

### Question 3

#### PROGRAMMING (JAVA)

a program that asks the user if they would like to find out sqrt, log or factorial of a number.

studypool - NetBeans IDE 8.2

File Edit View Navigate Source Refactor Run Debug Profile Team Tools Window Help

```
1
2 package studypool;
3 import java.util.Scanner;
4 public class Studypool {
5
6     public static void main(String[] args) {
7         Scanner input = new Scanner(System.in);
8
9         //initiating variable
10        int x = 0; //the choice variable. The choice which the user will select at first. (1,2 or 3)
11        double sqrtNum = 0; //the number which the user will input to get the squareroot of
12        double logNum = 0; //the number which the user will input to get the log of
13        double factorialNum = 0; //the number which the user will input to get the factorial of
14        double sqrt = 0;
15        double log = 0;
16        double factorial = 0;
17
18        //prompt the user for what they'd like to calculate
19        System.out.println("Welcome to the simple math solver.\nWhat would you like to calculate?\n1. Sqrt\n2. Log\n3. Factorial\n");
20        x = input.nextInt();
21
22        //if statement for incase the user chooses 1 (square root)
23        if(x==1){
24            System.out.println("Enter the number to sqrt");
25            sqrtNum = input.nextDouble();
26
27            sqrt = Math.sqrt(sqrtNum);
28
29            System.out.println("The square root is: " +sqrt);
30        }
31        //if statement for incase the user chooses 2 (log)
32        if(x==2){
33            System.out.println("Enter the number to Log");
34            logNum = input.nextDouble();
35
36            log = Math.log10(logNum);
37
38            System.out.println("The log is: " +log);
39        }
40        //if statement for incase the user chooses 3 (factorial)
41        if(x==3){
42            System.out.println("Enter the number to factorial");
43            factorialNum = input.nextDouble();
44
45            long fact = 1;
46            int i = 1;
47            while(i<=factorialNum)
48            {
49                fact = fact * i;
50                i++;
51            }
52            System.out.println("Factorial of "+factorialNum+" is: "+fact);
53        }
54    }
55 }
56
57
58
```

Output:

Square root

```
studypool.Studypool >> main >>
Output - studypool (run) X
run:
Welcome to the simple math solver.
What would you like to calculate?
1. Sqrt
2. Log
3. Factorial
>
1
Enter the number to sqrt
81
The square root is: 9.0
BUILD SUCCESSFUL (total time: 5 seconds)
|
```

Log output

```
Output - studypool (run) X
run:
Welcome to the simple math solver.
What would you like to calculate?
1. Sqrt
2. Log
3. Factorial
>
2
Enter the number to Log
3
The log is: 0.47712125471966244
BUILD SUCCESSFUL (total time: 5 seconds)
```

## Factorial output

Output - studypool (run) X

```
run:
Welcome to the simple math solver.
What would you like to calculate?
1. Sqrt
2. Log
3. Factorial
>
3
Enter the number to factorial
5
Factorial of 5.0 is: 120
BUILD SUCCESSFUL (total time: 6 seconds)
|
```