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| File:COMSATS new logo.jpg - Wikimedia Commons  OBJECT ORIENTED PROGRAMMING  *Lab Task 04*  *GET AND SET METHODS* | **submitted by:**  **Shahzaneer Ahmed**  **registration number:**  **sp21-bcs-087**  **submitted to:**  **mA’M sANEEHA aMIR**  **date of submission:**  **mARCH 07, 2022** |

Question 1

# ProgramClass

public class Rectangle{

*private* int length;

*private* int width;

*public* void setLength(int l){

*if*(l>0){

            length = l;

        }

    }

*public* void setWidth(int w){

*if*(w>0){

            width = w;

        }

    }

*public* int getLength(){

*return* length;

    }

*public* int getWidth(){

*return* width;

    }

*public* Rectangle(){

    }

*public* Rectangle(int l ,int w){

*if*(l>0 && w>0){

            length = l;

            width= w;

        }

*else*{

*// default state -->*

        }

    }

*public* double CalculateArea(){

        double area = length\*width;

*return* area;

    }

}

# RunnerClass

public class Runner {

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

        Rectangle r1 = *new* Rectangle();

        r1.setLength(2);

        r1.setWidth(4);

        System.out.println(r1.getLength());

*// double area = r1.CalculateArea();*

*// System.out.println(area);*

        Rectangle r2 = *new* Rectangle(-4, -6);

        System.out.println(r2.getLength());

*if*(r1.getLength() > r2.getLength()) System.out.println("R1's length is greater");

*else* *if* (r1.getLength() == r2.getLength()) System.out.println("Both are of same Length");

*else* System.out.println("R2's length is greater");

    }

}

Question 2

# ProgramClass

public class Point {

*private* int x;

*private* int y;

*public* void setX(int x){

        this.x = x;

    }

*public* void setY(int y){

        this.y = y;

    }

*public* int getX(){

*return* x;

    }

*public* int getY(){

*return* y;

    }

*public* Point(){

    }

*public* Point(int x , int y){

        this.x = x;

        this.y = y;

    }

*public* void move(){

        System.out.println("The Point is Moving. . .");

    }

}

# RunnerClass

public class PointRunner {

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

        Point p1 = *new* Point();

        p1.setX(3);

        p1.setY(7);

        Point p2 = *new* Point(2,4);

        p2.setY(p1.getX());

        System.out.println("The point of p1 is "+p1.getX());

        System.out.println("The point of p2 is "+p2.getY());

    }

}

Question 3

# ProgramClass

public class Account {

*private* double balance;

*public* void setBalance(double balance){

*if*(balance>=0){

            this.balance = balance;

        }

    }

*public* double getBalance(){

*return* balance;

    }

*public* Account(){

    }

*public* Account(double balance){

*if*(balance>=0){

            this.balance = balance;

        }

    }

*public* double withdrawMoney( double withdrawingMoney){

*if*(withdrawingMoney>=0 && (balance>=withdrawingMoney)){

            System.out.println("The current Balance after withdrawal is "+(balance-withdrawingMoney));

            balance = balance - withdrawingMoney;

*return* withdrawingMoney;

        }

        System.out.println("The withdrawal amount cannot be negative or greater than the balance");

*return* 0;

    }

*public* double depositMoney(double depositAmount){

*if*(depositAmount>0){

            System.out.println("The current Balance after Deposit is "+(balance+depositAmount));

            balance = balance + depositAmount;

*return* depositAmount;

        }

        System.out.println("The deposited amount cannot be negative");

*return* 0;

    }

}

# RunnerClass

public class AccountRunner {

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

        Account a1 = *new* Account(500);

        Account a2 = *new* Account(a1.getBalance());

*// System.out.println(a1.depositMoney(-888));*

        System.out.println(a1.getBalance());

        System.out.println(a2.getBalance());

    }

}

Question 4

# ProgramClass

public class Student {

*private* String name;

*private* int [] Result = *new* int [5];

*public* void setName(String name){

        this.name = name;

    }

*public* void setResult(int [] result){

*for*(int i=0;i<5;i++){

*if*(Result[i]>=0){

                this.Result[i] = result[i];

            }

        }

    }

*public* String getName(){

*return* name;

    }

*public* int [] getResult(){

*return* Result;

    }

*public* Student(){

    }

*public* Student(String name , int [] result){

        this.name = name;

*for*(int i=0;i<5;i++){

            this.Result[i] = result[i];

        }

    }

*public* double CalculateAverage(){

        double sum = 0;

*for*(int i=0;i<5;i++){

            sum+=Result[i];

        }

        double average = sum/5;

*return* average;

    }

}

# RunnerClass

public class StudentRunner {

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

        Student s1 = *new* Student();

        Student s2 = *new* Student("Noor Ul huda", *new* int [] {10,22,10,30,40});

        s1.setName("Shahzaneer Ahmed");

        s1.setResult(*new* int [] {20,30,10,40,10});

        System.out.println(s1.CalculateAverage());

        System.out.println(s2.CalculateAverage());

        Student s3 = *new* Student(s1.getName(),s2.getResult());

        System.out.println(s3.getName());

        System.out.println(s3.CalculateAverage());

    }

}

Question 5

# ProgramClass

public class Marks {

*private* int marks1,marks2,marks3;

*public* Marks(){}

*public* Marks(int m1,int m2, int m3){

*if*(m1>0)

        marks1 = m1;

*if*(m2>0)

        marks2 = m2;

*if*(m3>0)

        marks3 = m3;

    }

*public* void setMarks1(int m1){

*if*(m1>=0){

            marks1 = m1;

        }

    }

*public* void setMarks2(int m2){

*if*(m2>=0){

            marks2 = m2;

        }

    }

*public* void setMarks3(int m3){

*if*(m3>=0){

            marks3 = m3;

        }

    }

*public* int getMarks1(){

*return* marks1;

    }

*public* int getMarks2(){

*return* marks2;

    }

*public* int getMarks3(){

*return* marks3;

    }

*public* double procate(){

        double sum = 0;

        sum=marks1+marks2+marks3;

*return* sum;

    }

*public* double getPercentage(){

        double sum = procate();

        double percentage = (sum/300)\*100;

*return* percentage;

    }

}

# RunnerClass

public class MarksRunner {

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

        Marks s1 = *new* Marks(80,70,90);

        Marks s2 = *new* Marks(50,60,87);

        System.out.println("The percantage of s1 is "+s1.getPercentage());

        System.out.println("The percantage of s2 is "+s2.getPercentage());

        System.out.println("The marks of 1st subject of s1 is "+s1.getMarks1());

        System.out.println("The marks of 1st subject of s2 is "+s2.getMarks1());

    }

}