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1  /**
2   * Develop a complicated 5-function calculator program that allowed the u
3   * This lab was designed to teach you how to use switch statements
4   * @author Aryan Gupta
5   * @version 2.0, 10/18/2015
6   */
7  import java.util.Scanner;
8  import static java.lang.System.*;
9  import static java.lang.Math.*;
10
11 public class CalculatorAltRunner {
12     //Vars
13     private static String operation;//still dont understand static and to
14     lazy to look it up, but compiler yelled at me for it
15
16     public static void main( String[] args ) {
17         Scanner keyboard = new Scanner( System.in );//Creates new instanc
18         e of a scanner
19         out.print("Please enter:\n+\tto perform addition\n-\tto perform s
20         ubtraction\n*\tto perform multiplication\n/\tto perform division\n^\tto p
21         erform exponentiation\n\n");
22         operation = keyboard.nextLine();//sets var operation to input str
23         ing
24         if(operation.equals("\\\\")){ //replaces "\\" with "/"
25             operation = "/";
26         }
27
28         while (isValidOperation() == false) { //chaeks the integrety of o
29         peration, if the operation is not valid, asks user to retype a valid oper
30         ation
31
32             out.print("You entered a wrong operation\n\nPlease enter:\n+\
33             \tto perform addition\n-\tto perform subtraction\n*\tto perform multiplica
34             tion\n/\tto perform division\n^\tto perform exponentiation\n\n");
35             operation = keyboard.nextLine();
36         }
37
38         out.print("Please enter the first operand:");
39         String firstLine = keyboard.nextLine();//gets first integer and s
40         ets it to var firstInt
41
42         while( isInteger(firstLine) == false){
43             System.out.println("You entered a invalid answer to a perfect
44             ally valid question, please try again");
45             out.print("Please enter the first operand:");
46             firstLine = keyboard.nextLine();
47         }
48     }
49 }
```

```
36         int firstInt = Integer.parseInt(firstLine);
37
38         out.print("Please enter the second operand:");
39         String secondLine = keyboard.nextLine();//gets second integer and
sets it to var secondInt
40         while( isInteger(secondLine) == false) {
41             System.out.println("You entered a invalid answer to a perfect
ally valid question, please try again");
42             out.print("Please enter the second operand:");
43             secondLine = keyboard.nextLine();
44         }
45         int secondInt = Integer.parseInt(secondLine);
46
47         CalculatorAlt test = new CalculatorAlt (operation, firstInt, seco
ndInt);//creates new instance of the Calculator object and sets values in
puted by the user
48         double ansDouble = test.doOperation();//solves the operation the
user wanted
49         long ans = Math.round(ansDouble);//casts the double answer to an
integer by rounding
50
51         out.println("\n" + firstInt + operation + secondInt + "=" + ans);
//displays the answer in an formatted string
52     }
53
54     private static boolean isInteger(String s) { //copied from http://sta
ckoverflow.com/questions/5439529/determine-if-a-string-is-an-integer-in-j
ava
55         try {
56             Integer.parseInt(s);
57         } catch (NumberFormatException e) {
58             return false;
59         } catch (NullPointerException e) {
60             return false;
61         }
62         // only got here if we didn't return false
63         return true;
64     } //changed public to private
65
66     private static boolean isValidOperation() { //Checks the integrity o
f String operation
67         if( (operation.equals("+")) || (operation.equals("-")) || (opera
tion.equals("/")) || (operation.equals("*")) || (operation.equals("^")) )
{
68             return true;
69         }
70         else {
71             return false;
72         }
```

```
73     }//dont understand what static means but compiler yelled at me for it
74 }
```