

INTRODUCTION C++  
HISTORY, FEATURES  
RULES OF C++ PROGRAMMING  
STRUCTURE OF C++ PROGRAM  
C++ TOKENS (IDENTIFIERS, KEYWORDS, CONSTANTS, OPERATORS, SPECIAL  
CHARACTERS)  
C++ DATA TYPES  
(BASIC, DERIVED, USER DEFINED)

OBJECT ORIENTED PROGRAMMING PRINCIPLES  
NEED OF OOPS,  
DIFFERENCE B/W STRUCTURED & OOPS  
WHAT ARE OBJECTS, FEATURES  
OOPS FEATURES  
CLASSES & OBJECTS  
ENCAPSULATION  
INHERITANCE  
POLYMORPHISM  
DATA ABSTRACTION

BASIC PROGRAMMING  
CONSOLE I/O STATEMENTS(CIN, COUT)  
PROGRAMS TO PERFORM VARIOUS CALCULATIONS  
OPERATORS  
PROGRAMS TO IMPLEMENT VARIOUS OPERATORS

CONTROL STATEMENTS  
CONDITIONAL CONTROL STATEMENTS  
IF-ELSE , SWITCH-CASE  
LOOPS O WHILE, DO WHILE, FOR  
IMPLEMENTING PROGRAMS ON CONDITIONAL & LOOPS  
BREAK, CONTINUE, GOTO KEYWORDS

ARRAYS  
DEFINITION, ADVANTAGES  
ARRAY TYPES  
SINGLE DIMENSION  
DOUBLE DIMENSION  
DECLARATION, ACCESSING ARRAY DATA

## IMPLEMENTATION OF ARRAY OPERATIONS

### FUNCTIONS

DEFINITION, ADVANTAGES, TYPES OF FUNCTIONS, CLASSIFICATION  
IMPLEMENTING VARIOUS KINDS OF FUNCTIONS  
INLINE FUNCTIONS

### OBJECT ORIENTED PROGRAMMING

DEFINING A CLASS ,CREATING OBJECTS  
ACCESSING DATA MEMBERS USING OBJECTS

### CALLING MEMBER FUNCTIONS USING OBJECTS

IMPLEMENTING ARRAY OF OBJECTS  
OBJECTS AS PARAMETERS & RETURN TYPE  
NEW  
THIS OPERATORS  
SCOPE RESOLUTION OPERATOR  
ACCESS SPECIFIERS(PRIVATE, PUBLIC, PROTECTED)  
IMPLEMENTING STATIC DATA MEMBERS  
IMPLEMENTING STATIC MEMBER FUNCTIONS

### FUNCTION OVERLOADING

WHAT IS FUNCTION OVER LOADING  
IMPLEMENTING OVERLOADING ON VARIOUS FUNCTIONS

### OPERATOR OVERLOADING

DEFINITION, WHY IT IS REQUIRED, ADVANTAGES  
ABOUT OPERATOR KEYWORD, RULES OF OPERATOR OVERLOADING  
OVERLOADING VARIOUS OPERATORS

### CONSTRUCTORS & DESTRUCTORS

DEFINITION, USES  
TYPES (DEFAULT CONSTRUCTOR, PARAMETER CONSTRUCTOR, COPY CONSTRUCTOR)  
DESTRUCTORS

FRIEND FUNCTION & FRIEND CLASSES  
FRIEND FUNCTION DEFINITION, USAGE OF FRIEND KEYWORD  
IMPLEMENTING OF FRIEND FUNCTIONS IN VARIOUS SCENARIOS  
FRIEND CLASS DEFINITION, USAGE  
IMPLEMENTING OF FRIEND CLASS

INHERITANCE  
DEFINITION, ADVANTAGES  
TYPES OF INHERITANCES (SINGLE, HIRERCHIAL, MULTILEVEL, MULTIPLE HYBRID)  
IMPLEMENTING VARIOUS KINDS OF INHERITANCES  
IMPLEMENTING VARIOUS CONSTRUCTORS IN INHERITANCE  
IMPLEMENTING FUNCTION OVER RIDING  
IMPLEMENTING VARIOUS ACCESS LEVELS IN INHERITANCE

VIRTUAL FUNCTIONS & ABSTRACT CLASSES  
DEFINITION, REQUIREMENT  
HOW TO IMPLEMENT  
PURE VIRTUAL FUNCTION DEFINITION  
IMPLEMENTING ABSTRACT CLASSES

TEMPLATES  
TEMPLATE DEFINITION  
GENERIC FUNCTION  
GENERIC CLASS  
TEMPLATE FUNCTION OVERLOADING

I/O STREAMS & FILES  
STREAMS HIERARCHY  
INPUT STREAMS & OUTPUT STREAMS  
WHAT IS FILE?

IMPLEMENTING VARIOUS FILE OPERATIONS ON BASIC DATA TYPES(WRITE, READ,  
APPEND AND MODIFY)

IMPLEMENTING VARIOUS FILE OPERATIONS ON OBJECT DATA TYPES(WRITE, READ,  
APPEND AND MODIFY)

RANDOM ACCESS FILES(SEEKP, SEEKG, TELLP, TELLG)

FORMATTED IO

IO FLAGS

IO FUNCTIONS

EXCEPTION HANDLING

TRY

CATCH

THROW