Lab Number:	3
Student Name:	**Yash Jitendra Sonavane**
Roll No :	**45**

Learning Objective:

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

Learning Outcome:

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

Course Outcome:

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

Theory:

Explain about Constructor.

Explain about classes and objects in Java

How to access class attributes and methods? Explain with example

Title:

4.1 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.

Algorithm:-

Step 1:- Input name, roll no, cgpa, div, branch.

Step 2:- Enter all the getData() condition for inputs.

Step 3:- give value for getData().

Step 4:-Give the data for printData() to grt outpt.

Step 5:- Output.

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Program:-

```cpp
using namespace std;
class Student
{
public:
string name;
int roll_no;
string div;
float cgpa;
void getdata()
{
cout<<"Enter the name of the student: "<<endl;
cin>>name;
cout<<"Enter the roll-no of the student: "<<endl;
cin>>roll_no;
cout<<"Enter the Division of the student: "<<endl;
cin>>div;
cout<<"Enter the cgpa of the student: "<<endl;
cin>>cgpa;
}
/*int getdata(string n,int r,char d,float c)
{
name=n;
roll_no=r;
div=d;
cgpa=c;
return 0;
}*/
void printdata()
{
cout<<"Name of the student: "<<name<<endl;
cout<<"Roll-no of the student: "<<roll_no<<endl;
cout<<"Division of the student: "<<div<<endl;
cout<<"The cgpa obtained by the student: "<<cgpa<<endl;
}
};
int main()
{
Student StudentTest;
Student s1;
s1.getdata();
s1.printdata();
Student s2;
s2.name="Ram";
s2.roll_no=25;
s2.div="A";
s2.cgpa=8.8;
s2.printdata();
return 0;
}
```

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Input and Output:-

```
Enter your name:
yash
Enter your roll number:
45
Enter your CGPA:
9.32
Enter your Division:
B
Enter your branch:
EXTC
Name of the student: yash
Roll-no of the student: 45
Cgpa of the student: 9.32
Division of the student: B
Branch of the student: EXTC
```

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

Algorithm:-

Step 1:- Input name, account_type,account_number,amount,balance.

Step 2:- Enter for a deposit and all the condition.

Step 3:- Enter for a withdraw and all the condition.

Step 4:- Enter for a display and all the conditions.

Step 5:- Enter the option for yes and no

Step 5:- Output

Program:-

```cpp
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;

        }

        balance=balance+amount;

        return 1;

}


int withdraw()
```

```
        {

                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;

                return 1;

        }


        void display()

        {

        cout<<"Name :"<<name<<endl;

        cout<<"Account Number:"<<account_number<<endl;

    cout<<"Account Type:"<<account_type<<endl;

    cout<<"Balance: "<<balance<<endl;

        }
};
    int main()
    {
```

```cpp
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"<<endl;

    cout<<"1.Deposit"<<endl;

    cout<<"2.Withdraw"<<endl;
```

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```
                cout<<"3.Display"<<endl;

                        cout<<"Enter option"<<endl;

                        cin>>op;

                        }



                }

                while(ans!='N');

        }
```

Input and Output:-

```
Menu
1.Deposit
2.Withdraw
3.Display
Enter option
1
Please enter your account number:
1
Enter the amount to     deposit: 100
Do you want to continue?[Y/N]Y

Menu
1.Deposit
2.Withdraw
3.Display
Enter option
3
Please enter your account number:
1
Your Balance= 2100Enter amount to withdraw: 500
Do you want to continue?[Y/N]N
```