**LAB # 03**

**Task # 01:** Write a program to display the radius and color of a circle in Java. Use private Access modifiers for member variables of circle class and accessor and mutator methods to get and set the member values.

**Solution:**

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

// TODO code application logic here

Scanner input=new Scanner(System.in);

Circle cs=new Circle();

System.out.print("Enter the colour of Circle: ");

String colour=input.next();

System.out.print("Enter the radius of Circle: ");

int radius=input.nextInt();

cs.setcolour(colour);

cs.setradius(radius);

System.out.println("-----------------------------");

cs.Display();

System.out.println("-----------------------------");

}

**public class Circle** {

private String colour;

private int radius;

void setcolour(String colour){

this.colour=colour;

}

void setradius(int radius){

this.radius=radius;

}

String getcolour(){

return colour;

}

int getradius(){

return radius;

}

public void Display(){

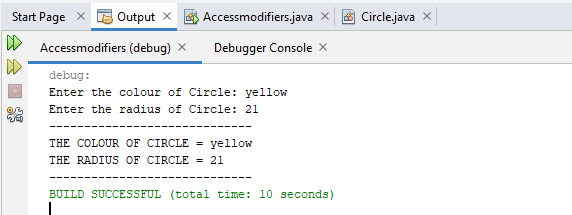
System.out.println("THE COLOUR OF CIRCLE = "+colour);

System.out.println("THE RADIUS OF CIRCLE = "+ radius);

}

}

**Output:**



**Task # 02:** Create a class sphere and use getters and setters to set its radius and height. Also calculate surface area and volume of the sphere.

**Solution:**

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

// TODO code application logic here

Scanner input=new Scanner(System.in);

Sphere cs=new Sphere();

System.out.print("Enter the height Sphere: ");

int height=input.nextInt();

System.out.print("Enter the radius of sphere: ");

int radius=input.nextInt();

cs.setheight(height);

cs.setradius(radius);

System.out.println("-----------------------------");

cs.Display();

System.out.println("-----------------------------");

}

**public class Sphere** {

private int height;

private int radius;

void setheight(int height){

this.height=height;

}

void setradius(int radius){

this.radius=radius;

}

int getheight(){

return height;

}

int getradius(){

return radius;

}

Double surfacearea(){

return 4\* Math.PI\*radius\*radius;

}

Double volume(){

return (4\* Math.PI\*radius\*radius\*radius)/3;

}

public void Display(){

System.out.println("THE HEIGHT OF Sphere = "+getheight());

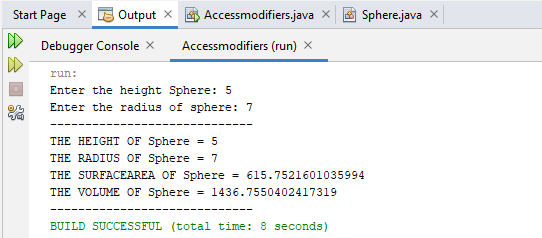
System.out.println("THE RADIUS OF Sphere = "+ getradius());

System.out.println("THE SURFACEAREA OF Sphere = "+ surfacearea());

System.out.println("THE VOLUME OF Sphere = "+ volume());

}

**Output:**



**Task # 03:** Consider a computer system whose name, type, processor specification, ram, hard disk drives, mother board, optical drive etc are its member variables and its desired values cannot be accessed directly. They are entered by the user in a get method (that takes information from the user) and the displays the inputted information via display method. The user shall be asked to change any of the provided information if he/she agrees to change the information then new values shall be asked from the user.

**Solution:**

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

Scanner sc = new Scanner(System.in);

Computer obj = new Computer();

int x = 0;

char r;

do {

System.out.println("Please Choose from Below");

System.out.println("1) Input");

System.out.println("2) Display");

System.out.println("3) Update");

System.out.println("4) EXIT");

System.out.print("Enter : ");

x = sc.nextInt();

switch (x) {

case 1: obj.setcomputer();

System.out.println("------------------DISPLAY------------------------");

obj.GetComputer();

break;

case 2: obj.GetComputer(); break;

case 3:

char res ;

do {

System.out.println("Select What You Want To Update -----");

System.out.print("Please Choose From Below \n1)Name \n2)Type \n3)Processor " +

"\n4)Specification \n5)Ram \n6)Hard Disk \n7)Mother Board \n8)Window \n9)Exit"+ " \nEnter : ");

res = sc.next().charAt(0);

switch (res) {

case '1': obj.updatename(); break;

case '2': obj.updatetype(); break;

case '3': obj.updatepro(); break;

case '4': obj.updatespec(); break;

case '5': obj.updateram(); break;

case '6': obj.updatehard(); break;

case '7': obj.updatemother(); break;

case '8': obj.updatewindow(); break;

default:

System.out.println("-----------INVALID-----------------");

break;

}

System.out.print("Do you want to update again any function (y/n): ");

res=sc.next().charAt(0);

} while (res=='y');

break;

case '4':

System.out.println("\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*");

System.out.println("\*\*\*\*\*\*\*\*YOU ARE SUXXESSFULLY EXIT\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*");

System.out.println("\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*");

break;

default:

System.out.println("\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*");

System.out.println("----------- INVALID -----------------");

System.out.println("\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*");

break;

}

System.out.print("Do you want to perform again (y/n): ");

r=sc.next().charAt(0);

} while (r=='y');}

**public class Computer** {

Scanner sc = new Scanner(System.in);

private String name = "Ahsan";

private String Type = "pc";

private String Processor = "Core i6";

private String specification = "Best";

private String ram = "4 GB";

private String harddisk = "380 GB";

private String motherboard = "Nive";

private String window = "7";

public void setcomputer() {

int y ;

char re;

do {

System.out.print("Please Choose From Below \n1)Name \n2)Type \n3)Processor "

+ "\n4)Specification \n5)Ram \n6)Hard Disk \n7)Mother Board \n8)Window \n9)Exit"

+ " \nEnter : ");

y = sc.nextInt();

switch (y) {

case 1:

System.out.print("Enter Name :");

name = sc.next(); break;

case 2:

System.out.print("Enter Type :");

Type = sc.next(); break;

case 3:

System.out.print("Enter Processor :");

Processor = sc.next(); break;

case 4:

System.out.print("Enter Specification :");

specification = sc.next(); break;

case 5:

System.out.print("Enter Ram :");

ram = sc.next(); break;

case 6:

System.out.print("Enter Hard Disk :");

harddisk = sc.next(); break;

case 7:

System.out.print("Enter Mother Board :");

motherboard = sc.next(); break;

case 8:

System.out.print("Enter Window :");

window = sc.next(); break;

case 9:

System.out.println("You Are Exit"); break;

default:

System.out.println("-----------------INVALID----------");

}

System.out.print("Do you get more inputs(y/n): ");

re=sc.next().charAt(0);

} while (re=='y');

}

public void GetComputer() {

System.out.println(" Name => " + name);

System.out.println(" Type => " + Type);

System.out.println(" Processor => " + Processor);

System.out.println(" Specification=> " + specification);

System.out.println(" Ram => " + ram);

System.out.println(" Hard Disk => " + harddisk);

System.out.println(" Mother Board => " + motherboard);

System.out.println(" Window => " + window);

}

public void updatename() {

System.out.println("Previous Name IS => " + name);

System.out.print("Enter Name :");

name = sc.nextLine();

System.out.println("---------UPDATED-------"); }

public void updatetype() {

System.out.println("Previous Name IS => " + Type);

System.out.print("Enter Type :");

Type = sc.nextLine();

System.out.println("---------UPDATED-------"); }

public void updatepro() {

System.out.println("Previous Name IS => " + Processor);

System.out.print("Enter Name : ");

Processor = sc.nextLine();

System.out.println("---------UPDATED-------"); }

public void updatespec() {

System.out.println("Previous Name IS => " + specification);

System.out.print("Enter Name :");

specification = sc.nextLine();

System.out.println("---------UPDATED-------"); }

public void updateram() {

System.out.println("Previous Name IS => " + ram);

System.out.print("Enter Name :");

ram = sc.nextLine();

System.out.println("---------UPDATED-------"); }

public void updatehard() {

System.out.println("Previous Name IS => " + harddisk);

System.out.print("Enter Name :");

harddisk = sc.nextLine();

System.out.println("---------UPDATED-------"); }

public void updatemother() {

System.out.println("Previous Name IS => " + motherboard);

System.out.print("Enter Name :");

motherboard = sc.nextLine();

System.out.println("---------UPDATED-------"); }

public void updatewindow() {

System.out.println("Previous Name IS => " + window);

System.out.print("Enter Name :");

window = sc.nextLine();

System.out.println("---------UPDATED-------"); }

}

**Output:**

