## Lab materials

1) Write a program that prompts the user for their name and age, and then outputs a message that says "Hello, [name]! You are [age] years old."
2) Write a program that uses a for loop to output the numbers from 1 to 10.
3) Write a program that uses a while loop to output the numbers from 1 to 10.
4) Write a program that uses an array to store 5 integers, and then outputs the sum of those integers.
5) Write a program that defines a function that takes two integers as arguments and returns their sum. then, call that function and output the result.
6) Write a program that define a function that takes two integers and a character as arguments and returns the result of the operation specified by the character. The possible characters are '+', '-', '*', '/'.
7) Write a program that demonstrates function overloading by defining two functions with the same name but different parameter lists. One function should take two integers as arguments and return their sum, and the other function should take three integers as arguments and return their sum. Call both functions in the main () function and print the results.
8) Write a program that defines a function that takes two arguments: an integer and a string. The function should have a default argument for the string, so that if it is not provided when the function is called, the default value "Default String" will be used.
9) Write a program that demonstrates the use of the different storage classes in C++ (local, global, static, and extern). Define a variable with each storage class and print the value of the variable in the main () function.
10) Write a program that defines a function that takes an integer as an argument and returns a pointer to that integer.
11) Write a program that defines a function that takes a string as an argument and returns a reference to that string.
12) Write a program that defines an inline function that takes three integers as arguments and returns the maximum of those integers. Call this function in the main () function and print the result.
13) Define a class Interest with following specifications:

    **a. Data Members**

    i. principal

    ii. time

    iii. rate

**b. Member Functions**

i. getdata() to assign initial values

ii. display () to display values

iii. Findinterest() to find and display the interest

14. Define a class Room with following specifications:

a. **Data Members**

i. length

ii. width

b. **Member Functions**

i. getdata() to assign initial values

ii. display () to display length and width

iii. area () to find and display the area

15. Create a class called Distance with two data members inch and feet. Provide Constructor and different member function with the following operations.
    - **To input data for Distance objects.**
    - **To show the data of Distance objects.**
    - **Member function to add two Distance objects passed as object as function arguments and then display the result**

16. Write a program to demonstrate the objects are destroyed in the reverse order from their creation in the constructor
17. Write a class Complex to represent complex numbers with real and imaginary parts. Define a member function to add two complex numbers. Pass objects of the Complex class to this function and display the result
18. Create a class Counter with a static data member to count the number of objects created. Define a member function to display the count. Create multiple objects of this class and display the count after each creation.
19. Define a class BankAccount with data members for the account number and balance. Implement member functions to deposit and withdraw money, defined outside the class using the scope resolution operator. Create an object and perform some transactions to demonstrate these functions.

20. Write a program for illustrating default constructor, parameterized constructor and copy constructor.
21. WAP to add, private data members of two classes using friend function
22. WAP to swap private data members of two classes using friend function
23. WAP to overload == operator using friend function.
24. WAP to overload unary minus (-) operator to invert sign of data members of a distance object.
25. Create a class called Length that has data members meter and centimeter. Overload + operator to add two objects of class Length. (For example, L3 = L1 + L2)
26. Write a conversion routine in c++ that can convert user-defined data distance to basic data float. Assume that the class distance contains two data members (feet (integer type) and inch (floating point type). NOTE 1-meter = 3.33 feet and 1 feet = 12 inches)
27. Write a program to demonstrate the user-defined to user-defined data conversion routine located in the destination class.