

# Day – 1

## Introduction to 'C'

- Parts of C program
  - Pre-processor
  - Header file
  - main() – Single point of Entry
  - Block of Code { }
- Literal vs constants vs variables
- Data types
- Structured Programming Language
- Constructs - flow
  - If.
  - If.. else
  - Combining the if..else
    - Cascade
    - Nest
- Operators
  - Arithmetic - +, - , \*, /, %
  - Relational - <, >, <=, >=, ==, !=
  - Increment , decrement
  - Logical - &&, ||, !
  - Assignment operators - =, += , -= , \*=, /=, &=
  - sizeof() – compile time operator (Differentiator)
- Simple programs
  - printf() – print formatted
  - Syntax of printf()
  - Even or Odd
  - Negative / positive / neutral
  - Divisibility of numbers
    - Divisibility of 2
      - Use modulo operator
      - Use bitwise operator
    - Divisibility of 3, 4, 5, 6 ... 11(Differentiator)
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## Day – 2 & 3

- Switch
- Loop constructs
  - Entry check , exit check
  - While , do..while , for(self documented while)
  - For syntax - differentiator
  - Infinite loop
- Lvalue / Rvalue (Differentiator)
- Lvalue required error
- Programs
  - month print / nod in month
  - multiplication table
  - no of digits, sum of digits
  - Reverse a number
  - Factors
    - Print all factors
    - Sum of Factors
    - Number of Factors
    - Perfect number
    - Amicable numbers
    - Optimization (Differentiator)
  - Prime numbers
  - Factorial
  - Armstrong
  - Strong numbers
  - Generation of all of them
  - Optimization

## Day – 4

- Functions
  - What is function?
  - Naming convention
  - Syntax
  - Parts of function
  - Return type and parameter
  - Actual / formal parameters
  - Call by value / reference
- Convert all the programs into functions
- Memory Map of an executable file (Differentiator)
- Storage class
  - Auto
  - Static
  - Extern
  - Register

## Day – 5

- Array
  - [] operator
  - Accessing method
  - Initialization
  - Traversal
- Problems in array
  - 5 Easy Problems
  - 3 Average level problems
  - 1 Difficult level Problem
- Pointers
  - Definition
  - Advantage of pointer
    - Speed
    - Size
    - Call by reference
    - Dynamic memory allocation
    - Address as a Data Type

## Day – 6

- Pointers vs array
- Array as a pointer and Pointer as an array
- Variable Length Array (Differentiator)
- String functions
- Pointer arithmetic

### Problems in Arrays – Strings

- strlen(),strupr(),strlwr(),strcpy(),strcmp(),strcat(),strrev(),strchr(),strstr()
- Remove vowels
- Remove Duplicate Characters

### ***Additional Problems Covered***

- Backtracking
- 3 Problems

### ***Financials***

***INR 2000/- per student***

With Regards

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