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:	**3**
Student Name:	**Nadhanial Antony**
Roll No :	**16**

Title:

3.1 Write a C++ program for Basic bank Management System

3.2 Write a C++ program to Create a class Student with two method getData() and printData(). getData() to get the value from the user and display the data in printData(). Create the two objects s1 ,s2 to declare and access the values from class StudentTest.

Learning Objective:

- Students will be able to write C++ program for using classes and objects.

Learning Outcome:

- Ability to execute a simple C++ program by accepting and displaying values using functions
- Understanding the classes and objects concept in C++.

Course Outcome:

ECL304.1	Understand object-oriented programming concepts and implement using C++

Theory:

1. Difference between procedural and object oriented language:

Procedural programming uses a list of instructions to tell the computer what to do step-by-step. Procedural programming relies on - you guessed it - procedures, also known as routines or subroutines. A procedure contains a series of computational steps to be carried out. Procedural programming is also referred to as imperative programming. Procedural programming languages are also known as top-down languages.

Object-oriented programming, or **OOP**, is an approach to problem-solving where all computations are carried out using objects. An **object** is a component of a program that

knows how to perform certain actions and how to interact with other elements of the program. Objects are the basic units of object-oriented programming.

2. Application of object orientation:

- User interface design such as windows, menu.
- Real Time Systems
- Simulation and Modeling
- Object oriented databases
- AI and Expert System
- Neural Networks and parallel programming
- Decision support and office automation systems etc.

3. Brief introduction to C++:

C++ (pronounced "see plus plus") is a programming language began as an expanded version of C. The C++ were first invented by Bjarne Stroustrup in 1979 at Bell Laboratories in Murray Hill, New Jersey. Bjarne Stroustrup initially called the new language "C with Classes." However, in 1983 the name was changed to C++. C++ is a middle-level programming language. C++ is a statically typed, compiled, general purpose, case -sensitive, free-form programming language that supports procedural, object-oriented, and generic programming.

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Algorithm 1:	1. Start 2. Define Class BankLab 2 3. Define attributes – Name , account_type , account_number, amount, balance 4. Declare attributes by using constructor of class. 5. Define and declare method – deposit() to deposit the amount 6. Define and declare method – withdraw() to withdraw the amount 7. Define and declare method – display() to display the account details 8. Define Main function() 9. Create object b1, b2, b3 to call the class functionality. 10. Do – while loop to repeat the process.

	11. End

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Program 1:	#include<iostream> using
	namespace std;
	
	class BankLab2 {
	public:
	string name; char
	account_type; int
	account_number,amount; float
	balance;
	
	BankLab2(string n,int a, char t, float
	b) {
	name = n;
	account_number=a;
	account_type=t;
	balance=b;
	}
	
	int deposit()
	{
	cout<<"Enter the amount to deposit: ";
	cin>>amount;
	if(amount<0)
	{
	cout<<"Invalid amount,Enter a valid
	amount";
	return 0;

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```
                }
                balance=balance+amount;
 }              return 1;


int withdra
{


                cout<<"Your Balance= "<<balance;
                cout<<"Enter amount to withdraw: ";
                cin>>amount;


                if (balance<amount)
                {
                                                cout<<"Insufficient
                Balance: ";
                                return 0;
                }


                if(amount<0)
                {
                                        cout<<"Invalid amount";
                                return 0;
 }              }
                balance=balance-amount;
void displa     return 1;
```

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```
        {
        cout<<"Name :"<<name; cout<<"Account
        Number:"<<account_number; cout<<"Account
        Type:"<<account_type; cout<<"Balance:
        "<<balance;
        }
};


  int
main()
  {
        int account_number;
        char ans;


        BankLab2 b1("salman",1,'s',2000);
        BankLab2 b2("makarand",2,'s',2000);
        BankLab2 b3("siddharth",3,'s',2000);


        cout<<"Menu"<<endl;
        cout<<"1.Deposit"<<endl;
        cout<<"2.Withdraw"<<endl;
        cout<<"3.Display"<<endl;
        cout<<"Enter option"<<endl;
```

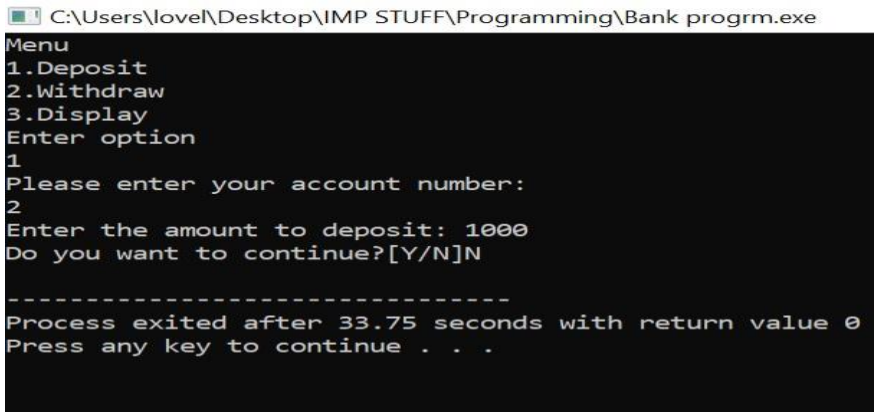
	int op; cin>>op; do {

```
   cout<<"Please enter your account number:"<<endl;
                                                cin>>account_number;



switch(account_number)
                                              {
                                                                case 1:
if(op==1)

 b1.deposit();
                                                          if(op==2)

b1.withdraw();

    if(op==3)

 b1.display();

     break;


                                                                case 2:
if(op==1)

 b2.deposit();
                                                         if(op==2)
                                                           b2.withdraw();
                                                         if(op==3)
                                                        b2.display();


     break;
```

```
                                                    case 3:
if(op==1)

 b3.deposit();

   if(op==2)

b3.withdraw();



   if(op==3)

 b3.display();

     break;
```

	default: cout<<"Enter value between 1 to 3";
	break;
	}
	cout<<"Do you want to continue?[Y/N]";
	cin>>ans;
	if(ans=='Y' || ans == 'y')
	{
	cout<<"Menu";
	cout<<"1.Deposit";
	cout<<"2.Withdraw";
	cout<<"3.Display";
	cout<<"Enter option";
	cin>>op;
	}
	}
	}
	while(ans!='N');

Input given 1:	**Option : 1** **Account number : 2** **Amount to deposit : 1000** **Continue : N**

Output Screenshot 1:	
Algorithm 2:	1. Start 2. Define Class Student 3. Define attributes – Name , Roll_no, cgpa, div , branch 4. Define and declare method – getdata() to get input from user. 5. Define and declare method – printdata() to print the values 6. Define Main function() 7. Create object s1, s2 to call the class functionality. 8. End.

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Program 2:	#include<iostream> using
	namespace std; class
	Student {
	public:
	string name;
	int roll_no;
	float cgpa;
	char div;
	string branch;
	
	void getdata()
	{

```
                                        cout<<"Enter your
name:"<<endl;
                        cin>>name;
                                        cout<<"Enter your roll
number:"<<endl;
                        cin>>roll_no;
                                        cout<<"Enter your
CGPA:"<<endl;
                        cin>>cgpa;
      cout<<"Enter your Division:"<<endl;
                        cin>>div;
                                        cout<<"Enter your
branch:"<<endl;
                        cin>>branch;


                }


                                        void getdata(string n,int r,float
c,char d,string b)
                {
                        name=n;
                        roll_no=r;
                cgpa=c;
                div=d;
                        branch=b;


                }


                        void printdata()
```

```
                    {
                                                cout<<"Name of the student:
"<<name<<endl;
                cout<<"Roll-no of the student: "<<roll_no<<endl;
            cout<<"Cgpa of the student: "<<cgpa<<endl;
```

	cout<<"Division of the student: "<<div<<endl;
	cout<<"Branch of the student: "<<branch<<endl;
	}
	
	};
	
	int main ()
	{
	Student s1;
	Student s2;
	s1.getdata();
	s1.printdata();
	s2.getdata();
	s2.printdata();
	return 0;
	}

Input given 2:	**Name : Lovely** **Roll number : 15** **CGPA : 9.2** **DIV : B** **Branch : EXTC** **Name : Pooja** **Roll number : 35** **CGPA : 9.1** **DIV : B** **Branch : EXTC**

Output Screenshot 2: