



K. K. Wagh Institute of Engineering Education and Research, Nashik

(Autonomous from Academic Year 2022-23)

F. Y. B. Tech.

Pattern 2022 Semester: II

FYE221011: Programming in C++

Assignment No. 02

Problem Statement:

Write a C++ Program to Create class DM which stores the value of distances in meters and centimeters. Read values for the class objects and add one object of DM with another object and find greater distance from two objects. Use a friend function to carry out the addition operation. The display should be in the format of meters and centimeters.

Prerequisites:

Hardware Requirement: Desktop Computer / laptop computer.

Software Requirement: Linux Operating System with GCC

Theory:

A **friend function** can be granted special access to private and protected members of a class in C++. They are the non-member functions that can access and manipulate the private and protected members of the class for they are declared as friends.

A friend function can be:

1. **A global function**
2. **A member function of another class**

Syntax of friend function:

Declaration inside a class:

```
class class_name
{
    friend data_type function_name(arguments);
};
```

Definition of the member function (outside of class in global scope:

```
return_type function_name (arguments) {
    // code here with return type
}
```

Characteristics of constructor

- The function is not in the scope of the class to which it has been declared as a friend.
- It cannot be called using the object as it is not in the scope of that class.
- It can be invoked like a normal function without using the object.
- It cannot access the member names directly and has to use an object name and dot membership operator with the member name.
- It can be declared either in the private or the public part.

Conclusion: Hence we have understood how to use friend function, it's characteristics and it's syntax in C++.