**Main Method():**

import java.util.\*;

import java.lang.\*;

import java.util.Arrays;

public class runner{

        public static void main(String[] args){

Scanner input = new Scanner(System.in);

// rectangle class

rectangle r1 = new rectangle();

rectangle r2 = new rectangle(4, 5);

r1.setLength(25);

if(r1.getLength() > r2.getLength()){

System.out.println("Object 1 has greater length");

}

else{

System.out.println("Object 2 has greater length");

}

System.out.println();

// Point class

point p1 = new point();

point p2 = new point(4, 5);

p1.setY(5);

p2.setY(p1.getY());

System.out.println(p2.getY());

// student class

int[] array = {45, 46, 47, 48, 49};

int[] array\_2 = {50, 51, 52, 53, 54, 55};

student s1 = new student("Sam", array);

student s2 = new student("Hafif", array\_2);

student s3 = new student("Sam", array\_2);

s1.display();

s2.display();

s3.display();

// account class

account a1 = new account(25000);

account a2 = new account(25000);

a1.display();

a1.deposit(5000);

a1.display();

a1.withdraw(500);

a1.display();

a2.display();

// Marks class

marks m1 = new marks(45, 55, 65);

marks m2 = new marks(78, 54, 98);

if(m1.calculatePercentage(300) > m2.calculatePercentage(300)){

System.out.println("M1 has gotten more grades");

m1.display();

}

else{

System.out.println("M2 has gotten more grades");

m2.display();

}

if(m1.getMark1() > m2.getMark1()){

System.out.println("M1 has gotten more grades in subject 1");

System.out.println(m1.getMark1());

}

else{

System.out.println("M2 has gotten more grades in subject 1");

System.out.println(m2.getMark1());

}

}

**Question1:**

class rectangle{

private int length;

private int width;

// default constructor

public rectangle(){

}

// argument constructor

public rectangle(int val\_length, int val\_width){

// length check

if(val\_length > 0){

this.length = val\_length;

}

else{

System.out.println("Add the right length!");

}

// width check

if(val\_width > 0){

this.width = val\_width;

}

else{

System.out.println("Add the right width!");

}

}

// setters

public void setLength(int val\_length){

if(val\_length > 0){

length = val\_length;

}

else{

System.out.println("Add the right length!");

}

}

public void setWidth(int val\_width){

if(val\_width > 0){

width = val\_width;

}

else{

System.out.println("Add the right width!");

}

}

// getters

public int getLength(){

return length;

}

public int getWidth(){

return width;

}

public void display(){

System.out.println("-------------------\nThe rectangle has a length of: " + length);

System.out.println("The rectangle has a width of: " + width);

}

public void area(){

int area = length \* width;

System.out.println("The rectangle has an area of: " + area);

}

}

**Question2:**

class point{

private int x;

private int y;

// default constructor

public point(){

}

// argument constructor

public point(int val\_x, int val\_y){

this.x = val\_x;

this.y = val\_y;

}

// setters

public void setX(int val\_x){

x = val\_x;

}

public void setY(int val\_y){

y = val\_y;

}

// getters

public int getX(){

return x;

}

public int getY(){

return y;

}

public void display(){

System.out.println("-------------------\nThe point is at x: " + x);

System.out.println("The point is at y: " + y);

}

public void move(int x\_axis, int y\_axis){

x += x\_axis;

y += y\_axis;

System.out.println("The rectangle has now at x: " + x\_axis + " and y: " + y\_axis);

}

}

**Question3:**

class student{

private String name;

private int[] result\_array = new int[5];

// default constructor

public student(){

}

// argument constructor

public student(String student\_name, int[] grades\_array){

this.name = student\_name;

if(grades\_array.length <= 5){

for(int i = 0; i < grades\_array.length; i++){

result\_array[i] = grades\_array[i];

}

}

else{

for(int i = 0; i < result\_array.length; i++){

result\_array[i] = grades\_array[i];

}

}

}

// setters

public void setName(String student\_name){

name = student\_name;

}

public void setArray(int[] grades\_array){

if(grades\_array.length <= 5){

for(int i = 0; i < grades\_array.length; i++){

result\_array[i] = grades\_array[i];

}

}

else{

for(int i = 0; i < result\_array.length; i++){

result\_array[i] = grades\_array[i];

}

}

}

// getters

public String getName(){

return name;

}

public int[] getArray(){

return result\_array;

}

public int average(){

int sum = 0;

int average = 0;

for(int i = 0; i < result\_array.length; i++){

sum += result\_array[i];

}

average = sum/result\_array.length;

return average;

}

public void display(){

System.out.println("-------------------\nThe name of the student is: " + name);

System.out.println("Grades of student are: ");

for(int i = 0; i < result\_array.length; i++){

if(result\_array[i] != 0){

System.out.println(result\_array[i]);

}

}

}

}

**Question 4:**

class account{

private int balance;

// default constructor

public account(){

}

// argument constructor

public account(int money){

if(money > 0){

this.balance = money;

}

}

// setters

public void setBalance(int money){

if(money > 0){

this.balance = money;

}

}

// getters

public int getBalance(){

return balance;

}

public int deposit(int add\_money){

if(add\_money > 0){

balance += add\_money;

}

return balance;

}

public int withdraw(int take\_money){

if(take\_money <= balance){

balance -= take\_money;

}

return balance;

}

public void display(){

System.out.println("-------------------\nYour Current Balance is: " + balance);

}

}

**Question 5:**

class marks{

private int mark\_1;

private int mark\_2;

private int mark\_3;

// default constructor

public marks(){

}

// argument constructor

public marks(int grades\_1, int grades\_2, int grades\_3){

if(grades\_1 > 0 && grades\_2 > 0 && grades\_3 > 0){

this.mark\_1 = grades\_1;

this.mark\_2 = grades\_2;

this.mark\_3 = grades\_3;

}

}

// setters

public void setMark1(int grades\_1){

if(grades\_1 > 0){

mark\_1 = grades\_1;

}

}

public void setMark2(int grades\_2){

if(grades\_2 > 0){

mark\_2 = grades\_2;

}

}

public void setMark3(int grades\_3){

if(grades\_3 > 0){

mark\_3 = grades\_3;

}

}

// getters

public int getMark1(){

return mark\_1;

}

public int getMark2(){

return mark\_2;

}

public int getMark3(){

return mark\_3;

}

// methods

private int calculateTotalMarks(){

return mark\_1 + mark\_2 + mark\_3;

}

public double calculatePercentage(int total\_marks){

double percentage = (calculateTotalMarks() / total\_marks) \* 100;

return percentage;

}

public void display(){

System.out.println("-------------------\nGrades in subject 1 is: " + mark\_1);

System.out.println("Grades in subject 2 is: " + mark\_2);

System.out.println("Grades in subject 3 is: " + mark\_3);

}

}