



DEPARTMENT OF
COMPUTER SCIENCE AND ENGINEERING

Graphical User Interface: Implementing Simple GUI using AWT and SWING Lab. Manual

OBJECT ORIENTED PROGRAMMING
CSE 202



GREEN UNIVERSITY OF BANGLADESH

1 Objective(s)

- To gather knowledge of graphical user interface.
- To implement simple GUI using AWT and SWING on lab.

2 Problem analysis

For solving real life problem, all should know about the graphical user interface. In this Lab experiment the main focus will be on GUI. Using GUI and java language, all have to implement different types of desktop based application. So that, they can feel a little touch on industry.

3 Write a program in java to generate calculator using GUI.

```
1 Log:
2 double t=Math.log10(Double.parseDouble(jTextField1.getText()));
3
4 jTextField1.setText("");
5 jTextField1.setText(jTextField1.getText() + t);
6 Sin:
7 double num1=Math.toRadians(Double.parseDouble(jTextField1.getText()));
8 double num2=Math.sin(num1);
9 jTextField1.setText("");
10 jTextField1.setText(jTextField1.getText() + num2);
11 Cos:
12 double num1=Math.toRadians(Double.parseDouble(jTextField1.getText()));
13 double num2=Math.cos(num1);
14 jTextField1.setText("");
15 jTextField1.setText(jTextField1.getText() + num2);
16 Tan:
17 double num1=Math.toRadians(Double.parseDouble(jTextField1.getText()));
18 double num2=Math.tan(num1);
19 jTextField1.setText("");
20 jTextField1.setText(jTextField1.getText() + num2);
21
22 Factorial (x!):
23 double t=Double.parseDouble(jTextField1.getText());
24
25 double fact=1;
26 while(t!=0){
27
28     fact= fact*t;
29     t--;
30 }
31 jTextField1.setText("");
32 jTextField1.setText(jTextField1.getText() + fact);
33 Root [U+FFFD]
34 double t = Double.parseDouble(String.valueOf(jTextField1.getText()));
35 t = Math.sqrt(t);
36 jTextField1.setText(String.valueOf(t));
37 Square (x2
38 ):
39 double t=Double.parseDouble(jTextField1.getText());
40 t=t*t;
41 jTextField1.setText("");
42 jTextField1.setText(jTextField1.getText() + t);
```

4 Input/Output

Output of the program is given below.

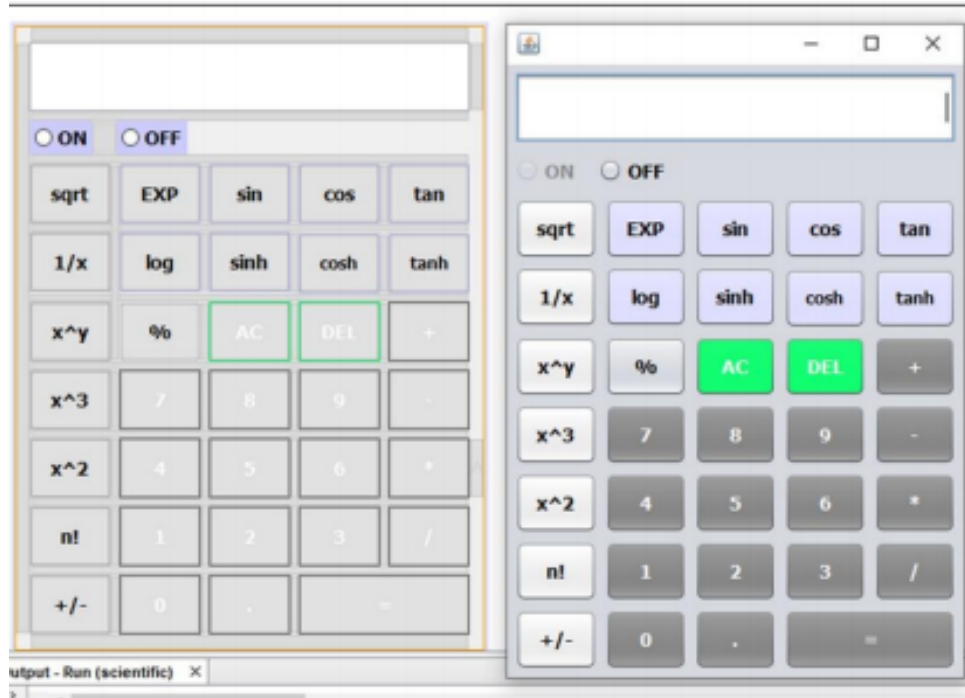


Figure 1: Implementation of calculator using GUI

5 Discussion & Conclusion

A calculator has been constructed in this project by using Java object oriented, GUI concept. While designing the calculator's layout, some difficulties were encountered. There was a flaw with the logic of the root function when it was being built. Connecting the equal button to the mathematical operations button took some extra time. Building the logic for the backspace button was the most critical part of running this program. The moment when the application was run properly and all the operations worked correctly, that moment was the most delightful moment during the whole time of making this project. I learned about plenty of java GUI methods, logic, and operations via this application. The aim of this program was to develop a calculator utilizing a Java GUI, which was completed successfully

6 Lab Task (Please implement yourself and show the output to the instructor)

6.1 Problem analysis

Write a program in java using GUI to design a CGPA calculator **However, Input must be taken from users.**

7 Lab Exercise (Submit as a report)

- Write a program in java using GUI to design a converter

8 Policy

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