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**Object Oriented Programming LAB**

**Experiment No.: 15**

**Aim**

Create an interface having prototypes of functions area() and perimeter(). Create two classes Circle and Rectangle which implements the above interface. Create a menu driven program to find area and perimeter of objects.

**Procedures**

**Source Code**

import java.util.Scanner;

public class Menudriven

{

public static void main(String[] args)

{

int ch,a=0;

Scanner sc = new Scanner(System.in);

Circle ob = new Circle();

Rectangle obj = new Rectangle();

do

{

System.out.println("\n1.Circle\n2.Rectangle\n3.exit");

System.out.println("Enter your choice:");

ch = sc.nextInt();

switch(ch)

{

case 1 :ob.getdata();

ob.area();

ob.perimeter();

break;

case 2 :obj.getdata();

obj.area();

obj.perimeter();

break;

case 3 :System.out.println("Exited...");

System.exit(0);

}

}while(a==0);

}

}

interface prgrm

{

void getdata();

void area();

void perimeter();

}

class Circle implements prgrm

{

double pi = 3.14;

double r;

Scanner sc = new Scanner(System.in);

public void getdata()

{

System.out.println("Enter the radius of the circle:");

r = sc.nextDouble();

}

public void perimeter()

{

System.out.println("Perimeter of the circle: "+(2\*pi\*r));

}

public void area()

{

System.out.println("Perimeter of the circle: "+(pi\*r\*r));

}

}

class Rectangle implements prgrm

{

double l,b;

Scanner sc = new Scanner(System.in);

public void getdata()

{

System.out.println("Enter the length of the rectangle:");

l = sc.nextDouble();

System.out.println("Enter the breadth of the rectangle:");

b = sc.nextDouble();

}

public void area()

{

System.out.println("Perimeter of a rectangle: "+(l\*b));

}

public void perimeter()

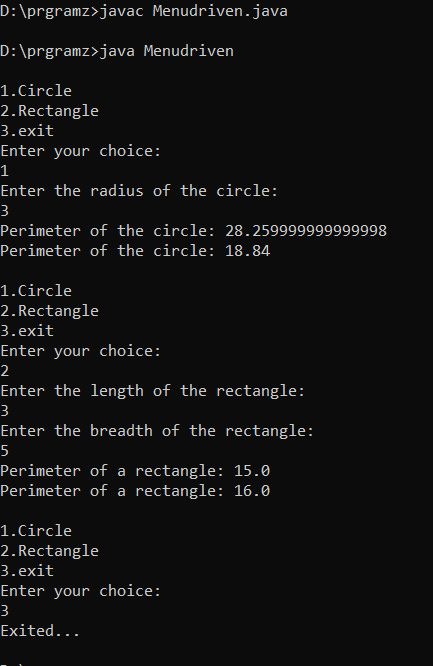
{

System.out.println("Perimeter of a rectangle: "+(2\*(l+b)));

}

}

**Output**



**OBJECT ORIENTED PROGRAMMING LAB**

**Experiment No.: 16**

**Aim**

Prepare bill with the given format using calculate method from interface.

Order No.

Date :

Product Id Name Quantity unit price Total

101 A 2 25 50

102 B 1 100 100

Net. Amount 150

**Procedure**

**Source Code**

import java.util.Scanner;

public class Inter

{

public static void main(String[] args)

{

int n,i;

double namount=0,t;

int ran;

String date;

t = Math.random() \*1000000;

ran = (int) t;

Scanner sc = new Scanner(System.in);

System.out.println("Order no. #"+ran);

System.out.println("Enter the date:");

date = sc.nextLine();

System.out.println("Enter how many products are there:");

n = sc.nextInt();

bill ob[] = new bill[n];

for(i=0;i<n;i++)

ob[i] = new bill();

for(i=0;i<n;i++){

ob[i].getdata();

ob[i].calculate();

}

System.out.println("Date:"+date);

System.out.println("Product Id \tName\t Quantity\t unit price\t Total ");

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

for(i=0;i<n;i++){

ob[i].display();

namount += ob[i].total;

}

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

System.out.println("\t\t\tNet.Amount\t"+ namount);

}

}

interface calc

{

void calculate();

}

class bill implements calc

{

String date,name,p\_id;

int quantity;

double unit\_price,total,namount=0;

Scanner sc = new Scanner(System.in);

public void getdata()

{

System.out.println("\nEnter product id:");

p\_id = sc.nextLine();

System.out.println("Enter product name:");

name = sc.nextLine();

System.out.println("Enter the Quantity:");

quantity = sc.nextInt();

System.out.println("Enter the unit price:");

unit\_price = sc.nextDouble();

}

public void calculate()

{

total = quantity \* unit\_price;

}

public void display()

{

System.out.println(p\_id+"\t\t"+name+"\t\t"+quantity+"\t\t"+unit\_price+"\t"+total);

}

}

**Output Screenshot**

