

# C++ (with Advanced Features)

## Language Fundamentals:

- C++ Tokens
- Identifiers
- Literals
- Reserved Words/Keywords
- Data Types
- Operators
- Control Structures
- Arrays

## Functions:

- Defining Functions
- Calling Functions
- Different ways of writing Functions
- Default Parameters
- Pass by Value
- Pass by Address
- Pass by Reference
- Return by value, address and reference
- Function Overloading
- Inline Functions
- Lambda Functions
- Recursion

## OOPS:

- OOPS Concepts
- Class
- Object
- Properties
- Methods
- Constructors
- Types of Constructors
- Copy Constructor
- Constructor Overloading
- Destructors
- Access Modifiers(public, private and protected)
- Inheritance
- Polymorphism
- Virtual Functions
- Pure Virtual Functions
- Abstract Class
- Operator Overloading
- Method Overloading
- Method Overriding
- Friend Classes and Friend Functions
- Static Members

## Strings:

- C-Style Character Strings
- C++-Strings
- Using `std::string`

## Exception Handling:

- Throwing an Exception
- try-catch blocks
- Nested try blocks
- Catching all Exceptions

## I/O Streams:

- C++ Streams
- Formatted Console I/O Operations
- Unformatted Console I/O Operations
- Manipulators
- User-Defined Manipulators

## Files:

- Opening and Closing a File
- File Modes
- Sequential Accessing
- Random Accessing

## Templates:

- Function Templates
- Multiple Template Parameters
- Class Templates

## STL [Standard Template Library]:

- Vector
- Stack
- Queue
- List
- Set
- Map

## Miscellaneous:

- Namespaces
- Smart Pointers