Java Week 9 : Q2

Due on 2020-04-03, 23:59 IST

Course outline

How does an NPTEL online course work?

Week 0 :

Week 1 :

Week 2 :

Week 3 :

Week 4 :

Week 5 :

Week 6 :

Week 7 :

Week 8 :

Week 9 :

Lecture 41 :
Demonstration-XV (unit=10&lesson=55)
Complete the code to **develop an ADVANCED CALCULATOR** that emulates all the functions of the GUI Calculator as shown in the image.

Note the following points carefully:
1. Use only `double` datatype to store all numeric values.
2. Each button on the calculator should be operated by typing the characters from 'a' to 'p'.
3. To calculate 25-6, User should input fjhkc (where, f for 2, j for 5, h for '-', k for 6 and c for '=').
4. You may use the already defined function `gui_map(char)`.
5. Without '=' operations won't give output as shown in Input_2 and Output_2 example below.
6. The calculator should be able to perform required operations on two operands as shown in the below example:

```
Input_1: 
klgc

Output_1: 
18.0
```

**Sample Test Cases**

<table>
<thead>
<tr>
<th>Input</th>
<th>Output</th>
</tr>
</thead>
<tbody>
<tr>
<td>efagdbamc</td>
<td>13.0</td>
</tr>
<tr>
<td>mlkc</td>
<td>42.0</td>
</tr>
</tbody>
</table>
import java.util.Scanner;

public class Question92{
    public static void main(String[] args){
        String sc = new Scanner(System.in);
        String input = sc.nextLine();
        char seq[] = input.toCharArray();
        int outflag=0;

        // Start the mapping process for each input character
        for(int i=0; i<seq.length; i++){
            seq[i]=gui_map(seq[i]);
        }

        //Print Mapped GUI (remove comment to see the mapped sequence
        System.out.print(seq[i]);
    }

    // Use double type of values for entire calculation
    double operand1=0.0;
    String o1=":"
    double operand2=0.0;
    String o2=":"
    double output=0.0;

    // Perform calculation operations
    for(int i=0; i<seq.length; i++){
        for(int j=0; j<i; j++){
            outflag=0;
            if(seq[i]=='+'||seq[i]=='.'||seq[i]=='/'||seq[i]=='X'||seq[i]=='\n')
                outflag=Character.toString(seq[j]);
            operand1=Double.parseDouble(o1);
            for(int k=i+1; k<seq.length; k++){
                if(seq[k]=='='|')
                    operand2=Double.parseDouble(o2);
                if(seq[i]=='='|')
                    output=operand1+operand2;
                else if(seq[i]=='X'){
                    output=operand1-operand2;
                }else if(seq[i]=='\n'){
                    output=operand1/operand2;
                }else if(seq[i]=='='|'){
                    output=operand1*operand2;
                }
                else
                    break outerloop;
            }
        }
    }

    // Check if output is available and print the output
    if(outflag==1)
        System.out.print(output);
    }// The main() method ends here.

    // A method that takes a character as input and returns the correspondi...
    static char gui_map(char in){
        char out = 'N'; // N = Null/Empty
        char gm[][]={{'a','\n'},
                      {'b','0'}
    }
```java
// Checking for maps
for(int i=0; i<gm.length; i++){
    if(gm[i][0]==in){
        out=gm[i][1];
        break;
    }
}
return out;
```