COMSATS UNIVERSITY ISLAMABAD, LAHORE CAMPUS



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Class: Object Oriented Programming

Assignment: Lab Task 2

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**Task 1: Write java code to create the GradeBook class that contains a displayMessage method**

**to displays a message on the screen. You will need to make an object of this class and call its**

**method to execute display the message.**

**Now declare a separate class that contains a main method. The GradeBookTest class declaration**

**will contain the main method that will control your application’s execution.**

**CODE:**

public class Lab2\_Task1 {  
 public static void main(String[] args) {  
 GradeBook gb = new GradeBook();  
 gb.displayMessage();  
 }  
  
}  
class GradeBook{  
  
 public void displayMessage(){  
  
 System.*out*.println("Welcome To BookGrade!!");  
 }  
}

**OUTPUT:**

**Text

Description automatically generated**

**Task 2: Write a class Circle, which will model the functionality of a Circle.**

**1. Attributes**

**> radius**

**2. Methods**

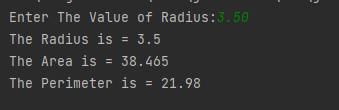
**> calculateArea(): To compute area**

**> calculatePerimeter(): To compute perimeter**

**CODE:**

import java.util.Scanner;  
public class Lab2\_Task2 {  
 public static void main(String[] args) {  
 Circle cr = new Circle();  
 Scanner scn = new Scanner(System.*in*);  
  
 System.*out*.printf("Enter The Value of Radius:");  
 cr.radius = scn.nextFloat();  
  
 System.*out*.println("The Radius is = "+cr.radius);  
 cr.calculateArea();  
 cr.CalculatePari();  
  
 }  
}  
  
class Circle{  
  
 float radius;  
  
 public void calculateArea(){  
 float area;  
 area= (float) (3.14\*radius\*radius);  
 System.*out*.println("The Area is = "+area);  
 }  
 public void CalculatePari(){  
 float peri;  
 peri= (float) (3.14\*2\*radius);  
 System.*out*.println("The Perimeter is = "+peri);  
 }  
  
}

**OUTPUT:**

****

**Task 3: Write a class Rectangle, which will model the functionality of a Rectangle.**

**1. Attributes**

** Length**

** Width**

**2. Methods**

** calculateArea(): To compute area**

** calculatePerimeter(): To compute perimeter**

**CODE:**

import java.util.Scanner;  
  
public class Lab2\_Task3 {  
  
 public static void main(String[] args) {  
  
 Rectangle rec = new Rectangle();  
 Scanner scn = new Scanner(System.*in*);  
  
 System.*out*.printf("Enter The Length :");  
 rec.length = scn.nextInt();  
 System.*out*.printf("Enter The Width :");  
 rec.width = scn.nextInt();  
  
 System.*out*.println("The Length is = "+rec.length);  
 System.*out*.println("The Width is = "+rec.width);  
  
 rec.calculateArea();  
 rec.CalculatePari();  
  
 }  
}  
  
class Rectangle{  
  
 int length,width;  
  
 public void calculateArea(){  
 float area;  
 area= (float) (length\*width);  
 System.*out*.println("The Area is = "+area);  
 }  
 public void CalculatePari(){  
 float peri;  
 peri= (float) (length+length+width+width);  
 System.*out*.println("The Perimeter is = "+peri);  
 }  
  
}

**OUTPUT:**

**Graphical user interface, text

Description automatically generated**

**Task 4: Make BankAccount class with balance and name attributes of type double and String.**

**Define public void deposit(double amount) and public void withdraw(double**

**amount) methods. Deposit should increase the balance by passed value and withdraw should**

**decrease the balance with passed amount.**

**Make BankAccountTest class. In main method, create a new object of BankAccount class. Get**

**balance and name of account holder from user input and initilize both object attributes. Then**

**show this menu:**

**Press 1: To Deposit an amount**

**Press 2: To Withdraw an amount**

**Press 3: To View the current balance**

**If user press 1: show following:**

**Enter the amount you want to desposit in your account &gt;**

**For example. If user enters 500, call the desposit method of BankAccount object and pass 500 to**

**it. Do it for option 2 but call the withdraw method. If user choose 3 from menu, print the current**

**balance.**

**CODE:**

import java.util.Scanner;  
  
public class Lab2\_Task4 {  
 public static void main(String[] args) {  
  
 BankAccount bnkacc = new BankAccount();  
 Scanner input = new Scanner(System.*in*);  
  
 System.*out*.print("Enter The Name of BankAccount Holder:");  
 bnkacc.Name = input.nextLine();  
 System.*out*.print("Enter The Balance of BankAccount Holder:");  
 bnkacc.Balance = input.nextInt();  
  
  
 while(true) {  
 //MENU  
 System.*out*.print("Press 1: To Deposit an amount\n" +  
 "Press 2: To Withdraw an amount\n" +  
 "Press 3: To View the current balance\n");  
 int choice = input.nextInt();  
  
 if (choice == 1) {  
 System.*out*.print("Enter Amount You Want to Deposit ");  
 double dep = input.nextInt();  
  
 bnkacc.deposit(dep);  
 System.*out*.println("Deposit Done!");  
 }  
 else if (choice == 2) {  
 System.*out*.print("Enter Amount You Want to Withdraw ");  
 double wdraw = input.nextInt();  
  
 if (bnkacc.checkBalance() >= wdraw){  
  
 bnkacc.withdraw(wdraw);  
 System.*out*.println("Cash WithDraw Done!\n");  
 }  
 else {  
 System.*out*.println("Balance is Low!!\n");  
 }  
  
 } else if (choice == 3) {  
  
 System.*out*.println("Total Balance is " + bnkacc.checkBalance()+"\n");  
  
 }  
  
 }  
  
 }  
}  
class BankAccount{  
 double Balance;  
 String Name;  
  
 public double checkBalance() {  
 return Balance;  
 }  
  
 public void deposit(double amount) {  
 Balance += amount;  
 }  
  
 public void withdraw(double amount) {  
 Balance -= amount;  
 }  
  
}

**OUTPUT:**

**Text

Description automatically generated**

**Text

Description automatically generated**