Don Bosco Institute of Technology, Kurla(W)
Department of Electronics and Tele-Communication Engineering
ECL304 - Skill Lab: C++ and Java Programming
Sem III
2021-22

Lab Number:	**7**
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Roll No :	**41**

Title:

1. To write a program to demonstrate friend function in C++.
2. To write a program to demonstrate friend class in C++.

Learning Objective:

- Students will be able to implement friend function and friend classes in C++.

Learning Outcome:

- To understand how to use the private members using friend function and friend class.

Course Outcome:

ECL304.6	Percept the Utility and applicability of OOP

Theory:

- Explain in details about access specifiers: public, private and protected.

Public - The members declared as Public are accessible from outside the Class through an object of the class. Protected - The members declared as Protected are accessible from outside the class BUT only in a class derived from it. Private - These members are only accessible from within the class

- Explain about friend function and friend classes in C++.
  A friend function is a function that is specified outside a class but has the ability to access the class members' protected and private data. A friend can be a member's function, function template, or function, or a class or class template, in which case the entire class and all of its members are friends

Algorithm :	**STEP 1: Start the program.** **STEP 2: Declare the class name as Base with data members and member functions.** **STEP 3: The function get() is used to read the 2 inputs from the user.**

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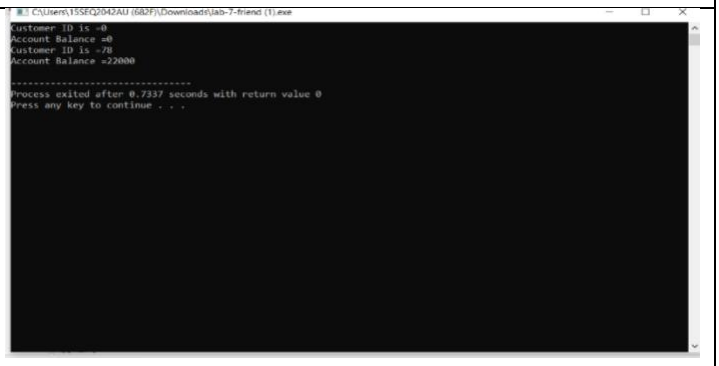
	STEP 4: Declare the friend function mean(base ob) inside the class. **STEP 5: Outside the class to define the friend function and do the following.** **STEP 6: Stop the program**
Program:	**#include<iostream>** **using namespace std;** **class Bank{** **int custID;** **float balance;** **public:** **Bank(){** **custID=0;** **balance=0;** **}** **void displayDetails(){** **cout<<"Customer ID is ="<<custID<<endl<<"Account Balance ="<<balance<<endl;** **}** **friend void insertDetails(Bank &obj);** **};** **void insertDetails(Bank &obj){**

	obj.custID=12453; **obj.balance=60000;** **}** **int main(){** **Bank obj;** **obj.displayDetails();** **insertDetails(obj);** **obj.displayDetails();** **return 0;** **}**
Input given:	**-**
Output Screenshot:	

Algorithm :	**STEP 1: Start the program.**

	STEP 2: Declare the class name as Base with data members and member functions. **STEP 3: The function get() is used to read the 2 inputs from the user.** **STEP 4: Declare the friend function mean(base ob) inside the class.** **STEP 5: Outside the class to define the friend function and do the following.** **STEP 6: Stop the program**
Program:	**#include <iostream>** **class A {** **private:** **int a;** **public:** **A() { a = 55; }** **friend class B;** **};** **class B {** **private:** **int b;** **public:** **void showA (A &x)** **{** **std::cout << "A::a=" << x.a;** **}** **};**

	int main() **{** **A a;** **B b;** **b.showA(a);** **return 0;** **}**
Input given:	**55**
Output Screenshot: