

Lab - 4

Date _____
Page _____

- Q) Develop a Java program to create an abstract class named Shape that contains two integers and an empty method named printArea(). Below three classes named Rectangle, Triangle and Circle such that one of the classes extends class shape. Each one of the classes contain only the method printArea() that prints the area of the given shape.

```
import java.util.Scanner  
abstract class Shape
```

```
{
```

```
    int d1;
```

```
    int d2;
```

```
    Shape (int a, int b)
```

```
{
```

```
    d1 = a;
```

```
    d2 = b;
```

```
}
```

```
abstract void printArea();
```

```
{}
```

System.out.println ("Area of the rectangle :" + area);

}

class Triangle extends Shape

{

Triangle (int a, int b)

{

super (a, b);

}

void printarea()

{

double area = d1 * d2 / 2;

System.out.println ("Area of the triangle :" + area);

}

}

class Circle extends Shape

{

Circle (int a, int b)

{

super (a, b);

}

void printarea()

{

double area = 3.14 * d1 * d1;

System.out.println ("Area of the circle :" + area);

class Main

public static void main (String args [])

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

Scanner sc = new Scanner(System.in);

int x = sc.nextInt();

int y = sc.nextInt();

System.out.println("Enter dimensions of triangle");

int s = sc.nextInt();

int w = sc.nextInt();

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

int f = sc.nextInt();

Rectangle r = new Rectangle(x, y);

Triangle t = new Triangle(s, w);

Circle c = new Circle(f, f);

r.printArea();

t.printArea();

c.printArea();

}

}

}

}

}

}

}

}

}

}

}

}

}

}

}

}

}

}

}

}

Lab-5

Date _____
Page _____

Develop a Java program to create class Bank that maintains two kinds of account for its customers, one called savings account and the other current account. The savings account provides compound interest and withdraw facilities but no cheque book facility.

import java.util.Scanner;
abstract class Account

String cust_name;

long acc_no;

String acc_type;

double balance;

double min_bal = 1000.0;

Account (String cust_name, long acc_no, String acc_type, double balance)

{

this.cust_name = cust_name;

this.acc_no = acc_no;

this.acc_type = acc_type;

this.balance = balance;

}

abstract void deposit (double amount);

abstract void display ();

abstract void withdraw (double amount);

}

class Curr_acct extends Account

{

double penalty = 100.0;

curr_act (String cust_name, long acc_no,
String acc_type, double balance)

super(cust_name, acc_no, acc_type, balance);
System.out.println ("Name of the customer : " + cust_

name);
System.out.println ("Account Number : " + acc_no);
System.out.println ("Account type : " + acc_type);
System.out.println ("Balance : " + balance);

void deposit (double amount)

this.balance = this.balance + amount;

void withdraw (double amount)

this.balance = this.balance - amount;
impose penalty();

System.out.println ("The current balance is " + balance);

void imposePenalty ()

if (this.balance < min_bal)

this.balance = this.balance - penalty;

System.out.println ("The balance amount is
insufficient, the penalty imposed = 100Rs");

void display()

System.out.println("Balance is :" + this.balance);

}

}

class Sav acct extends Account

{

Sav_acct (String cust_name, long acc_no,
String acc_type, double balance)

{

super(cust_name, acc_no, acc_type, balance);

System.out.println ("Name of the customer :" + cust_name);

System.out.println ("Account Number :" + acc_no);

System.out.println ("Account type :" + acc_type);

System.out.println ("Balance :" + balance);

}

void deposit (double amount)

{

this.balance = this.balance + amount;

interest();

}

void interest()

{

int rate = 10, time = 1;

float ci = (float)

(this.balance * Math. pow(1 + rate / 100.0, time) -

this.balance);

System.out.println ("The interest amount added to
balance is :" + ci);

this.balance = this.balance + ci;

}

void withdraw (double amount)

{

```
this.balance = this.balance - amount;  
System.out.println("The current balance is " + balance);
```

```
void display()
```

{

```
System.out.println("Balance is " + this.balance);
```

{

```
class AccountMain
```

{

```
public static void main (String [] args)
```

```
{ Scanner xx = new Scanner (System.in); }
```

```
double amount;
```

```
int flag = 0;
```

```
while (flag == 0)
```

{

```
System.out.print ("Enter the type of Account : In 1:  
Current account In 2: Savings account ");
```

```
int choice = xx.nextInt();
```

```
switch (choice)
```

{

```
case 1: System.out.println ("1 is Current account : In")
```

```
- System.out.print ("Enter the name of account holder");
```

```
String f = xx.next();
```

```
System.out.print ("Enter the account number");
```

```
long g = xx.nextLong();
```

```
System.out.print ("Enter the balance amount");
```

```
double h = xx.nextDouble();
```

curr_act = new curr_act(f, g, "current", h);
int flag = 0;
while (flag == 0)
{

System.out.println("Enter your choice\n1: Deposit
amount\n2: Display Balance\n3: Withdraw");
int choice = xx.nextInt();
switch (choice) {
case 1:

System.out.println("Enter amount to be deposited");
amount = xx.nextDouble();
c.deposit(amount);
break;

case 2:

c.display();

break;

case 3:

System.out.println("Enter amount you want to withdraw");

amount = xx.nextDouble();

c.withdraw(amount);

break;

default:

flag = 1;

break;

case 2: System.out.println("Savings Account:\n")

System.out.println("Enter name of account holder");

String h = xx.next();

long flag = xx. nextLong();

System.out.println("Enter the balance amount");
double r = xx. nextDouble();

Bank accts = new BankAccts(pq, "Savings", r);
int flag2 = 0;

while (flag2 == 0)

System.out.println("Enter your choice. In 1: Deposit
amount | n2: Display Balance | n3: Withdraw");

int choice2 = xx. nextInt();

switch (choice2) {

case 1: System.out.println("Enter amount to be deposited:");
amount = xx. nextDouble();

break;

case 2:

s. display();

break;

case 3:

System.out.println("Enter amount you want to withdraw:");
amount = xx. nextDouble();

s. withdraw(amount);

break;

default:

flag2 = 1;

3

break;

default: flag = 1;

3

3