1. Introduction
1. **Basic Input Output**

- Iostream is the header file that allows us to display output and accept input from the console.

- Cout is defined inside the std namespace. To use std namespace we use 'using namespace std'.

- Return 0; is the exit status of the main function.

- Semicolon is the statement terminator.

- End is used to insert a new line.

2. **Variables & Literals**
A variable is a container to hold data.
Int sum = 0;
sum = 20;

Rules for naming variables:
- A variable name can only have alphabets, numbers and underscore.
- A variable name cannot begin with a number.
- However variable name can start with underscore.
- It is preferred to begin variable names with lowercase.
- A variable name cannot be a keyword. (**Keyword** : The collection of words whose meaning is already explained to the compiler. e.g. int, char, double, continue, etc.)
- Always give meaningful names. e.g. For first name use first_name rather than fn.

List of different literals in C++
a. Integers
    a. Decimal (Base 10) 0, -10, 25, etc.
    b. Octal (Base 8 : 0 - 7) 0o21, 0o77, 0o35, etc.

    c.   Hexadecimal (Base 16: 0-9,A,B,C,D,E,F) 0x7F, 0x51B, etc.

b. Floating Point

    -2, 0.0012, 2e-5 = 2 * 10^-5 = 0.00002

c. Character

    'a', 'B', '2', '{', ';'

d. Escape Characters

    \r Carriage Return(CR)
    \n Newline (Line feed) (LF)
    \t Tab

e. String

    "good", "y", "Earth is spherical\n"

f. Constants

    const int LIGHT_SPEED = 3e8;
    LIGHT_SPEED = 4e8; /* Error! As LIGHT_SPEED is
constant.

3. Data Types

Fundamental Data types:

Int :

    2 or 4 bytes (1 byte = 8 bits) Usually 4 bytes
    4 bytes and range is -2147483648 to 2147483647
    1 byte = 8 bits
    4 bytes = 8 * 4 bits = 32 bits
    Leading(left most) bit is preserved for sign
        (0 : Positive number,
        1: Negative number)
    Max signed integer that C++ can support = $2^{31} - 1$ =
2147483647
    int salary = 50000;

Float : 4 bytes
Double : 8 bytes

    Double has two times the precision of float.

float area = 12.34;
        double volume = 1345.678543;
        double distance = 45E15;

Char : 1 byte
        Enclosed within single quotes.
        char ch = 'A';

wchar_t : 2 bytes
        Wide character similar to char but size is 2 bytes.
        Used for supporting universal character set.

Bool : 1 byte
        true or false
        They are generally used in condition statements and loops.
        bool cold = true;
Void : 0
        Nothing or no value
        We will use it for functions and pointers.

Type modifiers:
        signed
        unsigned
        short
        long

        These modifiers can be applied in conjunction with
        int
        double
        char

4. **Type Conversion**
5. **Operators**
6. **Comments**

2. Flow Control

1. If - Else
2. For Loop
3. Do….While loop
4. Break statement
5. Continue statement
6. Switch statement
7. Goto Statement

3. Functions
1. Simple Functions
2. Function Types
3. Function Overloading
4. Default Argument
5. Storage Class
6. Recursion
7. Return reference

4. Array & Strings
1. Arrays
2. Multidimensional Arrays
3. Function & Array
4. String

5. File Input Output
1. Open a file
2. Read from, Write & Append to a file
3. Text vs Binary file
4. OS related commands
5. Advanced File concepts

6. Structures