



(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 Computer Science and Engineering

Value Added Course on "Mastering the Art of Coding – Java Programming"

(12.02.2024 – 17.02.2024)

Trainer's Name : Mr.S.Sasidharan,HRLytics Private Limited,Bangalore.
Mr.S.Mukunthan , HRLytics Private Limited,Bangalore.

Course Objectives:

- To understand the basics of Java programming language.
- To learn the concepts of classes and objects
- To learn the basic of inheritance and interfaces in Java
- To Construct a simple generic function in Java
- To understand basics of the multithreading and exception handling mechanism

UNIT 1 Foundations of Java Programming: 9

Introduction to Java: Basic Features of - Data Types - Variables and Constants - Expressions and Operators - Type Casting - Conditional Statements - Looping Constructs - Input and Output Statements - Arrays in Java - Functions in Java - String Basics and Operations - Wrapper Classes - Concept of Boxing and Unboxing

UNIT 2 INTRODUCTION TO OBJECT-ORIENTED PRINCIPLES: 9

Classes and Objects in Java - Data Encapsulation and Static Keyword: Constructors - Static and Final Keywords - Inheritance and its Code Implementation - Polymorphism - Abstract Class and its Implementation in Java

UNIT 3 JAVA STANDARD LIBRARIES: COLLECTIONS 9

Introduction to Generics and Collections API - Importance and Need of Collections - Various Collection Classes and Hierarchy - API Methods in Collection Classes - Comparator and Comparable Interfaces

UNIT 4 JAVA STANDARD LIBRARIES: GENERICS 9

Understanding Generics in Java - Generics and its Role in Collection Classes - Exploring Generic Types - Wildcards in Generics - Use cases and Benefits of Generics - Limitations and Best Practices


UNIT 5 MULTITHREADING, EXCEPTION HANDLING: 9

Multithreading-Creation of single thread-Creation of multi thread- Thread lifecycle-Thread synchronization- Interprocess communication-Introduction to Exception -Types of Exceptions - Class Hierarchy of Exceptions and Errors - Hands-on Practice: Common Exception Handling Techniques.

Course outcomes:

By the end of the course, the student will be able to:

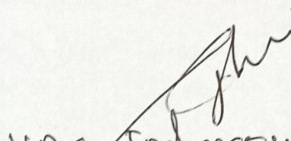
- CO1 Understand basic constructs of the Java language
- CO2 Understand the basic principle of object oriented programming concepts
- CO3 Demonstrate inheritance and interfaces in Java
- CO4 Apply the concepts of collections and generics to write simple real world applications.
- CO5 Build simple Java applications using threads and exception handling


VAC - Coordinator.

V. RAJESH KANNAN, AP-CSE

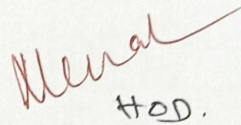
R. KUMARAVEL AP-CSE

G. PRAVEEN KUMAR - AP-CSE


VAC Incharges.

Dr. G. UMAMAHESWARI.

Dr. G. NIRMALA.


HOD.

Dr. A. MEENAKSHI.

DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

Value Added Course – Even Semester (2023- 24)

Course Name: JAVA PROGRAMMING

Duration: 6 days (45 Hours)

MASTERING THE ART OF CODING-JAVA PROGRAMMING

12-02-2024-17-02-2024

No.of Students:60

Resouce Person:Mr.S.Sasidharan

Year:II CSE-A,B,C &ADS

Regulation:2021

Course Objectives:

The objective of the course is to:

- Understand the basics of Java programming language.
- Learn the concepts of classes and objects
- Learn the basic of inheritance and interfaces in Java
- To Construct a simple generic function in Java
- To understand basics of the multithreading and exception handling mechanism

Day 1: Foundations of Java Programming

1. Basic Concepts:

- Basics of Java
- Operators
- Variables
- Conditional Statements
- Looping
- Arrays

Day 2: Introduction to object-Oriented Principles

1.CLASSES AND OBJECTS

- Strings
- Defining Classes
- Objects
- Methods
- Constructors.

2.Absraction and Encapsulation

Day 3: Inheritance , Interface and Inner Class

- Inheritance
- Superclasses
- Subclasses
- Types of Inheritance
- Abstract classes and methods
- Final classes and methods
- Interfaces.
- Inner classes

Day 4: Collections and Generic Method

1. Introduction to Generics and Collections API
 - Importance and Need of Collections
 - Various Collection Classes and Hierarchy.
 - Comparator and Comparable Interface
 - API Methods in Collection Classes

Day 5: Collections and Generic Method

1. Understanding Generics in Java
 - Generics and its Role in Collection Classes
 - Exploring Generic Types
2. Generic Programming
 - Generic Class - Wildcards in Generics
 - Generic Methods- Applications
 - Use cases and Benefits of Generics

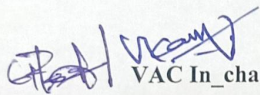
Day 6: Multithreading and exception Handling.

1. Multithreading
 - Creation of single thread
 - Creation of multi thread
 - Thread Life Cycle
 - Thread Synchronization
 - Inter process communication.
2. Exception Handling.
 - Introduction to Exception
 - Class Hierarchy of Exceptions and Errors.
 - Creation of Exception using try and catch block


Course outcomes:

By the end of the course, the student will be able to:

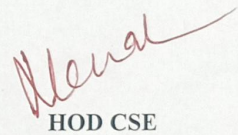
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- CO5 Build simple Java applications using threads and generic class


VAC In_charges

G. PRAVEEN KUMAR,
V. RAJESH KANNAN


VAC Coordinators

Dr. G. UMA MAHESWARI,
Dr. G. NIRMALA


HOD CSE

Dr. A. MEENAKSHI