

## 1. Introduction to C

- Basics of programming
- Need of programming?
- History of C
- Structure of C program
- working of computer
- software installation
- Translators
- Algorithms & Flowcharts
- Keywords in c
- identifiers in c
- Datatypes in c
- Operators in c
- input/output statements
- Programs of each topic

## 2.Control Structure

- Definition
- Decision making statements
- looping statements
- jumping statements
- Pattern Programming
- Programs of each topic
- MINI PROJECT

## 3.Functions in C

- Definition
- What is function?
- Types of function
- User defined function
- Steps to create user defined function
- call by reference & call by value
- Programs of each topic
- MINI PROJECT

## 4.Array & Pointer in C

- definition
- what is array ?
- creating array
- Types of array
- One-dimensional array
- Two-dimensional array
- Multi-dimensional array
- What is pointer?
- How to use pointer?

- pointer to pointer
- function & pointer
- Programs on each topic

## 5.Strings in C

- What is string?
- String creation
- Types of string
- functions of string
- Programs on each topic

## 6.File handling & memory management

- What is file?
- Operations on file
- Reading , writing file
- Memory allocation/delocation
- Dynamic memory allocation

## 7. MAJOR Project development

- Hospital Management
- Library Management

## C++

### 1.introduction to c++

- Need of c++
- What is c++?
- History of c++
- Difference between c & c++
- concepts of OOP's
- Program for practice

### 2. Classes & Objects

- What is class?
- Syntax to create class
- What is Object?
- How to create objects?
- Using Cin/Cout
- Dynamic Memory allocation
- Functions with default arguments
- difference between structure & class
- class members & members functions
- Members functions with default arguments
- Passing class type parameters
- How to access private members?
- Arrays of Objects

### 3. Inheritance

- What is inheritance ?
- Syntax & implementation
- Types of inheritance
- Single-level inheritance
- multi-level inheritance
- Multiple inheritance
- Hierarchical Inheritance
- Hybrid Inheritance
- Programs on each topic

### 4. Polymorphism

- What is polymorphism?
- Applications of polymorphism
- Types of polymorphism
- Compile-time polymorphism
- Run-time polymorphism
- Function-Overloading
- Operator Overloading
- Virtual functions
- Programs on each topic

### 5. Constructors & destructors.

- What is constructor?
- How to implement constructor ?
- Types of constructors
- Constructor Overloading
- What is destructor?
- implementation of destructor
- What is friend function?
- what is friend class ?
- Programs on each topic

### 6. Friend , static & Virtual things

- What is friend function?
- what is friend class ?
- Static data members
- Static member function
- Constant members
- What is virtual class?
- Pure virtual class
- implementing virtual classes
- Abstract base class
- Programs on each topic

### 7. Templates & generics

### 8. Exception Handling

### 9. File Handling

### BONUS COURSES:

1. SOFTWARE DEVELOPMENT LIFE CYCLE
2. RESUME PREPARATION
3. PLACEMENT ASSISTANCE