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| File:COMSATS new logo.jpg - Wikimedia Commons | **Subject:**  **Object Oriented Programming**  **submitted by:**  **Daoud hussain**  (Sp21-bcs-102)  **submitted to:**  **Mam Saneeha AAmir**  **date of submission:**  **March 07 , 2022** |

Rectangle Class:

public class Rectangle{

private int length,width;

public Rectangle(){

//Default Argument Constructor

}

public Rectangle(int l, int w){

//Default Argument Constructor

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

length = l;

width = w;

}

}

public void setLength(int l){

//Default Argument Constructor

if(l>0){

length = l;

}

}

public void setWidth(int w){

//Default Argument Constructor

if(w>0){

width = w;

}

}

public int getLength(){

return length;

}

public int getWidth(){

return width;

}

public int calculateArea(){

return length\*width;

}

public void display(){

System.out.print("Length: "+ length + " Width" + width);

}

}

Runner Rectangle:

public class Runner{

public static void main(String[] args) {

Rectangle a1 = new Rectangle(); //Setting default values

a1.getLength();

Rectangle a2 = new Rectangle (15,25); //2 Argument constructor

a2.setLength(17);

a2.setWidth(20);

a2.getLength();

a2.getWidth();

a2.calculateArea();

if(a1.getLength() > a2.getLength()){

System.out.print(a1.getLength());

}

else if(a1.getLength() < a2.getLength()){

System.out.print(a2.getLength());

}

else{

a1.getLength();

}

}

}

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Point Class:

public class Point{

private int x,y;

public Point(){

//Default Argument Constructor

}

public Point(int x, int y){

//Default Argument Constructor

if(x>0 && y>0){

x = x;

y = y;

}

}

public void setX(int h){

//Default Argument Constructor

if(h>0){

x = h;

}

}

public void setY(int v){

//Default Argument Constructor

if(v>0){

y = v;

}

}

public int getX(){

return x;

}

public int getY(){

return y;

}

//Moving point x

public int movePointX(int abc){

if(abc>0){

x = x+abc;

}

return x;

}

public void display(){

System.out.print("X: "+ x + " Y: " + y);

}

}

Point Runner:

public class Runner{

public static void main(String[] args) {

Point a1 = new Point(); //Setting default values

Point a2 = new Point(15,25); //2 Argument constructor

a2.setX(17);

a2.setY(a1.getX());

a2.getX();

a2.getY();

a2.movePointX(12);

a2.display();

}

}

----------------------------------------

Student Class:

public class Student{

private String name;

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

public Student(){

}

public Student(String n , int[] temp\_Array){

//Argument Constructor

if(n!=""){

name = n;

}

if(temp\_Array.length > result\_Array.length){

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

result\_Array[i] = temp\_Array[i];

}

}

else if(temp\_Array.length < result\_Array.length){

for(int i=0; i<temp\_Array.length; i++){

result\_Array[i] = temp\_Array[i];

}

}

else{

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

result\_Array[i] = temp\_Array[i];

}

}

}

public void setName(String n){

//Default Argument Constructor

if(n!=""){

name = n;

}

}

public void setMarks(int[] temp\_Array){

if(temp\_Array.length > result\_Array.length){

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

result\_Array[i] = temp\_Array[i];

}

}

else if(temp\_Array.length < result\_Array.length){

for(int i=0; i<temp\_Array.length; i++){

result\_Array[i] = temp\_Array[i];

}

}

else{

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

result\_Array[i] = temp\_Array[i];

}

}

}

public String getName(){

return name;

}

public int[] getMarks(){

return result\_Array;

}

//Moving point x

public int calculateAverage(){

int sum=0;

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

sum = sum+result\_Array[i];

}

return sum/result\_Array.length;

}

public void display(){

System.out.println("NAME: "+ name);

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

System.out.print(result\_Array[i] + " ");

}

}

}

Student Runner:

public class Runner{

public static void main(String[] args) {

int[] arr = {40,23,45,23,50};

Student a1 = new Student(); //Setting default values

a1.calculateAverage();

Student a2 = new Student("Ahmed",arr); //2 Argument constructor

a2.calculateAverage();

a2.setName("Daoud");

a2.setMarks(arr);

Student a3 = new Student(a1.getName(), a2.getMarks()); //2 Argument constructor

a3.display();

}

}

----------------------------------------

Account Class:

public class Account{

private int balance;

public Account(){

}

public Account(int b){

//Argument Constructor

if(b>0){

balance = b;

}

}

public void setBalance(int b){

//Default Argument Constructor

if(b>0){

balance = b;

}

}

public int getBalance(){

return balance;

}

//Moving point x

public int depositBalance(int b){

if(b>0){

balance = balance+b;

}

return balance;

}

public int withdrawBalance(int b){

if(b>0){

balance = balance-b;

}

return balance;

}

}

Account Runner:

public class Runner{

public static void main(String[] args) {

Account a1 = new Account(25000);

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

a2.depositBalance(5000);

a2.withdrawBalance(10000);

}

}

----------------------------------------

MArks Class:

public class Marks{

private int m1,m2,m3;

public Marks(){

}

public Marks(int a,int b,int c){

//Argument Constructor

if(a>0 && b>0 && c>0){

m1 = a;

m2 = b;

m3 = c;

}

}

public void setM1(int b){

if(b>0){

m1 = b;

}

}

public void setM2(int b){

if(b>0){

m2 = b;

}

}

public void setM3(int b){

if(b>0){

m1 = b;

}

}

public int getM1(){

return m1;

}

public int getM2(){

return m2;

}

public int getM3(){

return m3;

}

//Moving point x

public int calculateTotalMarks(){

return m1+m2+m3;

}

public int calculatePercentage(){

return (calculateTotalMarks()\*100)/300;

}

public void display(){

System.out.println("Marks 1: "+ m1 + " Marks 2: "+ m2 + " Marks 3: "+ m3);

}

}

Marks Runner:

public class Runner{

public static void main(String[] args) {

Marks a1 = new Marks(70,80,90);

Marks a2 = new Marks(90,85,89);

if(a1.getM1() > a2.getM2()){

System.out.println("Marks of First student are greater");

}

else if(a1.getM1() < a2.getM2()){

System.out.println("Marks of Second student are greater");

}

else{

System.out.println("Both Student marks are equal");

}

if(a1.calculatePercentage() > a2.calculatePercentage()){

System.out.println("Percentage of First student are greater");

}

else if(a1.calculatePercentage() < a2.calculatePercentage()){

System.out.println("Percentage of Second student are greater");

}

else{

System.out.println("Both Student Percentage are equal");

}

}

}

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