



Candidate Instructions

Assignment - 205 Version 3.1

Create Software Components Using Java - Level 2

Assignment 7262-22-205

Create Software Components Using Java Level 2

Candidates are advised to read all instructions carefully before starting work and to check with your assessor, if necessary, to ensure that you have fully understood what is required.

You must, at all times, observe all relevant Health and Safety precautions.

Time allowed 4 hours

Introduction

This assignment is broken down into 3 parts:

1. A scenario is provided for candidates in the form of a company specification for a new product.
2. Task A provides a detailed design specification that should be followed by candidates when developing their program.
3. Task B provides presentation criteria that should be followed by candidates when producing their work.

Scenario

A web software development company, WebNet Developers, is developing a calculator program for use on the Internet. It will be run using a Java applet. The applet will allow a user to do simple calculations.

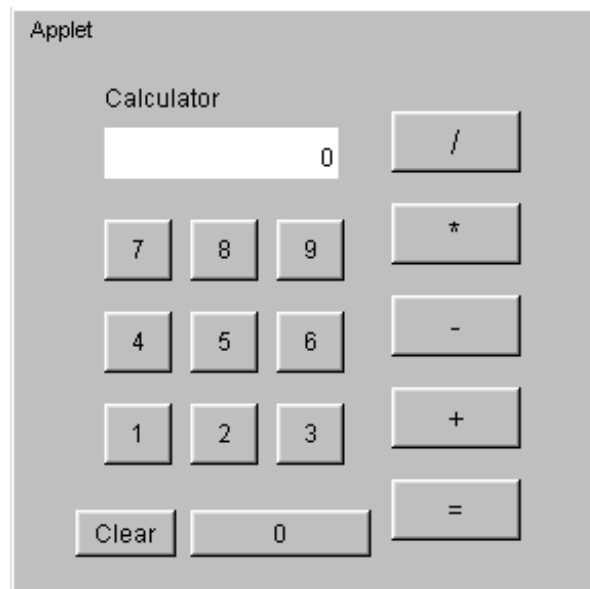
The outline specification for the applet states that

- the calculator program must do addition, subtraction, multiplication and division calculations
- the results of the calculation will displayed as an integer
- the user can clear the results at any time
- all input is entered using buttons.

Task A

Candidates should use the following detailed specification to fulfil the company's requirements:

1. Create a Calculator applet that has a GUI similar to that shown in the following picture.



2. The background and the buttons are light gray in colour.
3. The background for the result label must be white.
4. Make the text for the operator and equals buttons (/, *, -, + and =) bold.
5. The first number input using the number buttons must be stored as a string. As each number button is clicked the cumulative string for the number must be displayed in the result label.
6. When an operator button is clicked the first number must be fully displayed in the result label.
7. The second number input using the number buttons must be stored as a string. As each number button is clicked the cumulative string for the number must be displayed in the result label.
8. When the equals button is clicked the following actions must be taken. The
 - second number must be fully displayed in the result label
 - string for the first number must be converted to an integer
 - string for the second number must be converted to an integer
 - calculation must be done dependant on which operator button was clicked
 - result from the calculation must be converted to a string
 - result string must be displayed in the result label.

9. If the Clear button is clicked, 0 (zero) should be displayed in the result label.
10. Test the applet, check the expected results with the actual results and resolve any logical or run-time errors.
11. Print a program listing.
12. Produce a screen print of the Calculator applet.
13. Save the program on a disk.

Task B

Candidates should follow the criteria listed below when producing their work:

1. The program conforms to the design specification.
2. The program uses the most appropriate data type(s).
3. Meaningful names are used when declaring variables.
4. The program syntax is consistently indented to aid readability.
5. The program is commented.

Note

- Candidates should produce the following for their Assessor:
 - a printed program listing.
 - screen print of the Calculator applet
 - a disk containing the program.
- At the conclusion of this assignment, hand all paperwork and disks to the test supervisor.
- Ensure that your name is on the disk (if using a floppy disk) and all documentation.
- If the assignment is taken over more than one period, all floppy disks and paperwork must be returned to the test supervisor at the end of each sitting.