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:	**4**
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Roll No :	**01**

Title:

4.1 Write a Java 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.

4.2 Write a Java program for Basic bank Management System

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:

1)Explain about Constructor.

A constructor initializes an object when it is created. It has the same name as its class and is syntactically similar to a method. However, constructors have no explicit return type.
Typically, you will use a constructor to give initial values to the instance variables defined by the class, or to perform any other start-up procedures required to create a fully formed object.
All classes have constructors, whether you define one or not, because Java automatically provides a default constructor that initializes all member variables to zero. However, once you define your own constructor, the default constructor is no longer used.

2)Explain about classes and objects in Java

Java is an object-oriented programming language.
Everything in Java is associated with classes and objects, along with its attributes and methods. For example: in real life, a car is an object. The car has attributes, such as weight and color, and methods, such as drive and brake.
A Class is like an object constructor, or a "blueprint" for creating objects. To create a class, use the keyword class: In Java, an object is created from a class. We have already created the class named Main, so now we can use this to create objects.
To create an object of Main, specify the class name, followed by the object name, and use the keyword new:

3)How to access class attributes and methods? Explain with example

Class attributes-You can access attributes by creating an object of the class, and by using the dot syntax (.):
The following example will create an object of the Main class, with the name myObj. We use the x attribute on the object to print its value:
Example
Create an object called "myObj" and print the value of x:

```
public class Main {
  int x = 5;

  public static void main(String[] args) {
    Main myObj = new Main();
    System.out.println(myObj.x);
  }
}
```

Methods- methods are declared within a class, and that they are used to perform certain actions:
Example
Inside main, call myMethod():

```
public class Main {
  static void myMethod() {
    System.out.println("Hello World!");
  }

  public static void main(String[] args) {
    myMethod();
  }
}
```

ALGORITHM:
Step1: Start
Step2: Define and Declare Methods : createaccount(),Deposit(),withdraw(),Display().
Step3: In createaccount() read name , mobile number, address , account type, age from the user.
Step4: In Deposit() read amount to be deposited from the user and add it to the balance.

Step5: In withdraw(), read amount to be withdrawn from the user and subtract it from the balance.
Step6: In Display() , show the remaining balance to the user.
Step7: Declare main function.
Step8: In main function use switch cases to display menu.
Step9: Use while loop run all the cases.
Step10:End.

PROGRAM [4.1]:

```
import java.util.Scanner;
    class Student {

        Scanner in=new Scanner(System.in);
        String name;
        int roll_no;
        float cgpa;
        char div;
        String branch;


        void getdata()
        {
           System.out.println("---------------------------------------\nEnter your name:");
           name=in.next();
           System.out.println("Enter your roll number:");
           roll_no=in.nextInt();
           System.out.println("Enter your CGPA:");
           cgpa=in.nextFloat();
           System.out.println("Enter your Division:");
           div=in.next().charAt(0);
           System.out.println("Enter branch:");
           branch=in.nextLine();
           branch=in.nextLine();

        }


        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()
    {
       System.out.println("Name of the student: "+name);
       System.out.println("Roll-no of the student: "+roll_no);
       System.out.println("Cgpa of the student: "+cgpa);
       System.out.println("Division of the student: "+div);
       System.out.println("branch of the student: "+branch);
    }

}
class StudentTest {

    public static void main(String[] args) {

       Student s1=new Student();
       Student s2=new Student();
       s1.getdata();
       s1.printdata();
       s2.getdata();
       s2.printdata();



    }


}
```

OUTPUT [4.1]:

```
"C:\Program Files\Java\jdk-16.0.2\bin\java.exe" "-ja
--------------------------------------
Enter your name:
Abhishek
Enter your roll number:
01
Enter your CGPA:
9.43
Enter your Division:
B
Enter branch:
EXTC
Name of the student: Abhishek
Roll-no of the student: 1
Cgpa of the student: 9.43
Division of the student: B
branch of the student: EXTC
--------------------------------------
Enter your name:
```

PROGRAM [4.2]:

```
 import java.util.*;
public class Lab03 {
    static float bal;



   public static void CreateAccount() {
      Scanner sc = new Scanner(System.in);
      System.out.println("---------Enter Your Details:---------");
      System.out.println("Enter your Full Name: ");
      String name = sc.nextLine();
      System.out.println("Enter Address:");
      String address = sc.nextLine();
      System.out.println("Enter your mobile number:");
      String mobnum = sc.nextLine();
      System.out.println("Enter Your age:");
      String age = sc.nextLine();
      System.out.println("Which type of account you want to create(savings or current)");
      String type = sc.nextLine();
      System.out.println("Your Account is successfully Created!!!!!!");
   }
   public static void deposit(){
      Scanner sc = new Scanner(System.in);
      System.out.print("Enter the amount to deposit: \nRs");
      bal = sc.nextFloat();
      System.out.println("Your amount is successfully deposited!!!!");
   }
   public static void withdraw(){
      Scanner sc = new Scanner(System.in);
      System.out.println("Enter the amount to withdraw: \nRs");
      float withdrawamt = sc.nextFloat();
      if (withdrawamt>bal)
      {
         System.out.println("!!!INSUFFICIENT BALANCE!!!");
      }
      else bal = bal - withdrawamt;
   }


   public static void display(){
      System.out.println("YOUR BALANCE is Rs"+bal);
   }


   public static void main(String[] args) {
```

```
    Scanner sc = new Scanner(System.in);

    while (true) {
      System.out.println("ENTER YOUR CHOICE:\n 1.Create Account\n 2.Deposit\n 3.Withdraw\n
4.Display Balance\n 5.Exit");
      int choice = sc.nextInt();

      switch (choice) {
        case 1:
          CreateAccount();
          break;
        case 2:
          deposit();
          break;
        case 3:
          withdraw();
          break;
        case 4:
          display();
          break;
        case 5:
          System.exit(0);
          break;
        default:
          System.out.println("Enter valid choice!!!!!");
          break;
      }
    }
  }
}
```

OUTPUT [4.2]:

```
ENTER YOUR CHOICE:
 1.Create Account
 2.Deposit
 3.Withdraw
 4.Display Balance
 5.Exit
1
---------Enter Your Details:---------
Enter your Full Name:
ABHISHEK WAGHMARE
Enter Address:
BHANDUP
Enter your mobile number:
1234567890
Enter Your age:
19
Which type of account you want to create(savings or current)
Savings
Your Account is successfully Created!!!!!!
```

```
ENTER YOUR CHOICE:
 1.Create Account
 2.Deposit
 3.Withdraw
 4.Display Balance
 5.Exit
2
Enter the amount to deposit:
Rs1000
Your amount is successfully deposited!!!!
ENTER YOUR CHOICE:
 1.Create Account
 2.Deposit
 3.Withdraw
 4.Display Balance
 5.Exit
4
YOUR BALANCE is Rs1000.0
```

```
ENTER YOUR CHOICE:
 1.Create Account
 2.Deposit
 3.Withdraw
 4.Display Balance
 5.Exit
3
Enter the amount to withdraw:
Rs
523
ENTER YOUR CHOICE:
 1.Create Account
 2.Deposit
 3.Withdraw
 4.Display Balance
 5.Exit
4
YOUR BALANCE is Rs477.0
```

```
ENTER YOUR CHOICE:
 1.Create Account
 2.Deposit
 3.Withdraw
 4.Display Balance
 5.Exit
3
Enter the amount to withdraw:
Rs
1000
!!!INSUFFICIENT BALANCE!!!
ENTER YOUR CHOICE:
 1.Create Account
 2.Deposit
 3.Withdraw
 4.Display Balance
 5.Exit
5

Process finished with exit code 0
```

GITHUB: https://github.com/Abhishek-0809/Skill-Lab-with-OOPM

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