Lab Manual: C Programming Refresher

Objective: The objective of this lab session is to refresh your understanding of key concepts in C programming, which will serve as a foundation for learning object-oriented programming using C++.

Lab Exercises:

Exercise 1: Control Structures and Functions

1. Write a C++ program to calculate the factorial of a number using a function.

   // Changes in C++ program compared to C program

   #include <iostream>

   using namespace std;

   int main(){

   printf—--> cout<<"Hello World"<<endl;

   Scanf —---> cin>>my_variable;

   }

Exercise 2: Arrays and Pointers

1. Write a C++ program to find the sum of elements in an array using pointers.

Exercise 3: File Handling

1. Write a C++ program to copy the contents of one file to another.

Exercise 4: Structures

1. Write a C++ program to define a structure representing a student with attributes such as name, roll number, and marks in three subjects.

Exercise 5: Object-Oriented Programming (OOP) Introduction

1. Define a C++ class to model a room with attributes such as length, breadth, and height, and methods to calculate its area and volume.

```cpp
#include <iostream>
using namespace std;

// create a class
```

```
//write main function
```

Lab Assignments:

1. **WAP to calculate the sum, difference and multiplication of two numbers using single function and display the result in main()**
2. **WAP to calculate the area of cube, rectangle, circle using function overloading with at least one default argument.**
3. **WAP to create a dynamic array of size n and calculate the average of that array.**