

Candidate Instructions

Assignment - 205 Version 1.1

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

A scenario is provided below for this assignment, which is broken down into 3 tasks:

1. Task A provides a detailed design specification that should be followed by candidates when developing their program.
2. Task B provides presentation criteria that should be followed by candidates when producing their work.
3. Task C lists what the candidate should produce for their assessor.

Scenario

A games software development company, CheckMate Associates, is developing a games program for use on the Internet. It will be run using a Java applet. The applet will allow a user to play the classic game of Hangman in which the player is given the number of letters in a word and then, by guessing letters, has to complete the word.

The outline specification for the applet states that

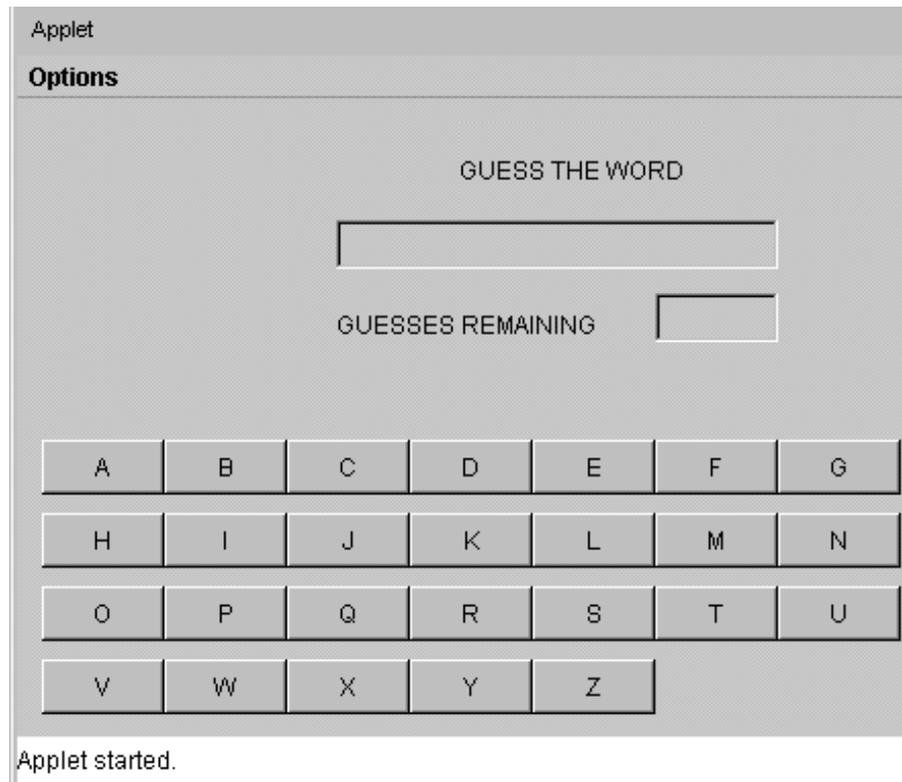
- the player is given the number of letters in a word and then, by guessing letters, has to complete the word
- if a wrong letter is chosen, i.e. one that is not in the word, the player loses a life
- if the guessed letter is in the word, then it is inserted in the correct position and the (incomplete) word displayed
- the game continues until either the player has solved the word or has lost all their lives
- if the player guesses the word before they have lost all their lives, they have 'won'
- if the player loses all their lives before they guess the word, they have 'lost' the game

As a contracted employee of CheckMate Associates, you have been asked to create and test a GuessWord applet that fulfils the specification.

Task A

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

1. Global variables may be declared, but as far as possible, local variables should be used.
2. Create a GuessWord applet that has a Graphical User Interface (GUI) similar to that shown in the following picture.



3. The title GUESS THE WORD must be produced as a Label with the text in red.
4. The characters of the word to be guessed are to be written into the read only TextField beneath the title. This TextField is 24 characters wide.
5. The title GUESSES REMAINING is a Label with the text in red.
6. The number of guesses remaining is shown in a read only TextField which is 3 characters wide and on the same line as the GUESSES REMAINING Label.
7. Letters are chosen by clicking the mouse on one of a grid of buttons representing the letters of the alphabet.
8. A Menu Bar is to be used with the title Options and two menu items Start a new game and Answer.
9. Selecting the menu item Start a new game must clear the two TextFields ready to start the game. It must then select a word from the following list

MEMORY COMPUTER PRINTER TROUSERS BUTTERCUP

10. Each letter of the selected word should be displayed at the end of the 24 character TextField as a minus (-) sign.
11. A player has 8 'lives' in which to guess the word.
12. The number of guesses remaining should be displayed at the end of the three character TextField.
13. The player selects a letter by clicking the mouse on the corresponding button. If the letter is in the hidden word then it is displayed in its correct position(s) in the 24 character TextField. If the letter is not in the word, then the number of remaining guesses should be reduced by one and its value displayed in the three character TextField.
14. If the number of guesses remaining reaches zero and the hidden word has not been solved then display YOU LOSE in the 24 character TextField.
15. If the word is completed before the number of guesses remaining has been reduced to zero then display YOU WIN in the 24 character TextField.
16. Selecting the Answer menu item should display the current word in its TextField and clear the guesses remaining TextField.
17. Test the applet and resolve any logical or run-time errors.

Task B

Candidates should follow the criteria 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.

Task C

Candidates should produce the following for their assessor:

1. A printed program listing.
2. Printout of the GuessWord applet (screen-dump)
3. A disk containing the program (*the program should be saved under a meaningful name*).

Note

- 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.