Level 2 Create software components using Java

(7266-205)

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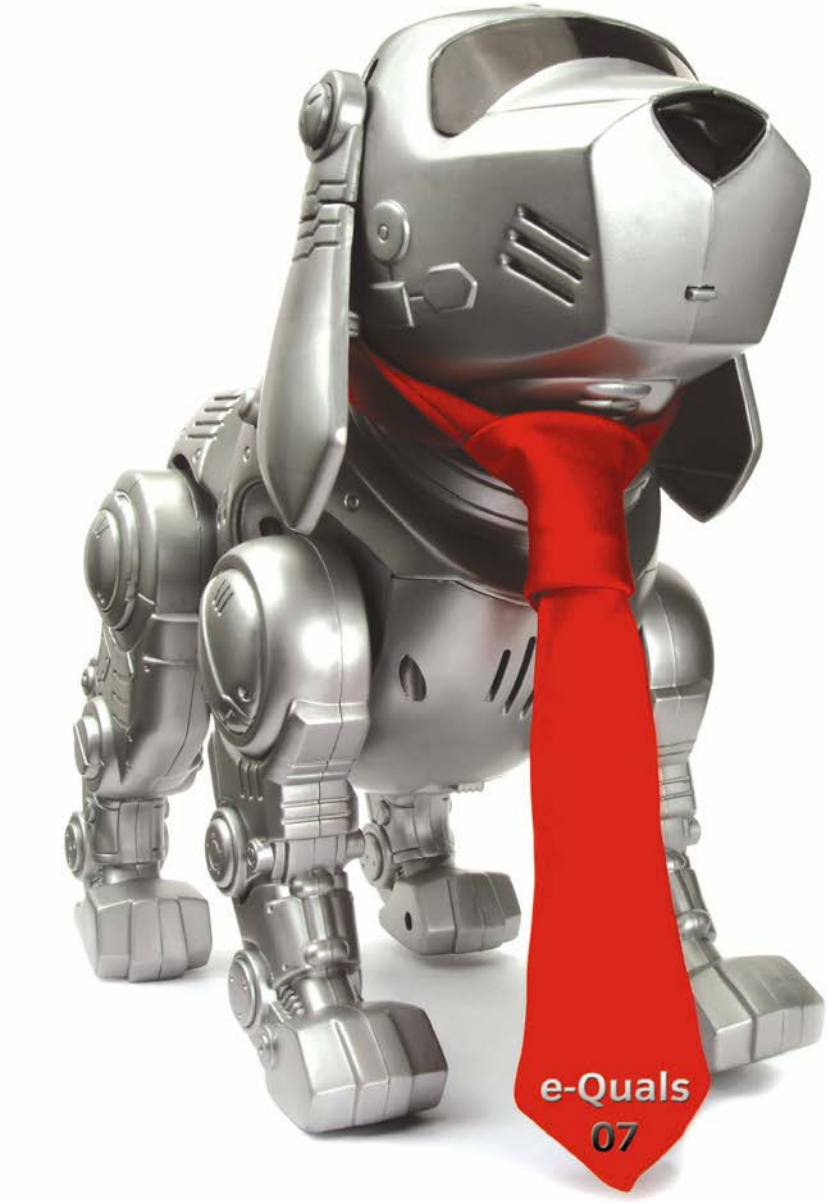
e-Quals
Assignment guide for Candidates
Assignment C



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Introduction – Information for Candidates

About this document

This assignment comprises part of the assessment for Level 2 Create software components using Java (7266-205).

Health and safety

You are asked to consider the importance of safe working practices at all times.

You are responsible for maintaining the safety of others as well as your own. Anyone behaving in an unsafe fashion will be stopped and a suitable warning given. You will **not** be allowed to continue with an assignment if you compromise any of the Health and Safety requirements. This may seem rather strict but, apart from the potentially unpleasant consequences, you must acquire the habits required for the workplace.

Time allowance

The recommended time allowance for this assignment is **4 hours**

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Candidate instructions

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.

Time allowance: 4 hours

Assignment set up: A scenario is provided for candidates in the form of a company specification for a new product.

This assignment is made up of **two** tasks

- **Task A** - provides a detailed design specification that should be followed by candidates when developing their program.
- **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.

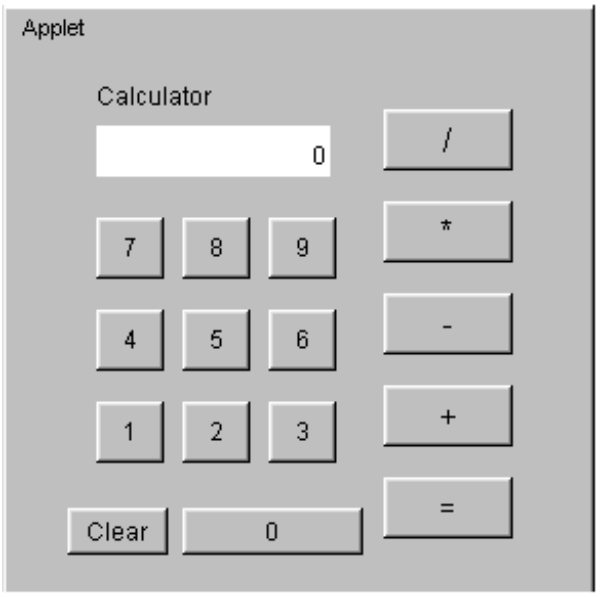
The outline specification for the applet states that

- 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.
- At the conclusion of this assignment, hand all paperwork and removable media to the test supervisor.
- Ensure that your name is on the removable media and all documentation.
- If the assignment is taken over more than one period, all removable media and paperwork must be returned to the test supervisor at the end of each sitting.

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