Assignment 1

1. Write a program to declare a pointer, initialise it with the address of a variable, and print the value using both the pointer and the variable. Demonstrate pointer assignment using two integer variables

2. Write a program that explains the concept of a wild pointer and how it can lead to undefined behaviour. Show how initialising a pointer can resolve this issue.

3. Create a program to demonstrate the use of NULL and its importance in pointer initialisation. Write code to check for NULL before dereferencing a pointer.

4. Write code to show the behaviour of pointers with const qualifier in various scenarios:
   i. Pointer to a const value.
   ii. const pointer to a value.
   iii. const pointer to a const value.

5. Write a program demonstrating the difference between const int *ptr, int *const ptr, and const int *const ptr.

6. Create a program that demonstrates how type-casting a const pointer can lead to unexpected behaviour.

7. Write a short program in both C and C++ that declares a structure, initializes it, and prints its members.

8. Create a struct in C++ and add member functions to initialize data members and display their values.

9. Write a program to declare an array of structures to store information about 5 students (e.g., Name, Age, Marks). Allow the user to input details and print the list.

10. Write a C program that uses typedef to define a struct for a 2D point (x, y) and performs operations like distance calculation between two points.

11. Create a C++ program that declares a class with public, private, and protected access specifiers. Demonstrate how access specifiers control access to members.

12. Write a program to create a class called Employee with the data members name, id, and salary. Implement member functions to initialize and display data. Create multiple objects to show how the class works.