Level 2 Create software components using Java

(7266/7267-205)

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Assignment guide for Candidates
Assignment D

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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 (7266/7267-205).

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**.

Level 2 Create software components using Java (7266/7267-205) 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 software development company, HighTech Solutions, is developing a word count program for use on the Internet. It will be run using a Java applet. The applet will allow a user to do simple functions.

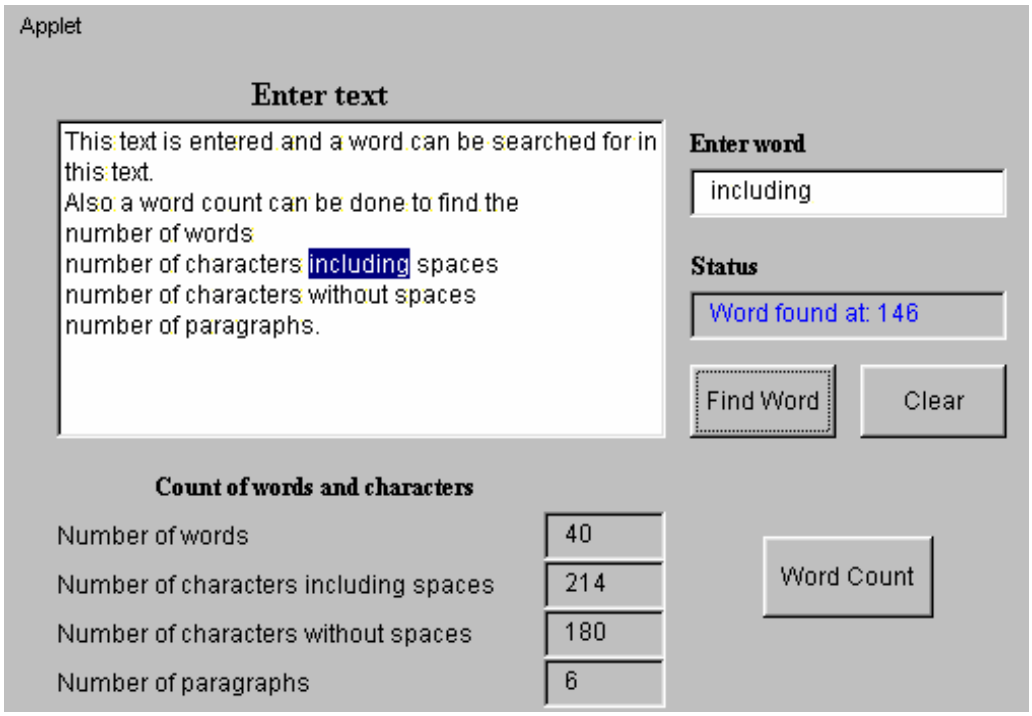
The outline specification for the applet states that

- the program must find a word in text and count the number of words, characters and paragraphs in text
- the user inputs the word to be found and the text to be searched and counted
- a search for a word must highlight the word in the searched text and display the start position of the word if the word is found or if not successful display the message 'Word not found'
- the user can clear the results and input text
- all functions are activated by the use of buttons.

Task A

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

1 Create a WordCount 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 text for the labels 'Enter text', 'Enter word', 'Status' and 'Count of words and characters' must be bold.

4 Text Fields that have no data input should have the Editable property set as false.

5 The scroll bars for the TextArea for 'Enter text' must be disabled.

6 A click on the Find Word button must result in the following actions

- if there is no word entered in the 'Enter word' TextField no action should be taken
- if there is no text in the TextArea no action should be taken
- if there is text in the TextArea the text must be redisplayed to remove any previous highlighting
- if there is a word in the 'Enter word' TextField and text in the TextArea the TextArea must be searched for the exact match for the word
- if the word is found
    - the message 'Word found at: *nnn*' must be displayed in the Status TextField, in a blue Foreground colour, where *nnn* is the start position of the word found in the TextArea
    - the word must be highlighted in the TextArea.
- if the word is not found the message 'Word not found' must be displayed in the Status TextField in a red Foreground colour.

7 A click on the Clear button must clear ALL the display areas (TextArea and TextFields).

8 A click on the Word Count button must result in the following actions

- if there is no text in the TextArea no action should be taken
- if there is text in the TextArea a count must be made of the
    - number of words

        - number of characters including spaces
        - number of characters without spaces
        - number of paragraphs (paragraphs are identified by a carriage return character '\n')
    - the counts must be displayed in the appropriate TextField on the applet.

9 Test the applet, check the expected results with the actual results and resolve any logical or run-time errors.

10 Print a program listing.

11 Produce a screen print of the WordCount applet.

12 Save the program on a disk.

Task B

Candidates should follow the below criteria 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 WordCount 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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