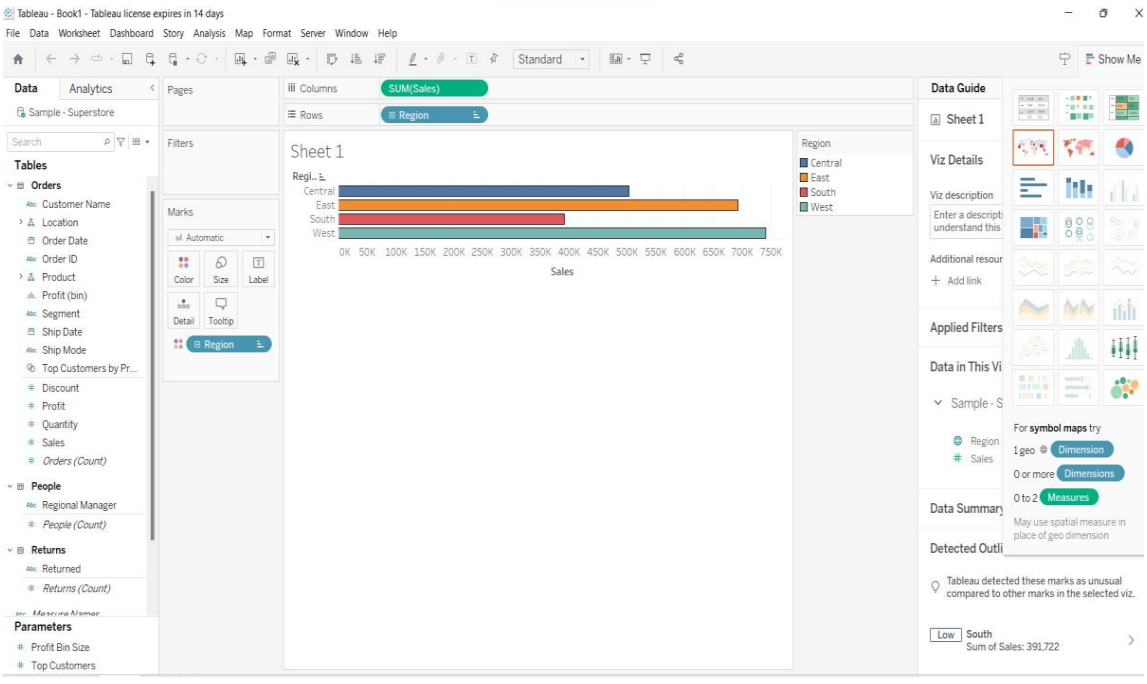
"DATA SCIENCE WITH TABLEAU"

31.07.2023 to 05.08.2023

DAY- 1
REPORT

- Introduction to Data Science and Tableau.
- Definition for Data Science.
- Applications of Data Science in various fields such us Business and Marketing, Healthcare and Medicine, Finance and Banking, Retail and E-Commerce, Manufacturing and Industry, Transportation and Logistics, Social media and Entertainment, Education and Learning etc.
- Role of Data Scientist.
- Work Flow of Data Science.
- Various Websites to Download data easily.
- Definition for Tableau.
- Capabilities of Tableau Software.
- Installation of Tableau.

- **Task 1 : Data Analyzing in Tableau Desktop**



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DEPARTMENT OF INFORMATION TECHNOLOGY

VALUE ADDED COURSE

"DATA SCIENCE WITH TABLEAU"

31.07.2023 to 05.08.2023

DAY- 2
REPORT

DATATYPES

In Tableau, there are several data types that you can work with to represent different types of data accurately. Understanding and correctly defining data types is essential for effective data analysis and visualizations.

ISNULL

Returns true if the expression is NULL (does not contain valid data).

Example:

```
ISNULL([Profit])
```

IFNULL

Returns <expr1> if it is not null, otherwise returns <expr2>.

Example:

```
IFNULL([Profit], 0)
```

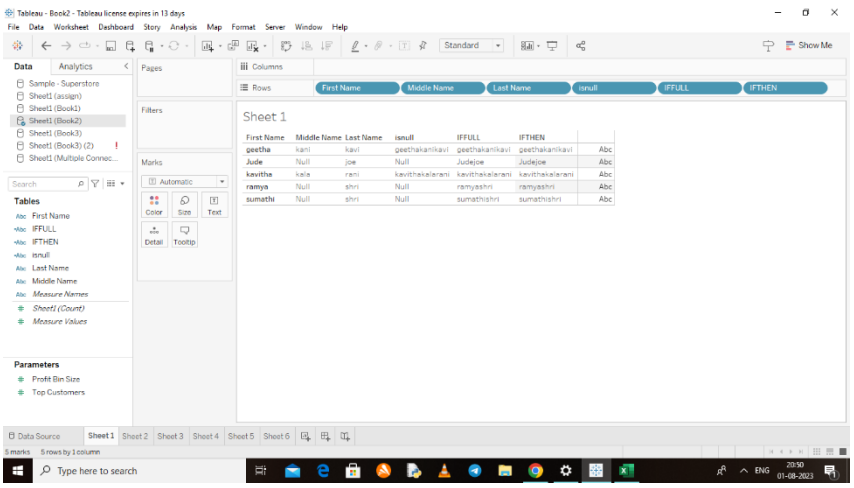
ZN

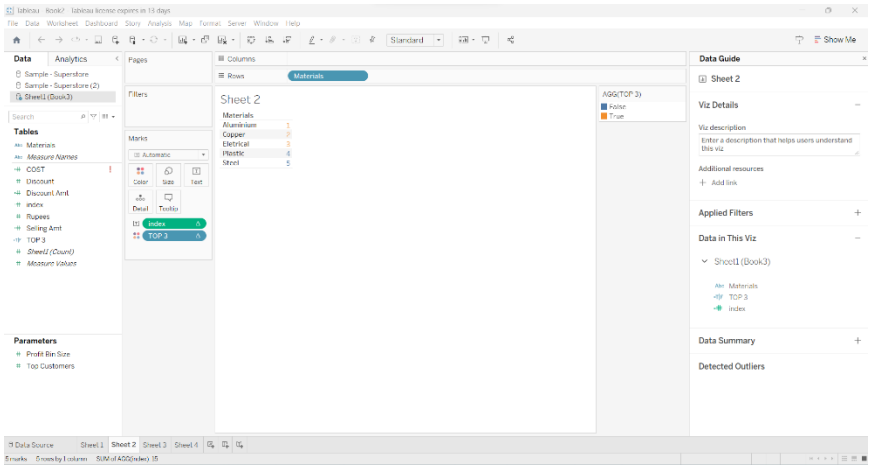
Returns <expression> if it is not null, otherwise returns zero.

Example:

```
ZN([Profit])
```

LOGICAL FUNCTIONS





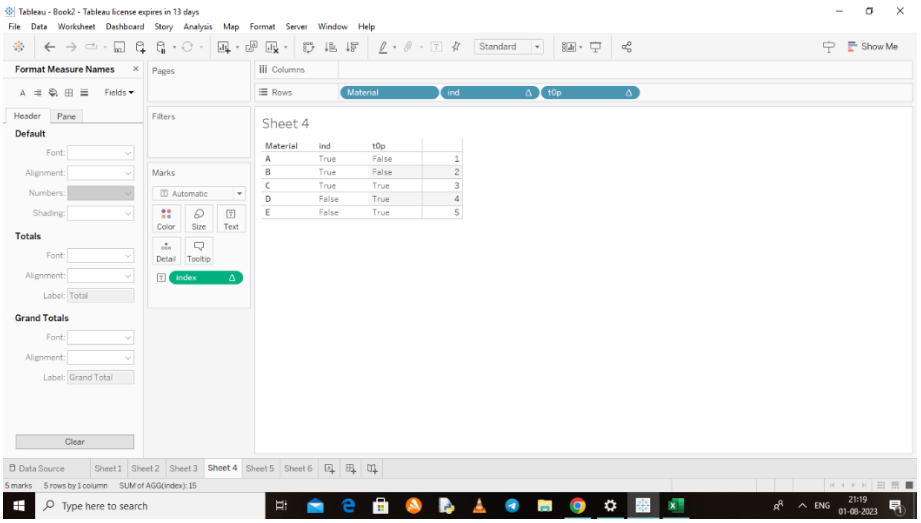


Tableau - Book2 - Tableau license expires in 13 days
Sheet 4
Material ind t0p
A True False 1
B True False 2
C True True 3
D False True 4
E False True 5

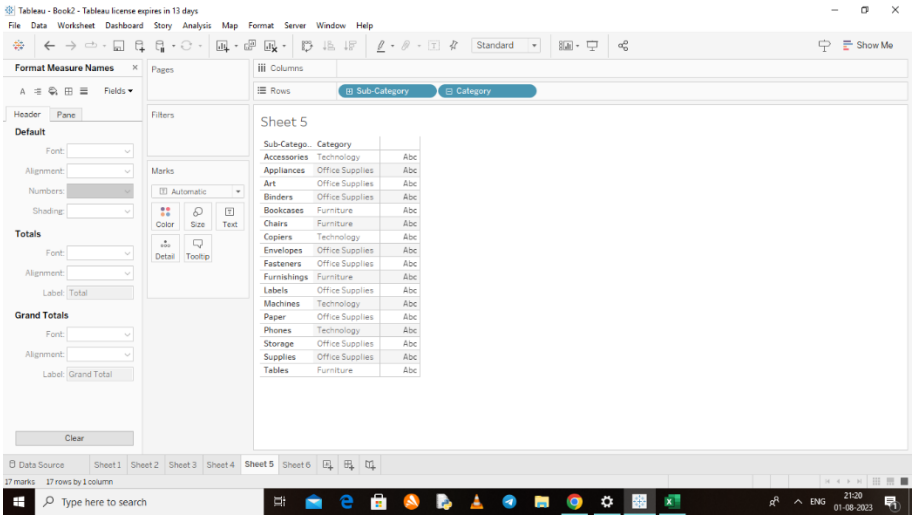


Tableau - Book2 - Tableau license expires in 13 days
Sheet 5

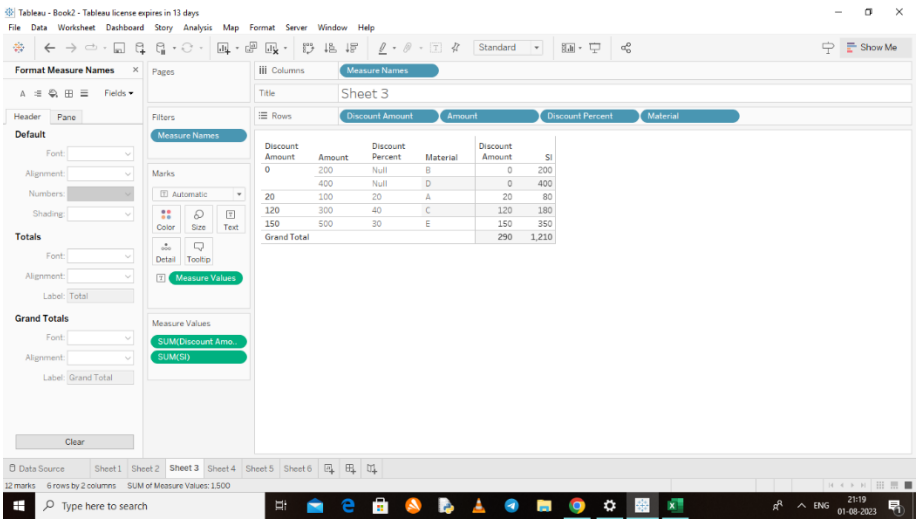


Tableau - Book2 - Tableau license expires in 13 days
Sheet 3
Discount Amount Amount Discount Percent Material Discount Amount SI
0 200 Null B 0 200
400 Null D 0 400
20 100 20 A 20 80
120 300 40 C 120 180
150 500 30 E 150 350
Grand Total 290 1,210

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DEPARTMENT OF INFORMATION TECHNOLOGY

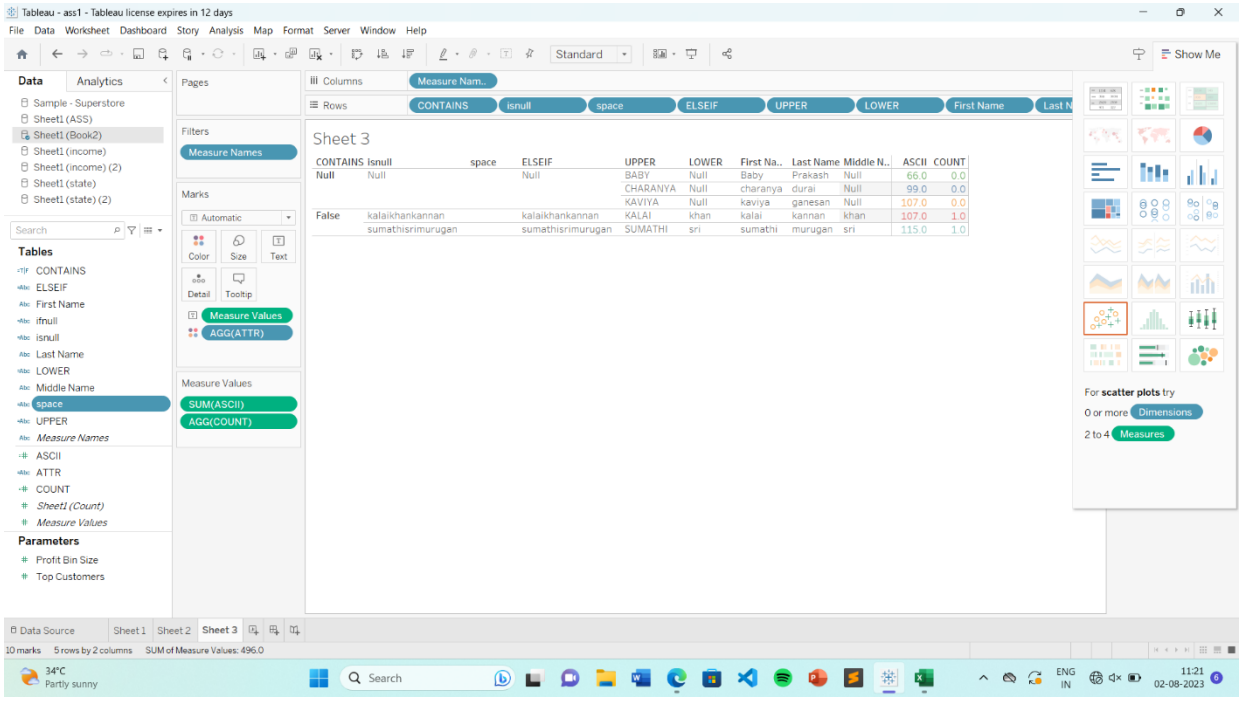
VALUE ADDED COURSE

"DATA SCIENCE WITH TABLEAU"

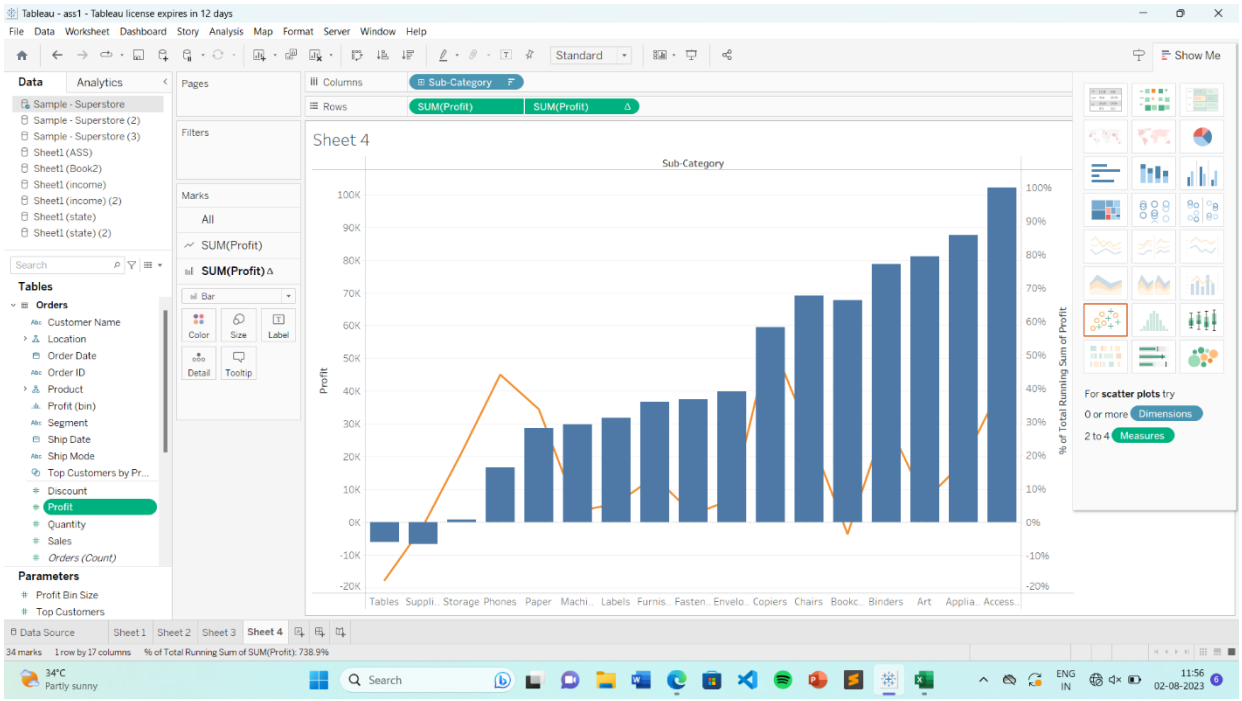
31.07.2023 to 05.08.2023

DAY - 3
REPORT

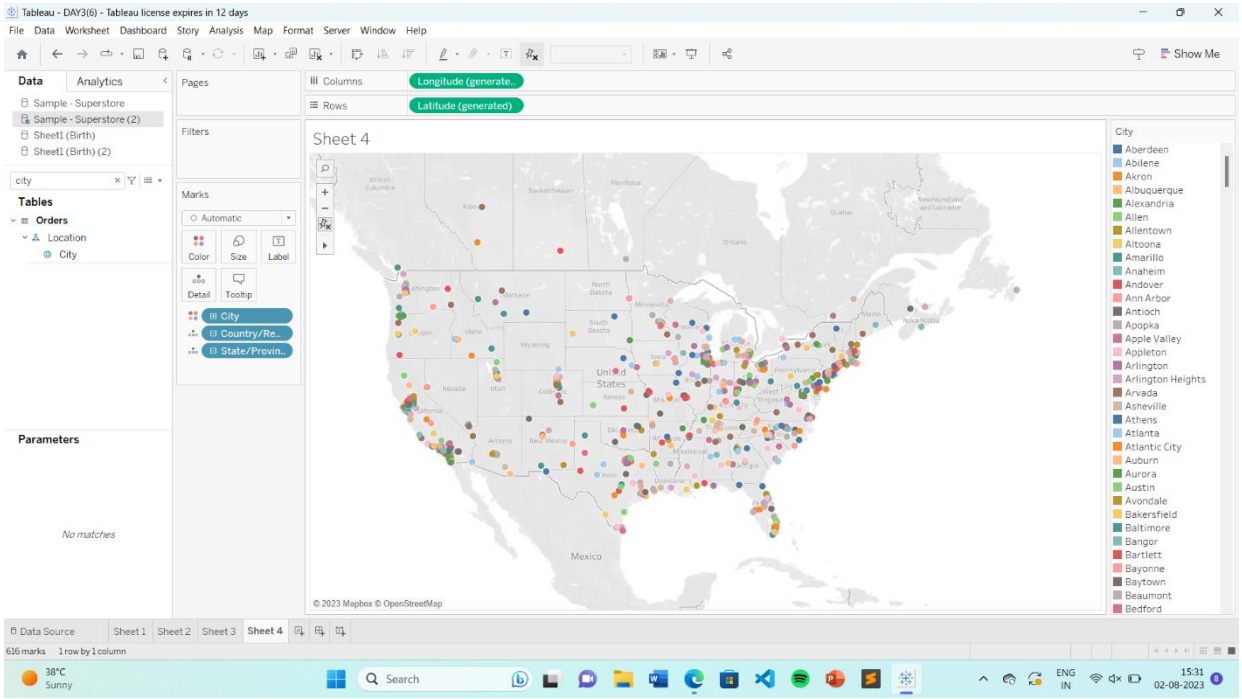
LOGICAL FUNCTIONS



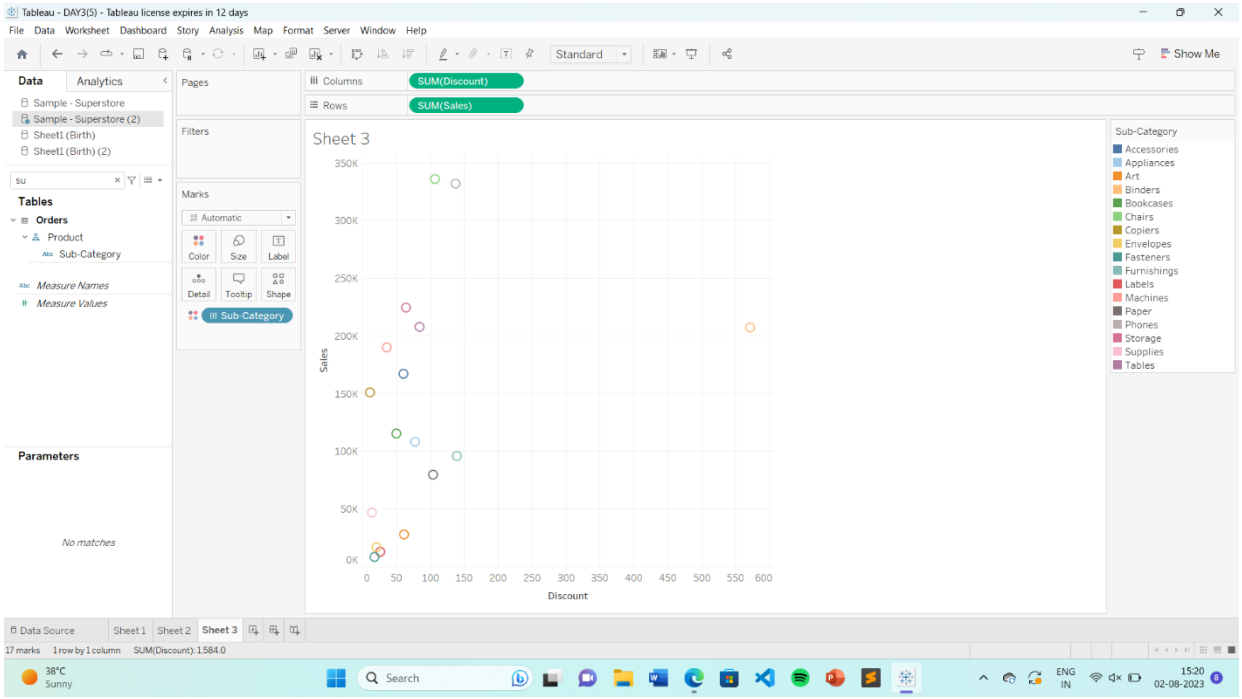
BURETO CHART



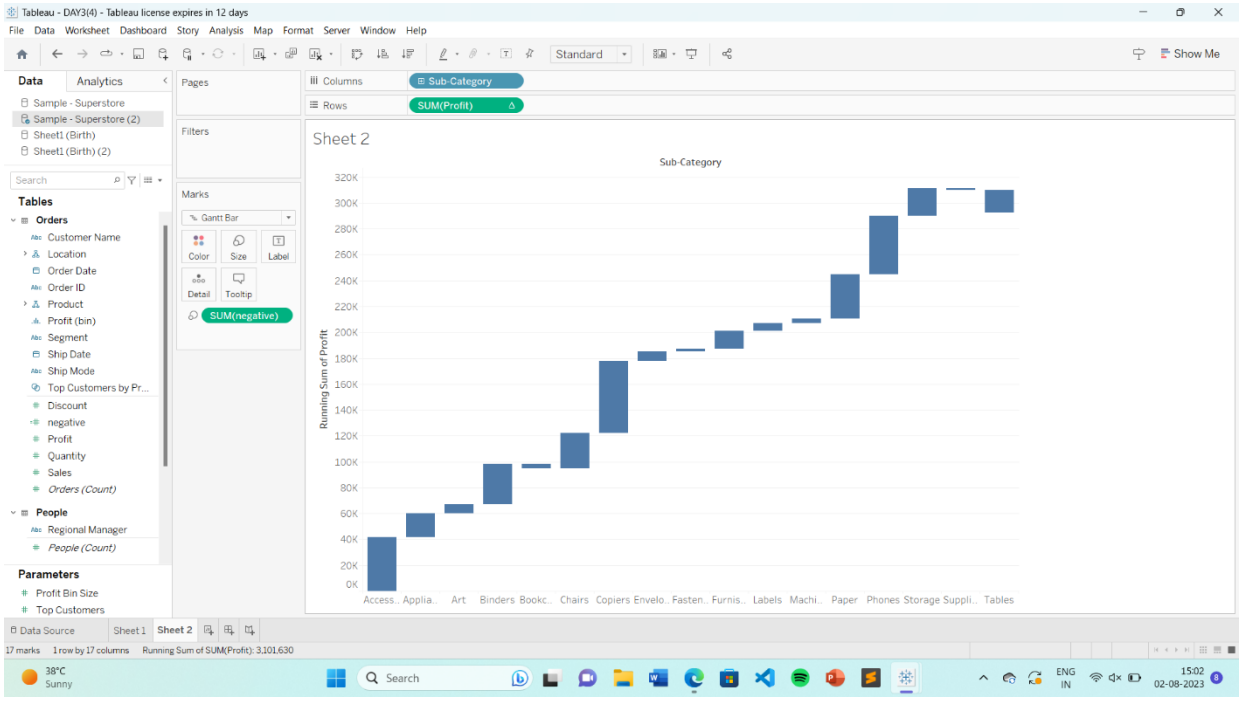
GEOGRAPHICAL MAP



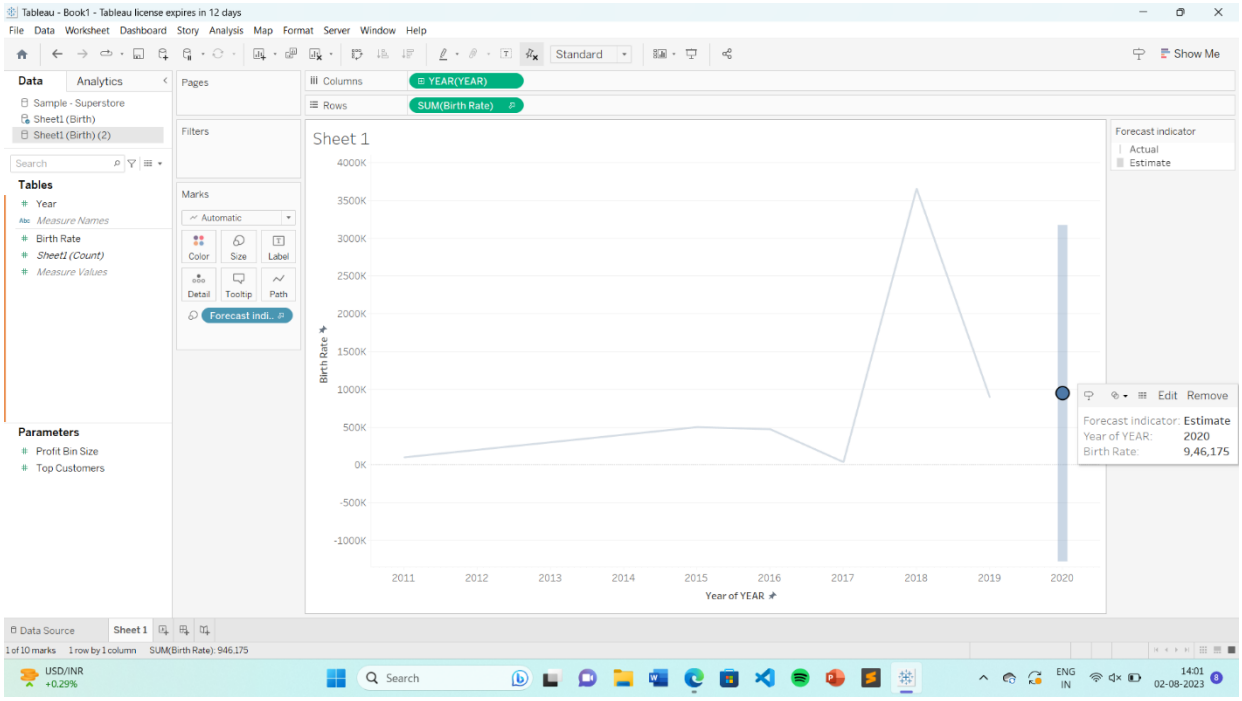
SCATTER PLOT

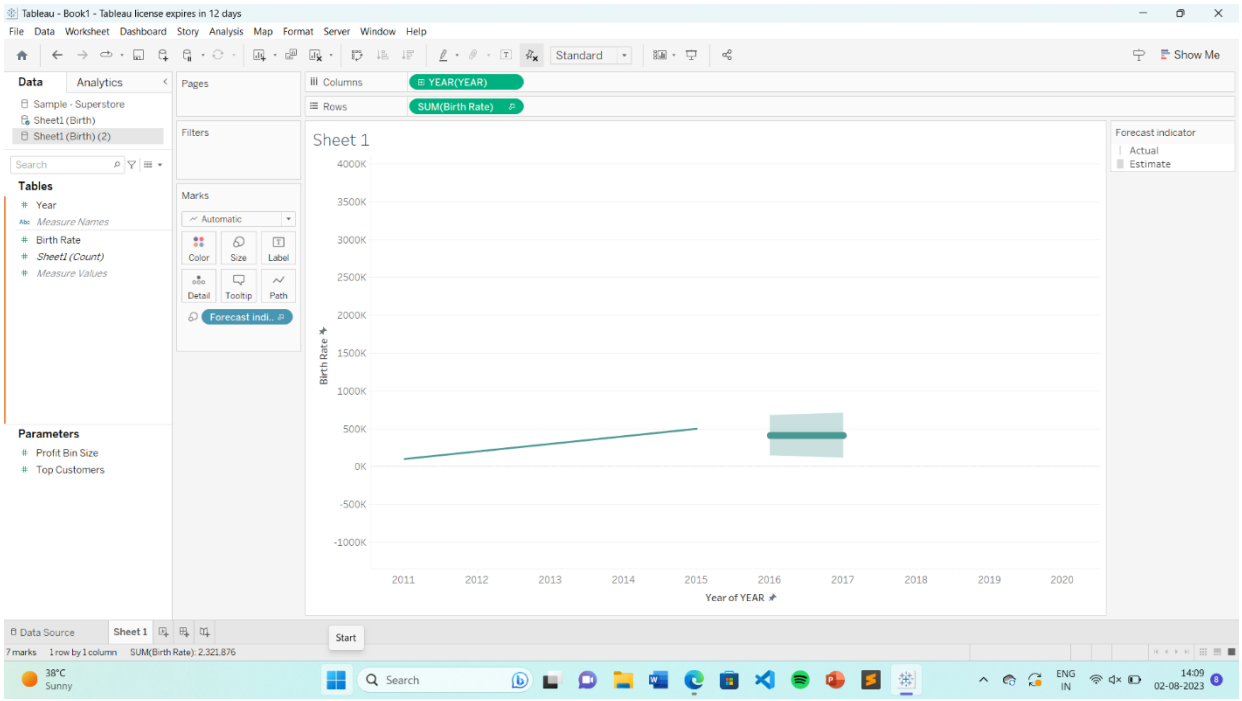


WATERFALL

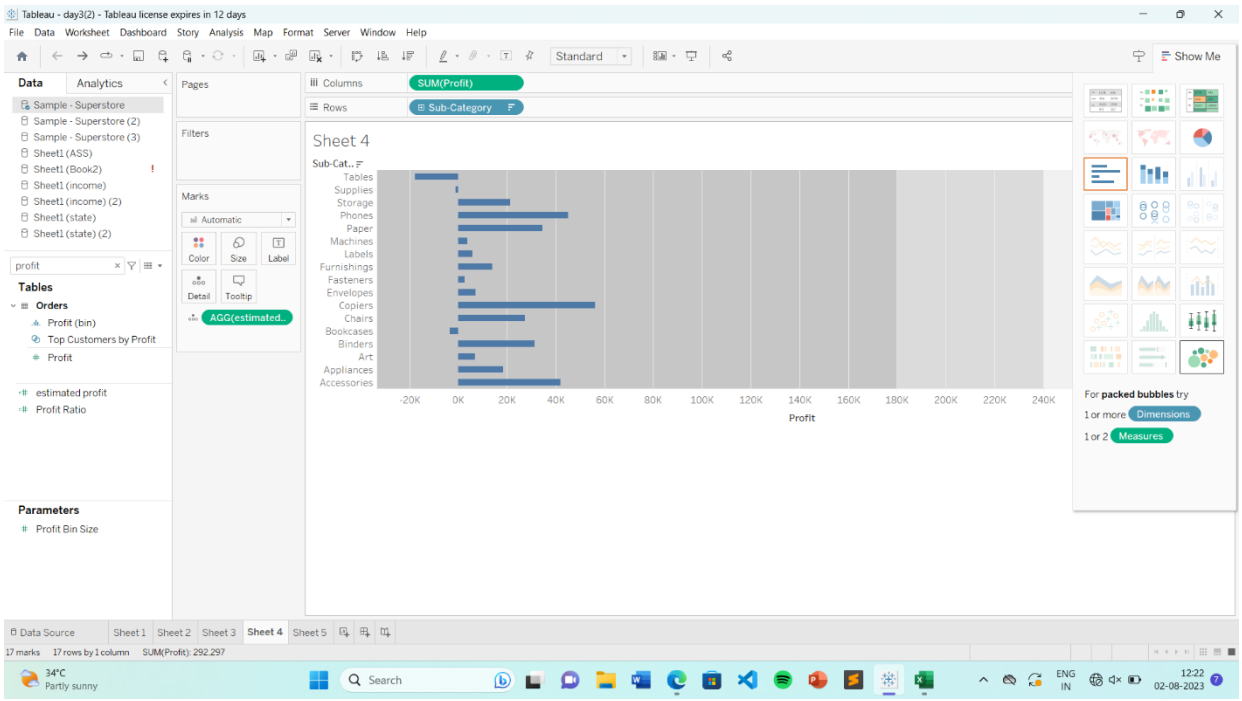


FORECASTING





BULLET CHART



HEAT MAP

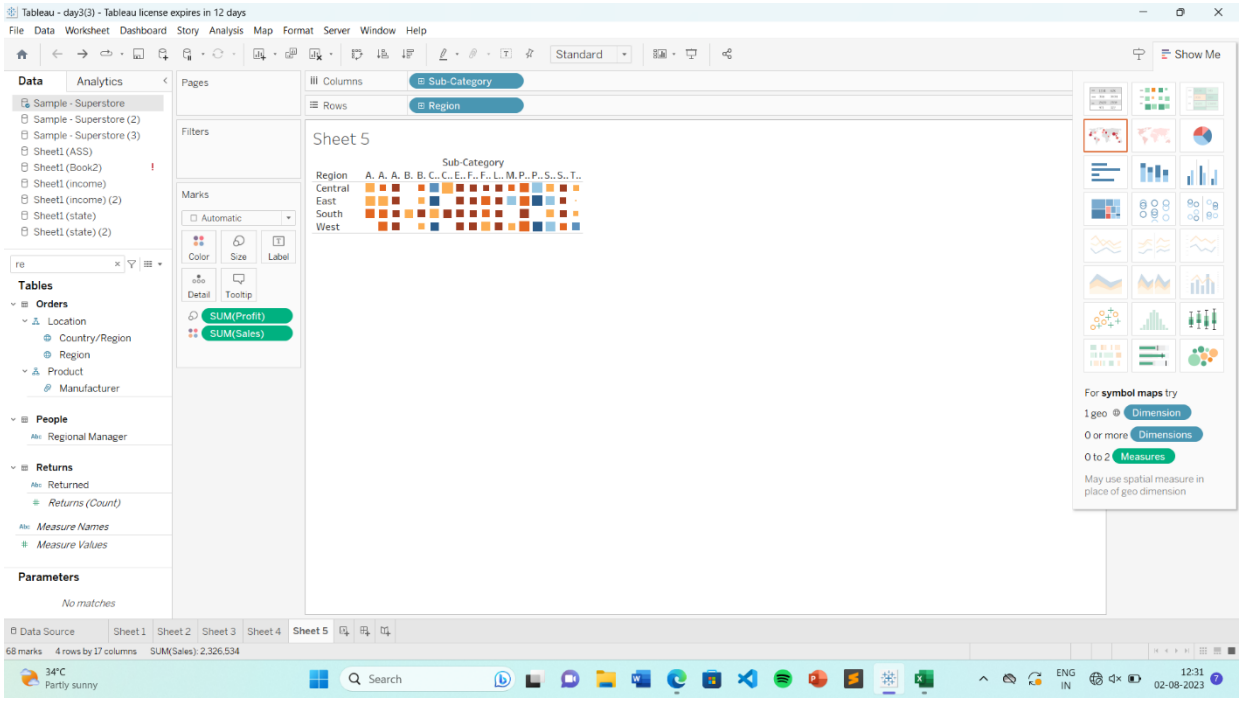


Tableau - day3(3) - Tableau license expires in 12 days
File Data Worksheet Dashboard Story Analysis Map Format Server Window Help
Standard
Show Me
Data
Analytics
Sample - Superstore
Sample - Superstore (2)
Sample - Superstore (3)
Sheet1 (ASS)
Sheet1 (Book2)
Sheet1 (income)
Sheet1 (income) (2)
Sheet1 (state)
Sheet1 (state) (2)
Tables
Orders
Location
Country/Region
Region
Product
Manufacturer
People
Regional Manager
Returns
Returned
Returns (Count)
Measure Names
Measure Values
Parameters
No matches
Pages
Filters
Marks
Automatic
Color
Size
Label
Detail
Tooltip
SUM(Profit)
SUM(Sales)
Columns
Sub-Category
Rows
Region
Sheet 5
Sub-Category
Region
Central
East
South
West
For symbol maps try
1 geo Dimension
0 or more Dimensions
0 to 2 Measures
May use spatial measure in place of geo dimension
Data Source
Sheet 1
Sheet 2
Sheet 3
Sheet 4
Sheet 5
68 marks
4 rows by 17 columns
SUM(Sales): 2,326,534
34°C
Partly sunny
Search
ENG
IN
12:31
02-08-2023

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DAY- 4
REPORT

MODEL EVALUATION

UAV – Unmanned Aerial Vehicles

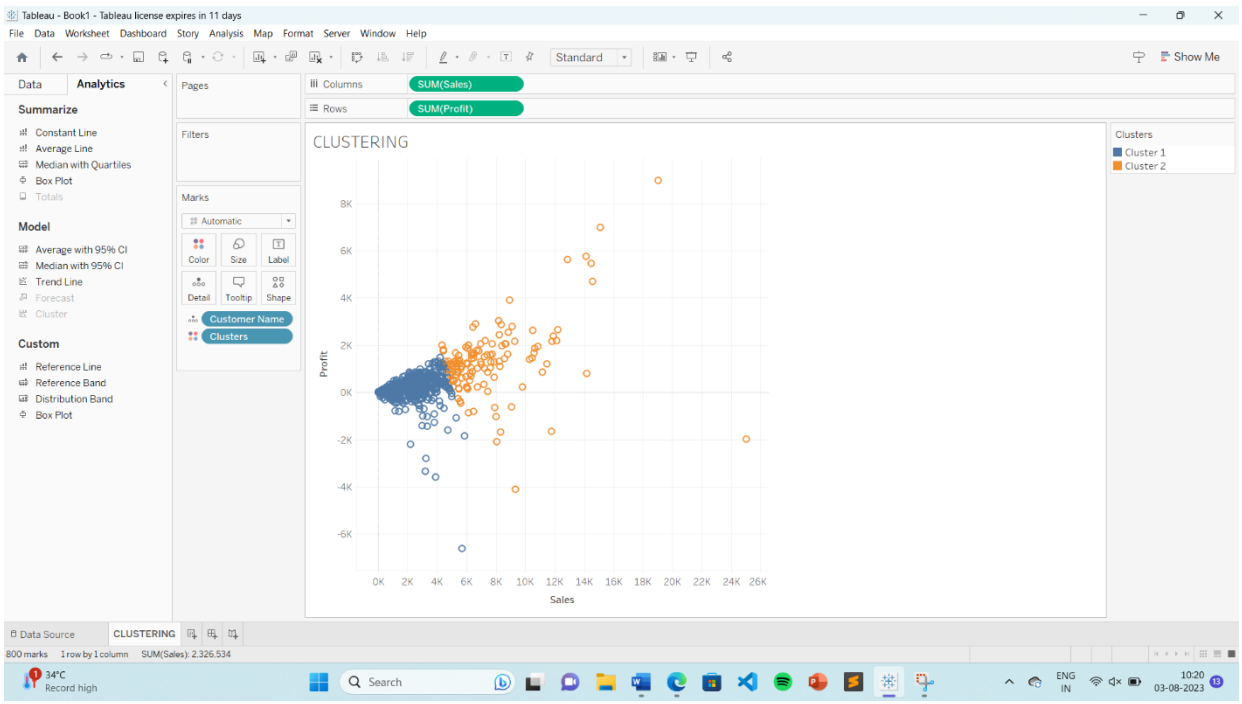
APPLICATIONS

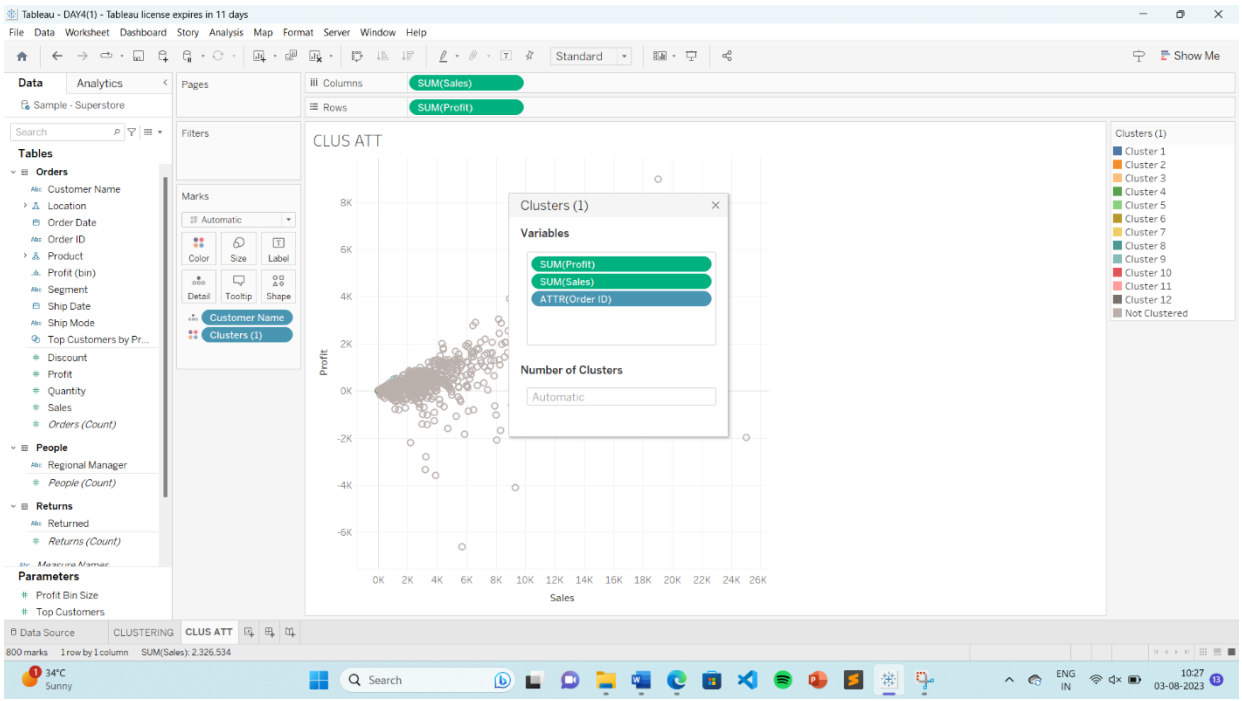
- Raw Data Collection
- Data Preprocessing
- Data Formatting
    - Training models
    - Testing models

EMBEDDED TECHNIQUE

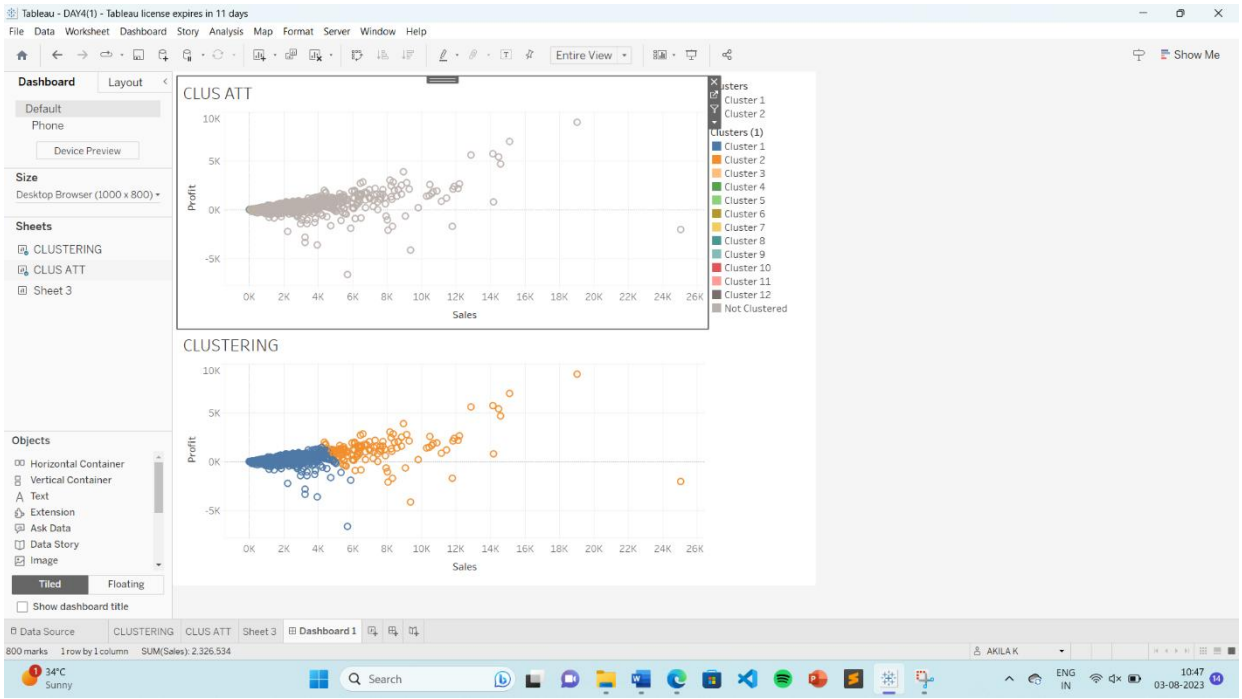
To leverage Tableau effectively for data science projects, you can use various embedded techniques to enhance data analysis, storytelling, and decision-making.

CLUSTERING

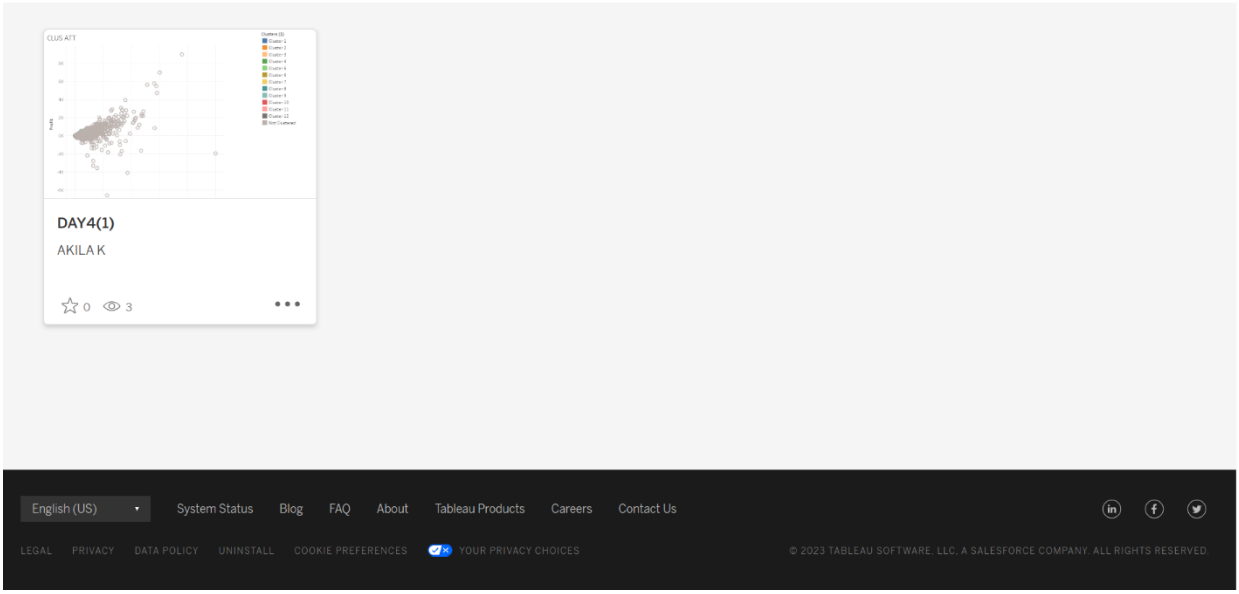




USING DASHBOARD



PUBLISHING IN PUBLIC.TABLEAU.COM



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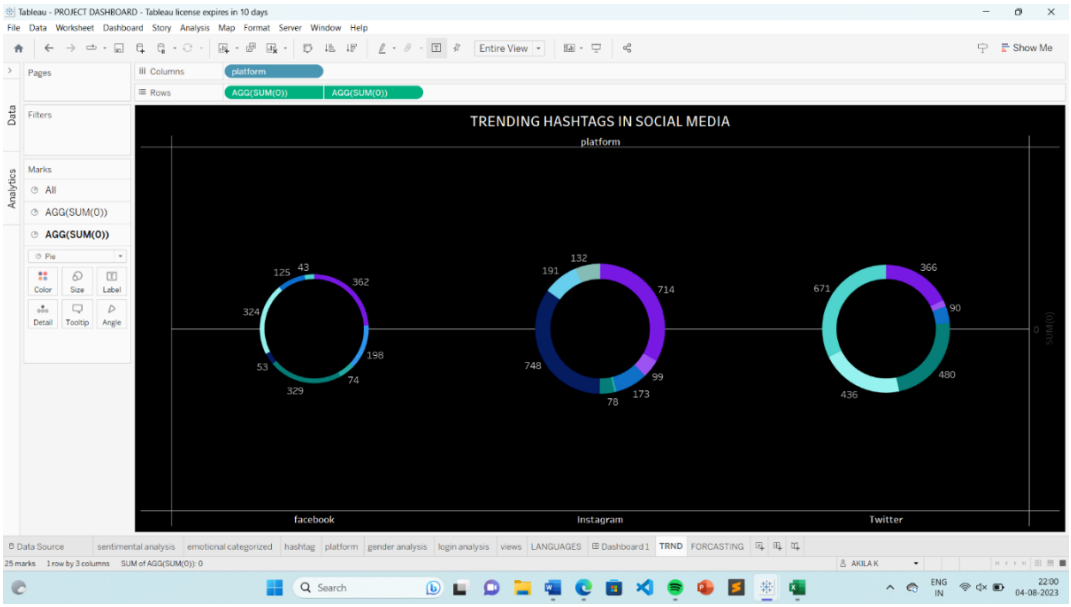
"DATA SCIENCE WITH TABLEAU"

31.07.2023 to 05.08.2023

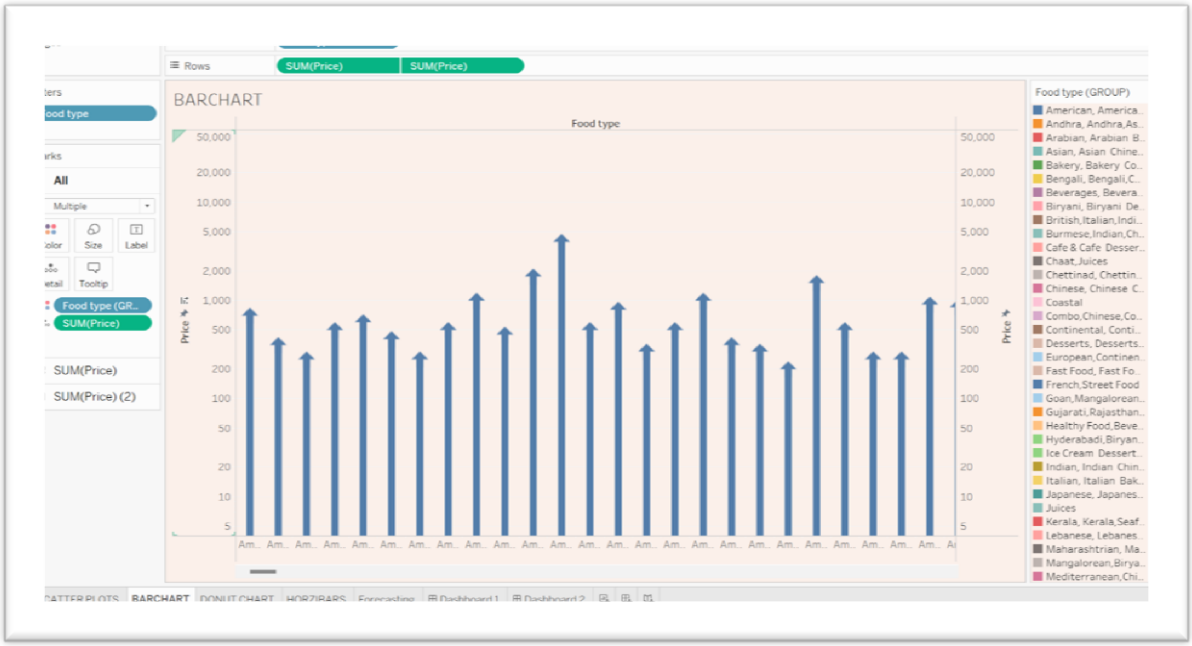
DAY- 5

REPORT

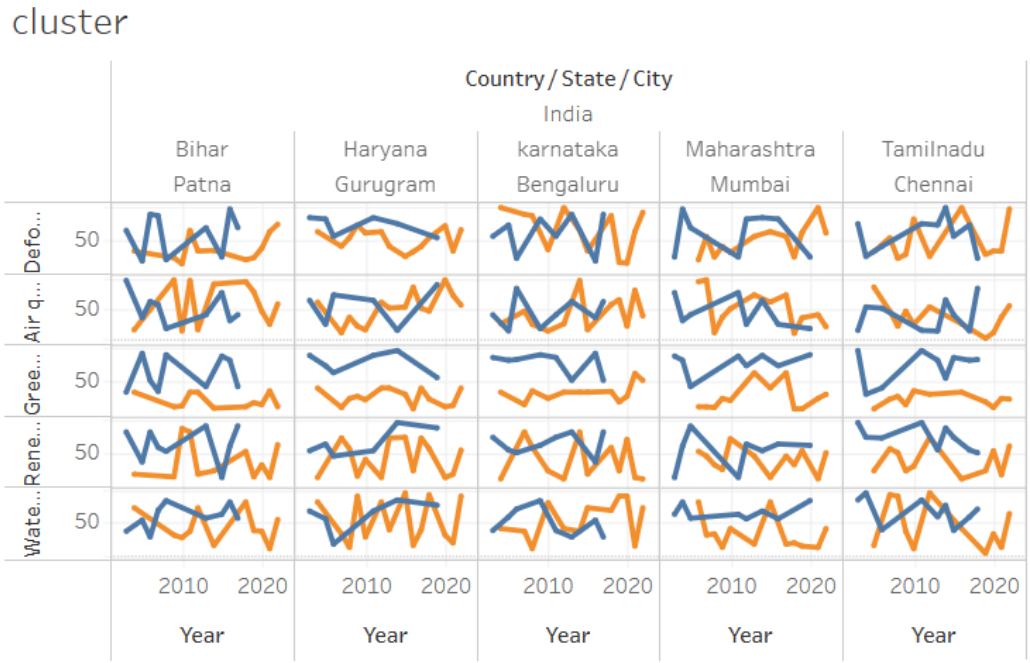
SOCIAL MEDIA SENTIMENTAL ANALYSIS



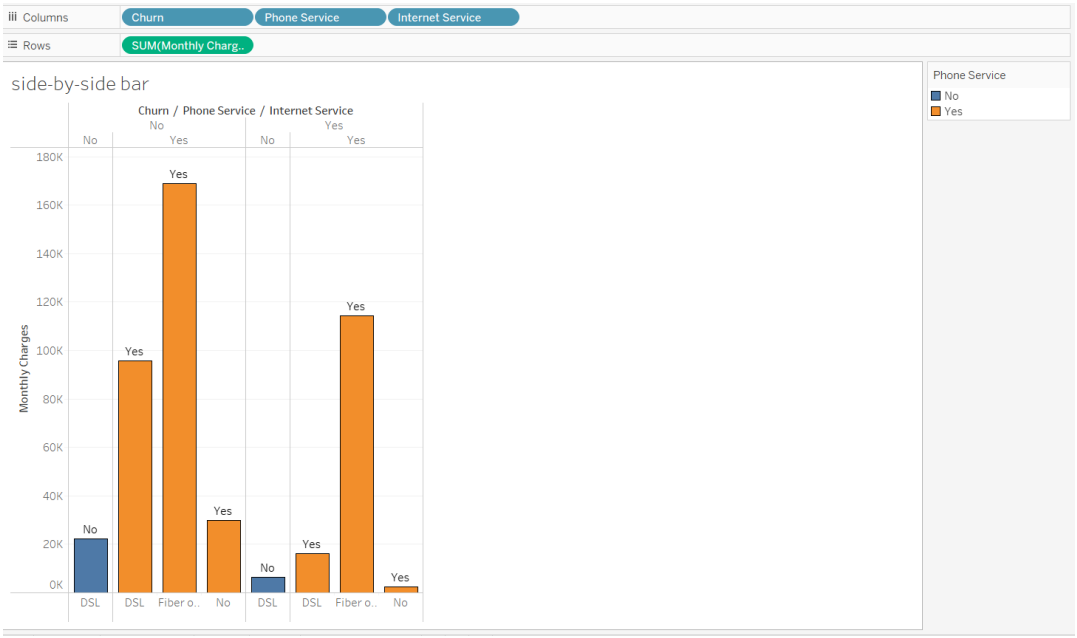
E-COMMERCE USER BEHAVIOUR ANALYSIS



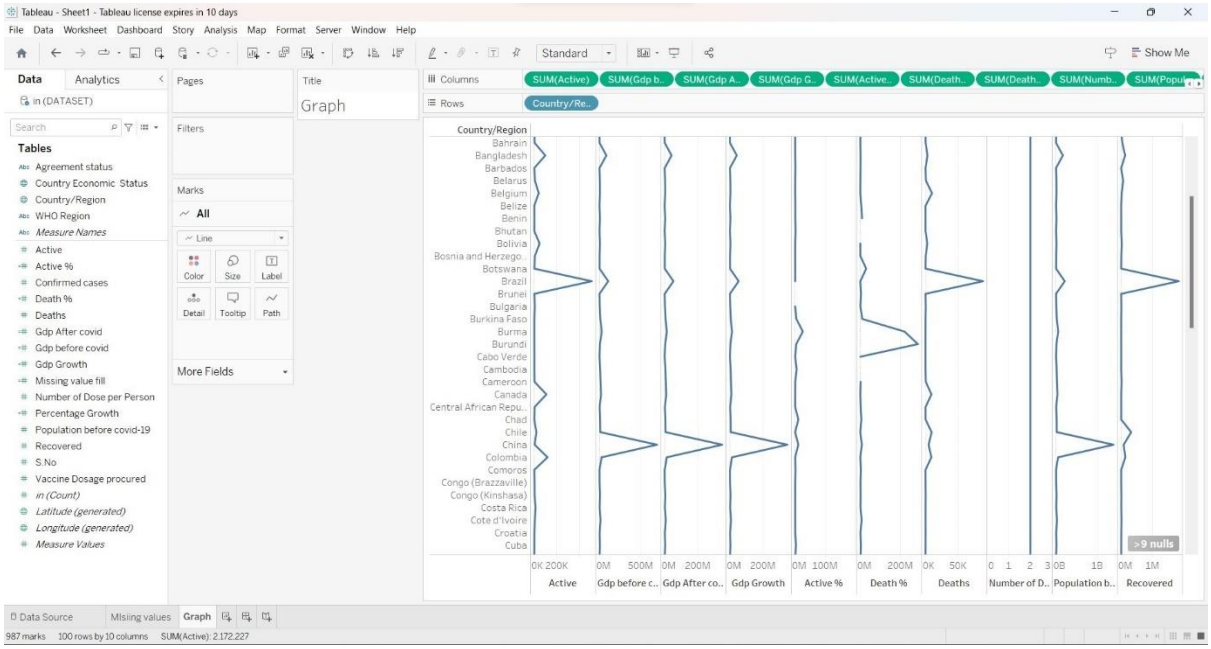
ENVIRONMENTAL IMPACT ANALYSIS



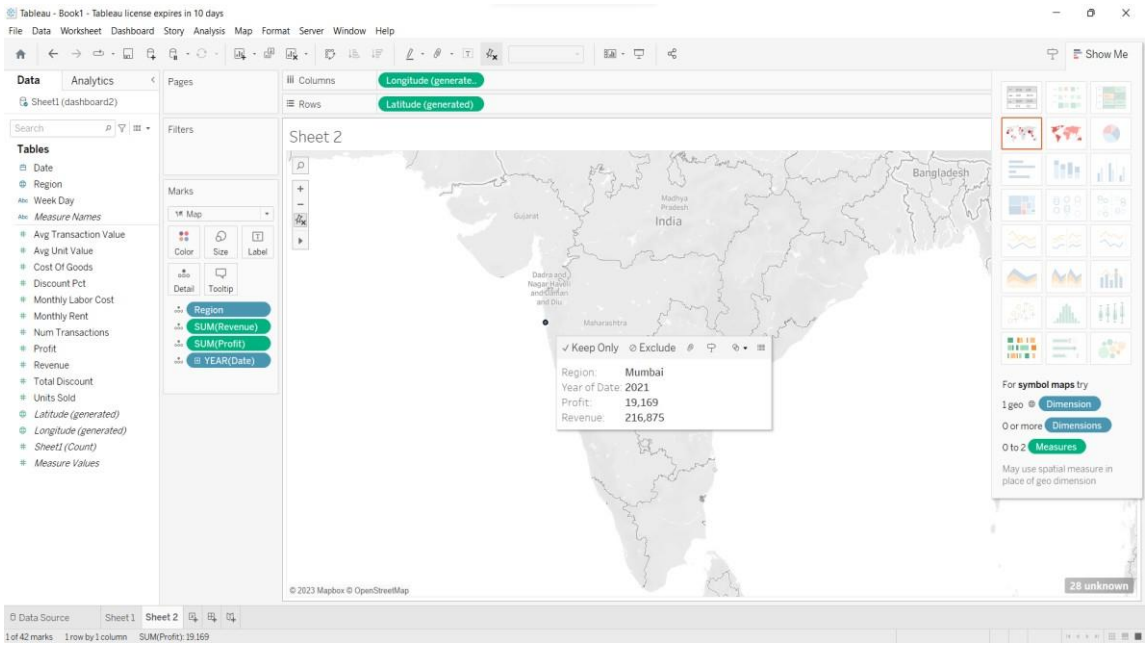
CUSTOMER CHURN ANALYSIS FOR TELECOM COMPANY



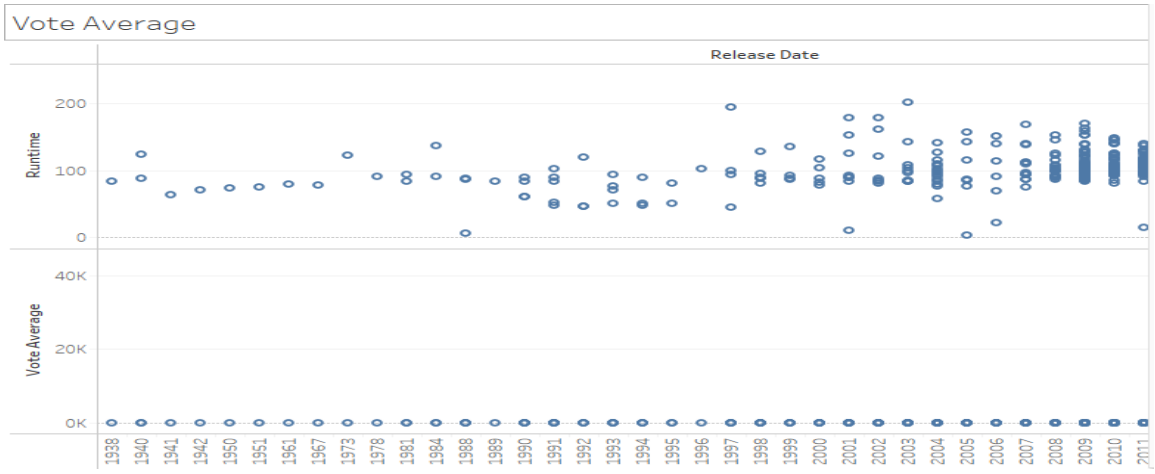
COVID-19 IMPACT ANALYSIS



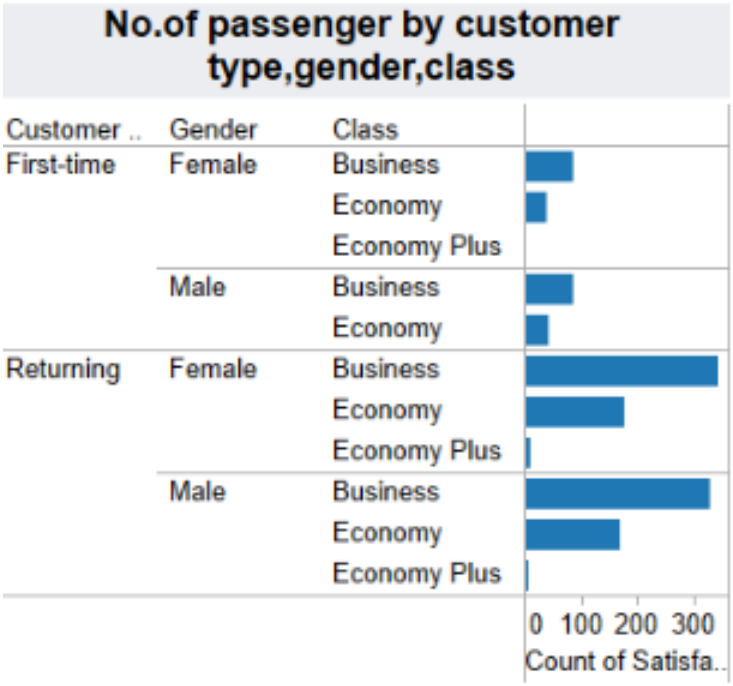
SALES DASHBOARD FOR RETAIL STORE



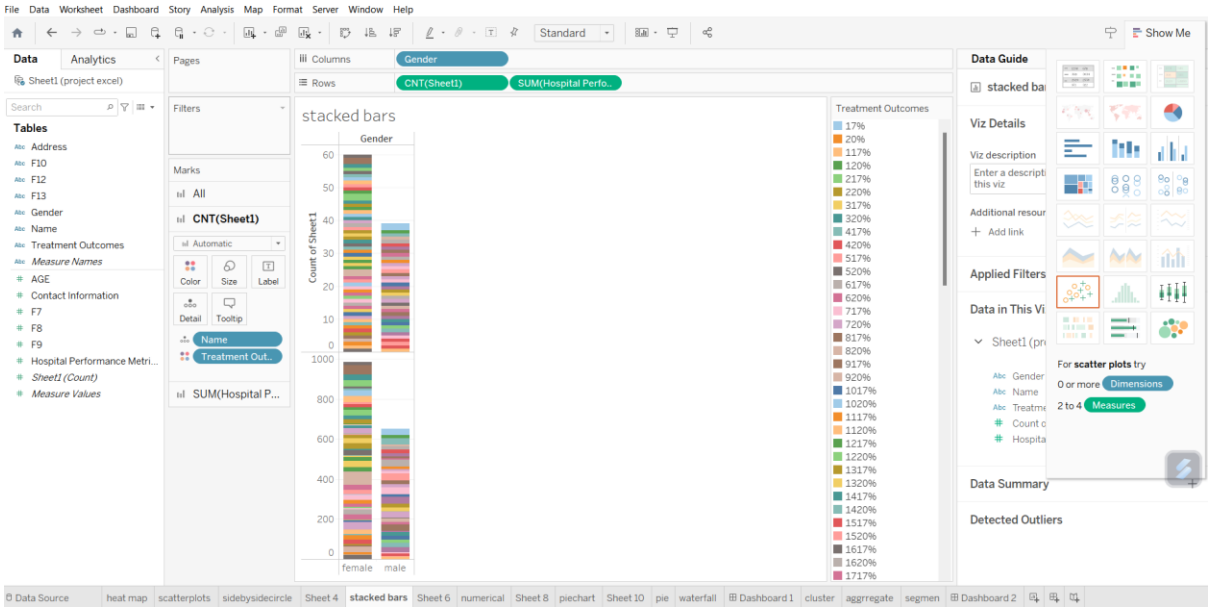
MOVIE RECOMMENDATION SYSTEM



AIRLINE PASSENGER SATISIFACTION ANALYSIS



HEALTH CARE ANALYSIS AND DASHBOARD



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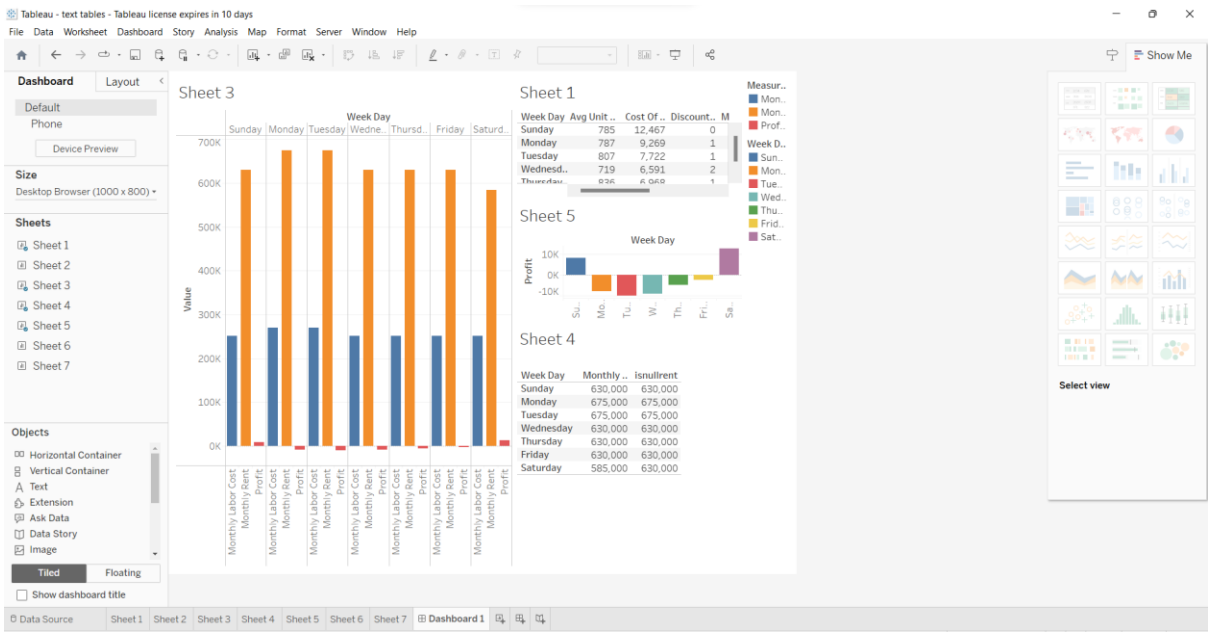
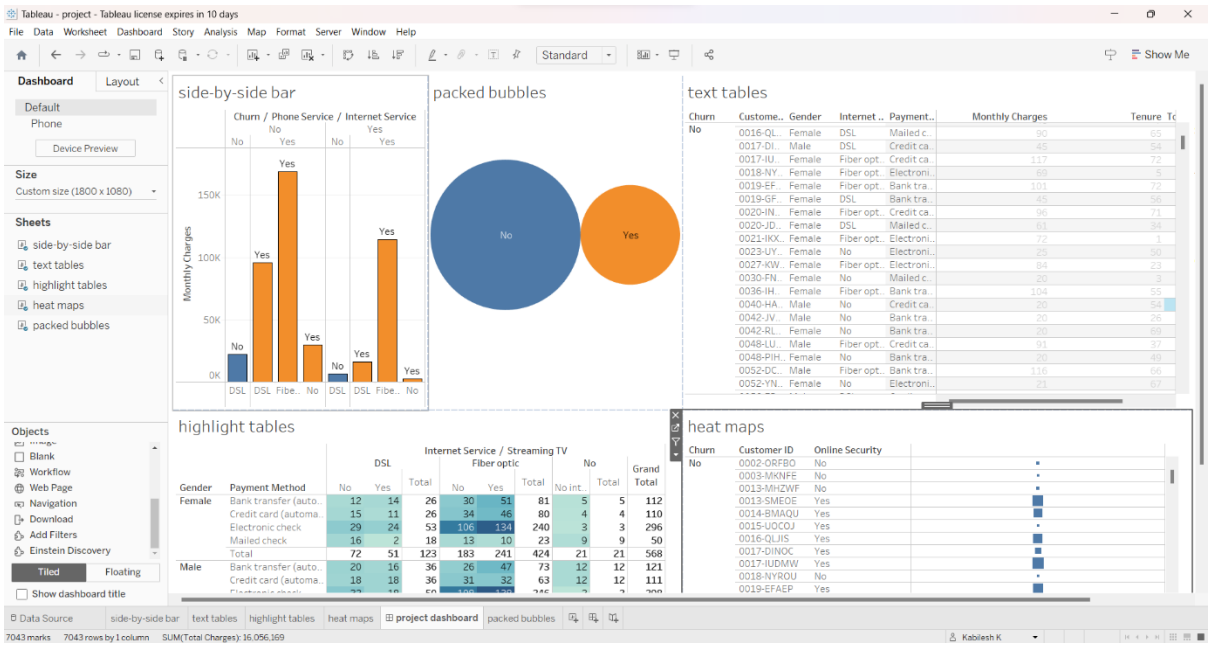
DAY- 6

REPORT

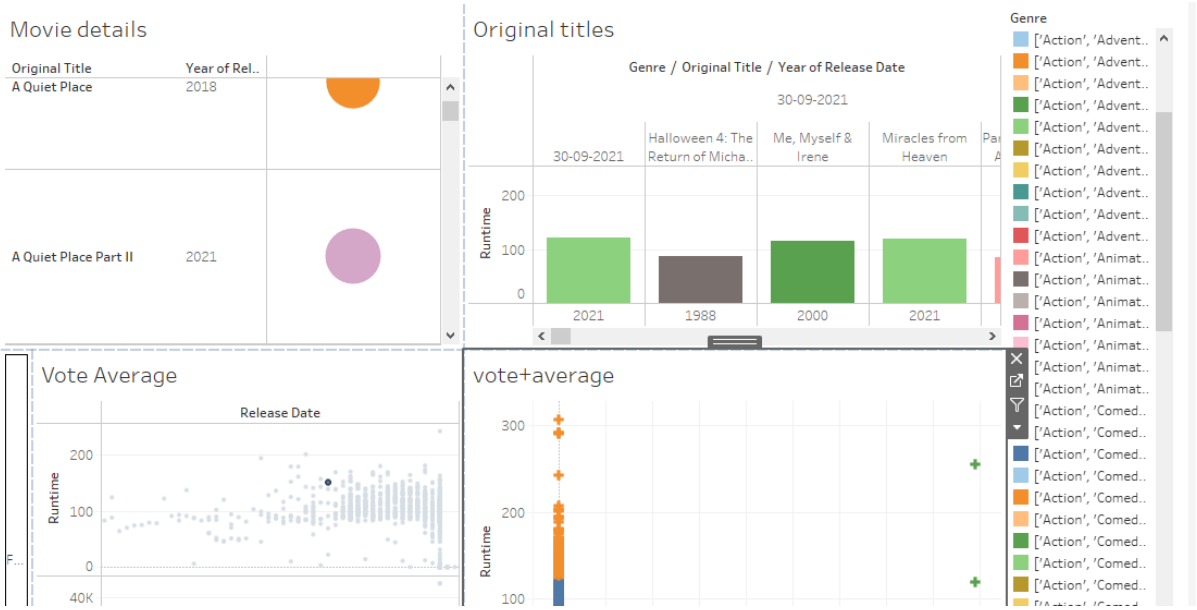
SALES DASHBOARD FOR RETAIL STORE



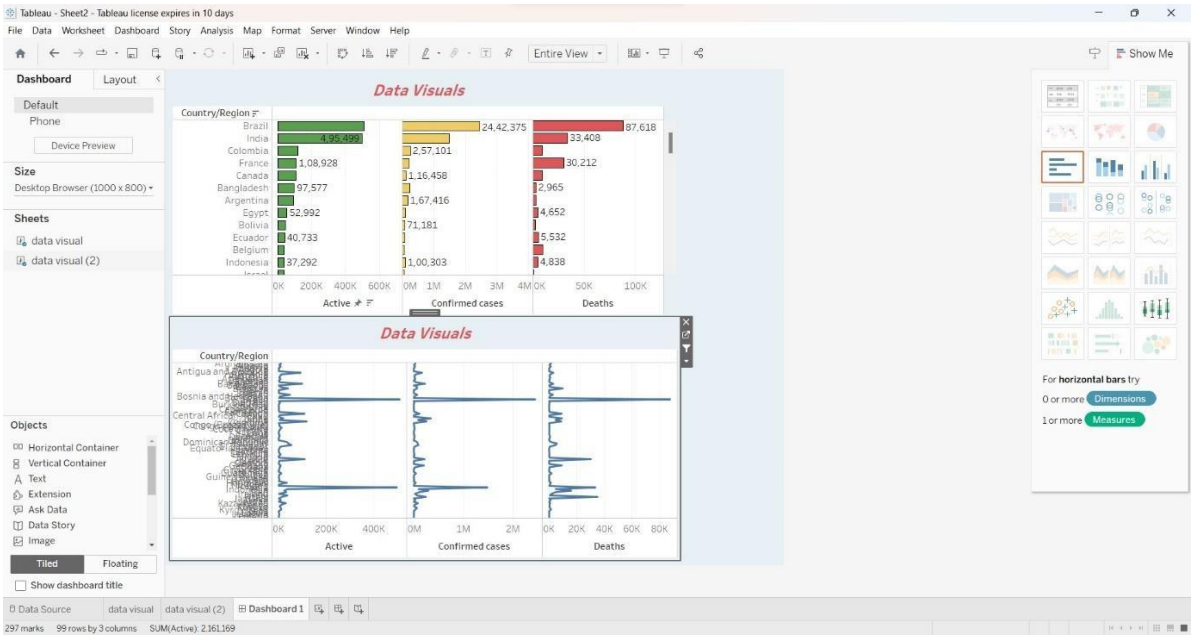
CUSTOMER CHURN ANALYSIS FOR TELECOM COMPANY



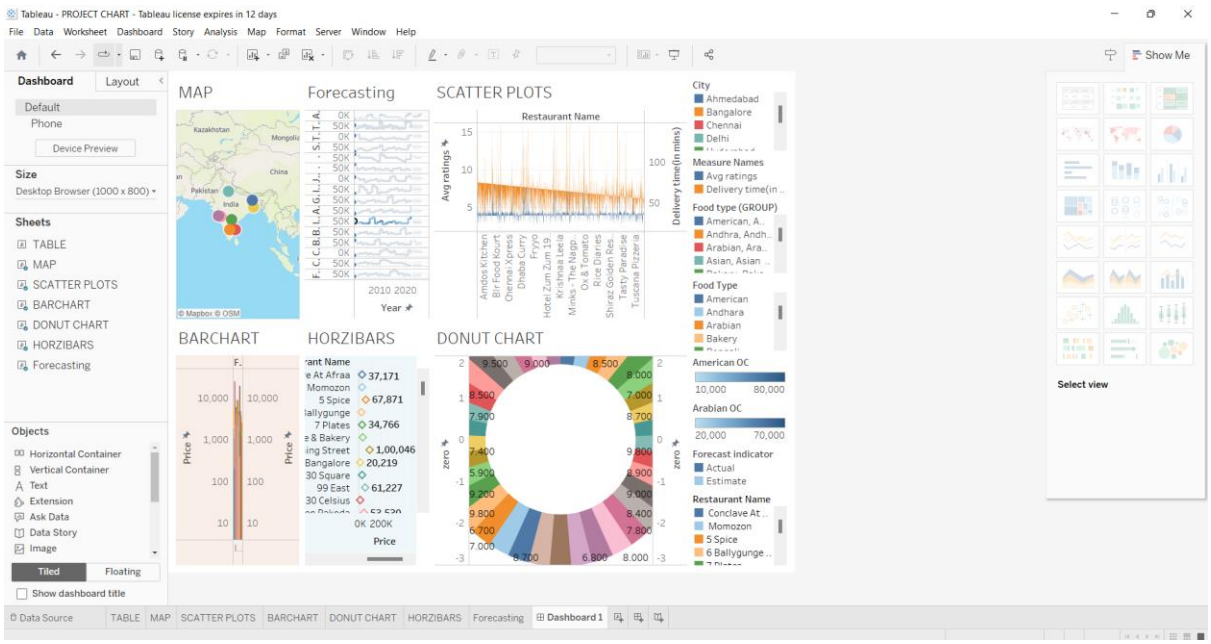
MOVIE RECOMMENDATION SYSTEM



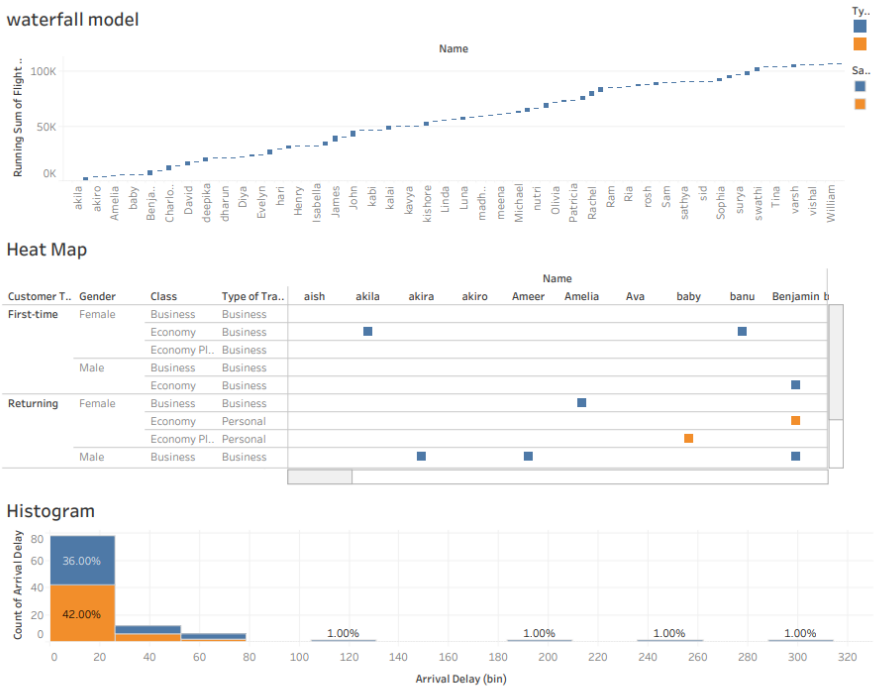
COVID-19 IMPACT ANALYSIS



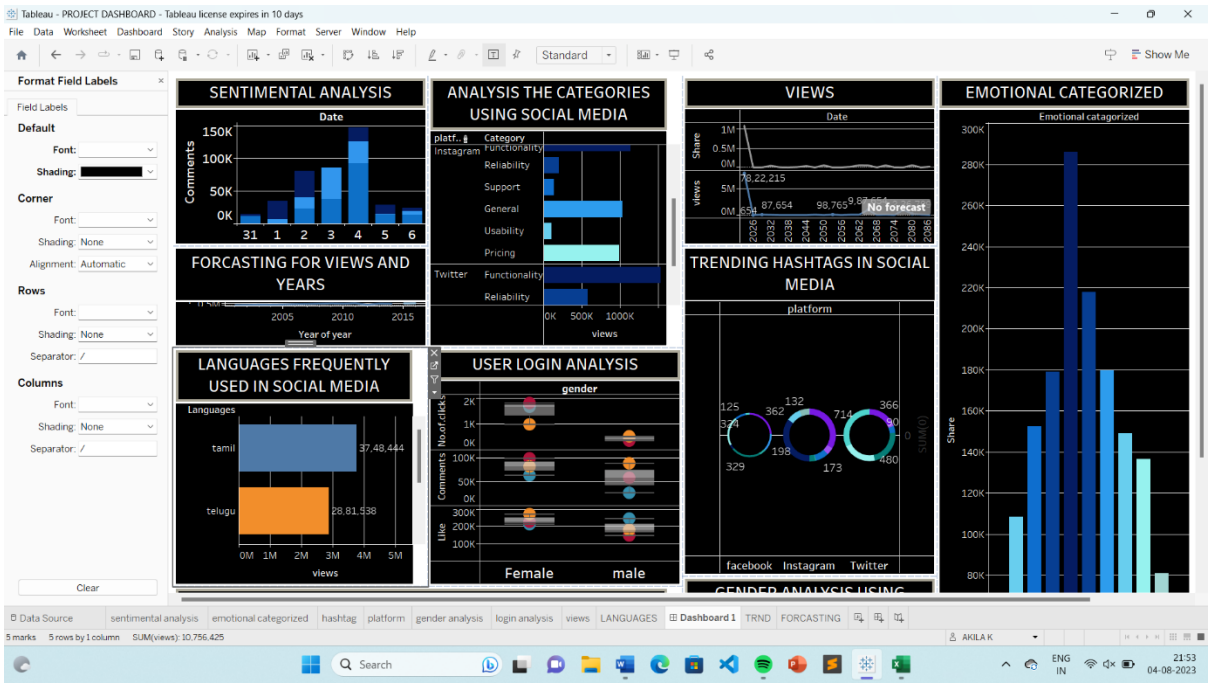
E-COMMERCE USER BEHAVIOUR ANALYSIS



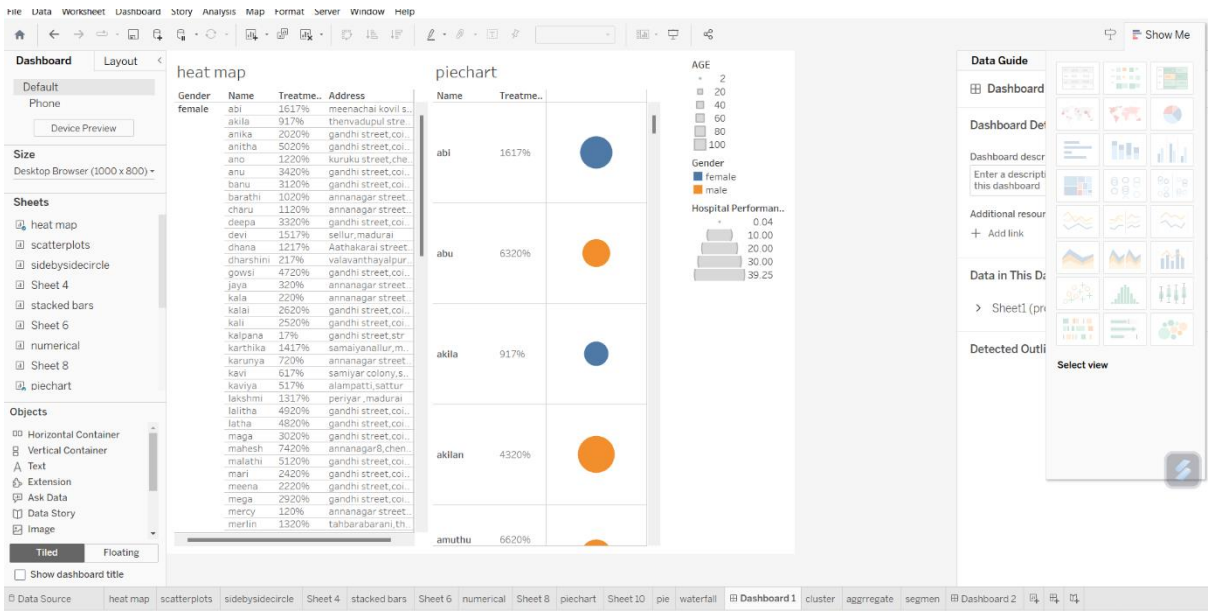
AIRLINE PASSENGER SATISIFACTION ANALYSIS



SOCIAL MEDIA SENTIMENTAL ANALYSIS

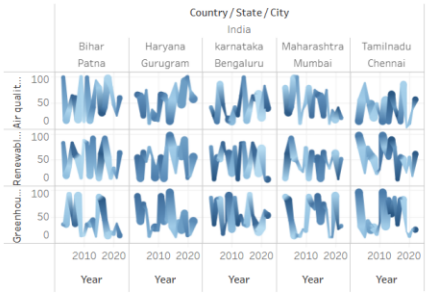


HEALTH CARE ANALYSIS AND DASHBOARD

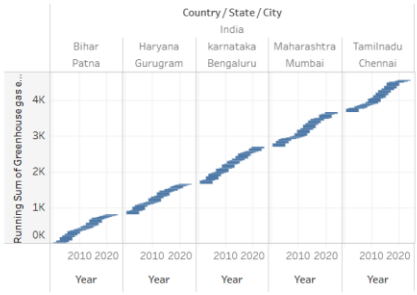


ENVIRONMENTAL IMPACT ANALYSIS

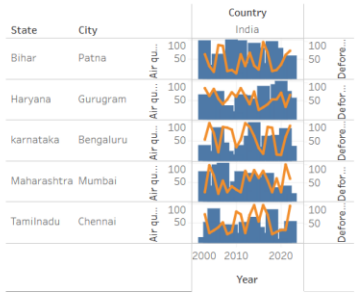
lines



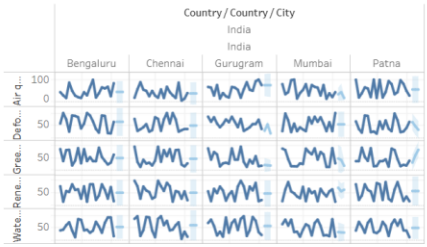
waterfall chart



bureto chart



forecast



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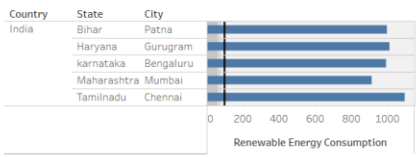
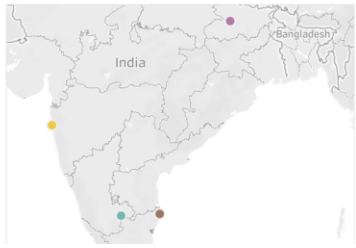


map



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Department of Information Technology

18. Students Oral Feedback (Recorded Video)

Value Added Course

on

Data Science with Tableau

Available in One Drive Folder

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19. VAC - Short Video

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