/\*

Write a java program in menu driven fashion to find:

a. Roots of a quadratic equation

b. Factorial of a number

c. Print the pyramid

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**Program\*/**

import java.io.\*;

import java.util.Scanner;

public class Cycle1

{

public static void main (String args[])

{

int ch = 0;

Scanner scanner = new Scanner (System.in);

do

{

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

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

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

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

System.out.println ("0: Exit");

System.out.print ("Select your choice");

ch = scanner.nextInt ();

if (ch == 0)

break;

switch (ch)

{

case 1: // Roots of Quadratic Equation

QuadraticEq qobj = new QuadraticEq ();

qobj.findRoots ();

break;

case 2:

Factorial fobj = new Factorial ();

fobj.findFactorial ();

break;

case 3:

Pyramid pyobj = new Pyramid ();

pyobj.printPryamid ();

break;

default:System.out.print ("Enter Valid Choice!!!");

break;

}

}

while (true);

}

}

class QuadraticEq

{

double a, b, c, r1, r2;

Scanner scanner = new Scanner (System.in);

QuadraticEq ()

{

System.out.println ("Enter a, b and c");

a = scanner.nextDouble ();

b = scanner.nextDouble ();

c = scanner.nextDouble ();

r1 = 0;

r2 = 0;

}

public void findRoots ()

{

double disc = finddisc ();

if (disc > 0)

{

// r = -b / 2 \* a;

r1 = (-b + Math.sqrt (disc)) / (2 \* a);

r2 = (-b - Math.sqrt (disc)) / (2 \* a);

System.out.println ("The equation has two real roots " + r1+" and " + r2);

}

if (disc == 0)

{

System.out.println ("The equation has one root " + r1);

r1 = -b / (2 \* a);

r2 = -b / (2 \* a);

}

if (disc < 0)

{

System.out.println ("");

System.out.print (" ");

System.out.println ("The equation has no real root");

}

}

public double finddisc ()

{

return (double) (b \* b - 4 \* a \* c);

}

}

class Factorial

{

int n, fact;

Scanner scanner = new Scanner (System.in);

Factorial ()

{

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

n = scanner.nextInt ();

fact = 1;

}

public void findFactorial ()

{

for (int c = 1; c < n; c++)

fact += fact \* c;

System.out.println ("");

System.out.print (" ");

System.out.print (n + "! =" + fact);

System.out.println ("");

System.out.println ("");

}

}

class Pyramid

{

int l;

Scanner scanner = new Scanner (System.in);

Pyramid ()

{

System.out.println ("");

System.out.print (" ");

System.out.print ("Enter levels needed ");

System.out.println ("");

l = scanner.nextInt ();

}

public void printPryamid ()

{

for (int i = 1; i < l \* 2; i += 2)

{

for (int k = 0; k < (4 - i / 2); k++)

{

System.out.print (" ");

}

for (int j = 0; j < i; j++)

{

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

}

System.out.println ("");

}

}

}

OUTPUT

student@administrator-HCL:~/Anand$ java Cycle1

1. Roots

2. Factorial

3. Pyramid

0: Exit

Select your choice2

Enter the number: 3

3! =6

1. Roots

2. Factorial

3. Pyramid

0: Exit

Select your choice2

Enter the number: 1

1! =1

1. Roots

2. Factorial

3. Pyramid

0: Exit

Select your choice1

Enter a, b and c

1 7 12

the roots of equation are -3 -4

1. Roots

2. Factorial

3. Pyramid

0: Exit

Select your choice3

Enter levels needed

3

\*

\* \*

\* \* \*

1. Roots

2. Factorial

3. Pyramid

0: Exit

Select your choice