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| --- | --- |
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| Roll Number | 21SW085 |
| Section # | 3rd or III |
| Lab # | 2nd – Objects Implementation |

**Task#01**

**Code:**

public  class Task1\_Rectangle{

        int length =1;

        int width=1;

        public int getLength() {

            return length;

        }

        public int getWidth() {

            return width;

        }

        public void setLength(int length) {

            this.length = length;

            if (length > 0.0&& width<20.0) {

                this.length = length;

            }

            else {

                System.out.println("Enter the correct value" );

            }

        }

        public void setWidth(int width) {

            if (width > 0.0&& width<20.0) {

                this.width = width;

            }

            else {

                System.out.println("Enter the correct value" );

            }

        }

        public int perimeter(int  length, int width){

            return 2\*length\*width;

        }

        public int area(int  length, int width){

            return(length\*width);

        }

        public static void main(String[] args) {

            Task1\_Rectangle r = new Task1\_Rectangle();

            System.out.println( "the area of rectangle is "+r.area(10,10));

            System.out.println("the perimeter of rectangle is "+r.perimeter(10,10));

        }

    }

**Output:**

**Text

Description automatically generated**

**Task 02:**

**Code:**

class Task2\_Employee{

    char firstName;

    String lastName;

    int monthlySalary;

    public void setDetails(char firstName,String lastName,int monthlySalary){

        this.firstName=firstName;

        this.lastName=lastName;

        this.monthlySalary=monthlySalary;

        if(monthlySalary<0){

            monthlySalary=0;

        }

    }

    public void showDetails(){

        System.out.println("First Name: "+ firstName);

        System.out.println("Last Name: "+lastName);

        System.out.println("Monthly Salary: "+monthlySalary);

    }

    public int YearlySalary(){

        return (monthlySalary\*12);

    }

    public double increasedSalary(){

        double inc=(0.1)\*monthlySalary;

        monthlySalary+=inc;

        return (monthlySalary\*12);

    }

    public static void main(String[] args) {

        Task2\_Employee e1= new Task2\_Employee();

        Task2\_Employee e2= new Task2\_Employee();

        e1.setDetails('U', "zair", 2500);

        e2.setDetails('A', "bbas",3200);

        System.out.println("Yearly Salary for e1 is : "+e1.YearlySalary());

        System.out.println("Yearly Salary for e2 is : "+e2.YearlySalary());

        System.out.println("Salary of e1 after increment is: "+e1.increasedSalary());

        System.out.println("Salary of e2 after increment is: "+e2.increasedSalary());

    }

}

**Output:**

**Text

Description automatically generated**

**Task 3:**

**Code:**

public class Task3\_Invoice {

    String part\_number;

    String part\_description;

    int quantity\_item\_purchased;

    float ItemPrice;

    public void setDetails(String p,String pd,int t,float price) {

        part\_number=p;

        part\_description=pd;

        quantity\_item\_purchased=t;

        ItemPrice=price;

    }

    public String getPartNumb() {

        return part\_number;

    }

    public String getPartDesc() {

        return part\_description;

    }

    public int getItemPurchased(){

        return quantity\_item\_purchased;

    }

    public float getItemPrice(){

        return ItemPrice;

    }

    public float getInvoiceAmount(){

        if(ItemPrice<0 && quantity\_item\_purchased<0){

            ItemPrice=0;

            quantity\_item\_purchased=0;

        }

        return (ItemPrice\*quantity\_item\_purchased);

    }

    public static void main(String[] args) {

        Task3\_Invoice first=new Task3\_Invoice();

        first.setDetails("AE32", "Grinder", 5, 23000);

        System.out.println("Part Number: "+first.getPartNumb());

        System.out.println("Part Description: "+first.getPartDesc());

        System.out.println("Item Quantity: "+first.getItemPurchased());

        System.out.println("Item Price: "+first.getItemPrice());

        System.out.println("Invoice amount = "+first.getInvoiceAmount());

    }

}

**Output:**

**Text

Description automatically generated**

**Task 4:**

**Code:**

public class Task4\_HittingGame {

  public static void Hits(){

      // Algorithms for Random number generation between minValue and maxValue is

      //  (int)(Math.random() \* (maxValue - minValue) + 1) + minValue;

      int playerHits = 0, enemyHits = 0, totalHits = 1;

      int numberOfPlayers = (int)(Math.random() \* (10 - 1) + 1) + 1; // Generate random number between 1 and 10

      System.out.println("Total number of pairs in your team is "+numberOfPlayers);

      while (totalHits<=numberOfPlayers){

          System.out.println("Pair of Numbers:");

          int num1 = (int)(Math.random() \* 3);            // Generates random number between 0 and 3

          int num2 = (int)(Math.random() \* 3);            // Generates random number between 0 and 3

          System.out.println("Number1: "+num1);

          System.out.println("Number2: "+num2);

          if (num1==num2){

              System.out.println("Enemy got hit by your");

              playerHits++;

          } else {

              System.out.println("You got hit by the enemy team!");

              enemyHits++;

          }

          totalHits++;

      }

      if (playerHits>enemyHits){      /// checking hits player vs enemy

          System.out.println("Game Over! You Won");

      } else if (playerHits<enemyHits){

          System.out.println("Game Over! You Lost");

      } else if (playerHits==enemyHits){

          System.out.println("Game Over! It's a tie");

      }

  }

  public static void main(String[] args) {

      Hits();

  }     // end of main() method

}        //  end of program

**Output:**

**Text

Description automatically generated**

**Task 5:**

**Code:**

import java.util.Scanner;

class Task5\_CoffeShop{

    double coffeePrice=5.50;

    double small\_p=0.60,medium\_p=1.00,large\_p=1.80;

    int small\_c=5,medium\_c=10,large\_c=20;

    int bags\_order;

    int small=1,medium=1,large=2;

    double Total\_Cost=0;

    Task5\_CoffeShop(int numberbags){

        bags\_order=numberbags;

    }

    public void Total\_Cost(){

        Total\_Cost=(((large\*large\_p)+(medium\*medium\_p)+(small\*small\_p))+(bags\_order\*coffeePrice));

        System.out.println("Total Cost will be: "+ Total\_Cost);

    }

    public static void main(String[] args) {

        Scanner s = new Scanner(System.in);

        System.out.print("Enter number of coffee bags: ");

        int num=s.nextInt();

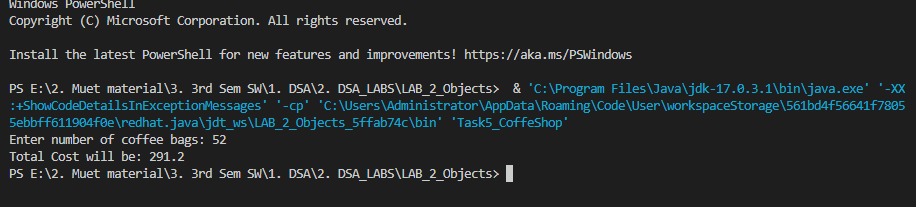
        Task5\_CoffeShop c=new Task5\_CoffeShop(num);

        c.Total\_Cost();

    }

}

**Output:**

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**Task 6:**

**Code:**

public class Task6\_Vehicle {

    public int check(int wheels) {

        if (wheels == 2) {

            System.out.println("the vehicle is bike");

        } else if (wheels == 3) {

            System.out.println("the vehicle is rikshaw");

        } else System.out.println("Enter correct");

        return wheels;

    }

    int speed;

    public void setSpeed(int speed) {

        this.speed = speed;

    }

    int year;

    String manufacture;

    public int accelerate(int speed) {

        for (int i = 1; i <= 5; i++) {

            speed += 5;

            System.out.println("The accelerate is now " + speed);

        }

        return speed;

    }

    public int brake() {

        for (int i = 1; i <= 5; i++) {

            speed -= 5;

            System.out.println("The brake is now " + speed);

        }

        return 0;

    }

    public static void main(String[] args) {

        Task6\_Vehicle v = new Task6\_Vehicle();

        System.out.println(v.accelerate(30));

        System.out.println(v.check(4));

    }

}

**Output:**

**Text

Description automatically generated**

**The End!**