

COMP1602: Computer Programming II

Project

Date Due: April 14, 2022 @11:59 p.m.

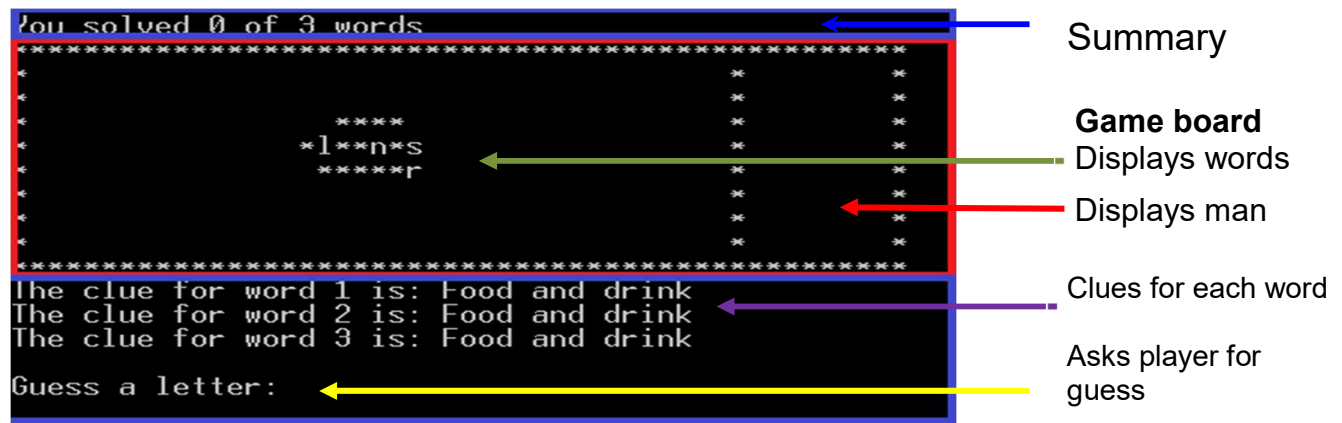
Background

In this project you will be implementing a guessing game. In this game, the player uses clues to guess n words, where n is a random number between 1 and 5. Initially, common characters such as R, S, T, L, N spaces and punctuation marks are revealed. The remaining characters are hidden by a non-alphabetic character (e.g., *, or @, or ^, etc). The game prompts the player to guess a character. If this guess matches any hidden character from any of the words, then that hidden character is revealed. If the guess does not match any hidden character, then the game draws a random portion of a man's body. The man's body consists of six portions: head, neck, left hand, right hand, left foot, and right foot. When all six portions are drawn the game ends.

There are three categories of clues: food and drink, functional characters, and classic tv. The words associated with each clue are contained in the text files *food_and_drink.txt*, *fictional_characters.txt*, and *classic_tv.txt*. Each file has between 1 and 100 words. Each word is located on a new line and the word "END" indicates the end of the text file.

A round of the game starts when the player is given n random words to guess and ends when the player correctly reveals all n words or all of the man's body parts are drawn. For each round, the game chooses n random words from the collection that were not chosen before. Also, the order in which the portions of the man's body are drawn must be different between rounds. When a round is completed, the correct words are displayed and the player is prompted to enter 'Y' to play another round or 'N' to end the game.

Visually, the game is presented in three sections as shown below.



The first section is the summary. This is where the game gives the player feedback on the accuracy of his/her guesses and an overview of the number of words solved so far. The second section is the game board. This section has two sub-sections. A vertical line of '*' characters separates each sub-section. The first sub-section displays n words, one word per line. Collectively, these n words

COMP1602: Computer Programming II Project

Date Due: April 14, 2022 @11:59 p.m.

are centered vertically while each individual word is centered horizontally. The second sub-section displays portions of the man's body as the game progresses. The third section displays the clues for each word and asks the player to make a guess. Please see the screens below for further clarification.

Sample screens from a round of the game.

<pre> You solved 0 of 3 words ***** * * * * * ***l*n* * * ****t*str**** * * *****l*n * * * * * * * * * ***** The clue for word 1 is: Food and drink The clue for word 2 is: Classic TV The clue for word 3 is: Fictional characters Guess a letter: </pre>	<ul style="list-style-type: none"> • Initial screen • Note the words are centered within the first sub-section
<pre> No q's found...try again! You solved 0 of 3 words ***** * * * * * ***l*n* * * ****t*str**** * * *****l*n * * * * * * * * * ***** The clue for word 1 is: Food and drink The clue for word 2 is: Classic TV The clue for word 3 is: Fictional characters Guess a letter: </pre>	<ul style="list-style-type: none"> • The player's guess of 'q' was incorrect. • The game displays feedback in the summary section, and draws and random portion of the man's body.
<pre> Great 4 a's found! keep going! You solved 0 of 3 words ***** * * * * * A*al*n* * * *a**tastr**** * * *****l*n * * * * * * * * * ***** The clue for word 1 is: Food and drink The clue for word 2 is: Classic TV The clue for word 3 is: Fictional characters Guess a letter: </pre>	<ul style="list-style-type: none"> • Later on, in the game the player's guess of 'a' was correct. • The game displays feedback in the summary section. • Note this feedback includes how many a's were found. • The locations of all the a's (both capital and common) are revealed.

COMP1602: Computer Programming II

Project

Date Due: April 14, 2022 @11:59 p.m.

```
No a's found...try again!
GAME OVER!
You solved 0 of 3 words
*****
*                                     *
*                                     *
*      Abal*n*                       *  ---  *
*      *a**tastr*****              *  ^  ^  *
*      **b**bl*n*                   *  ---  *
*                                     *
*                                     *
*                                     *
*                                     *
*                                     *
*****
The clue for word 1 is: Food and drink
The clue for word 2 is: Classic TV
The clue for word 3 is: Fictional characters

The correct words are:
Abalone
Caketastrophe
Hobgoblin
Continue playing enter Y for Yes or N for No:
```

- Later on, in the game the player guesses 'a' again. Although there are a's in the words, all have been revealed. That is, there are no more hidden a's, therefore the player's guess is incorrect.
- The round ends because all the portions of the man's body are drawn.
- The correct words are displayed at the end of the round.

```
You solved 0 of 3 words
*****
*                                     *
*                                     *
*      **n**ns                      *  *  *
*      *r*n**r**s                   *  *  *
*      ***l*t*                      *  *  *
*                                     *
*                                     *
*                                     *
*                                     *
*                                     *
*****
The clue for word 1 is: Food and drink
The clue for word 2 is: Food and drink
The clue for word 3 is: Fictional characters

Guess a letter:
```

- The player decides to play another round. The words listed in this round have not been seen before since the game began.

Requirements

You are required to write a computer program to simulate the playing of several rounds of the above game.

Please note:

1. The game board section must be modelled with a 2D character array. This section consists of 10 rows and 50 columns.
2. The last 10 columns of the game board section are reserved to draw the portions of the man's body.
3. The border for the two sub-sections of the game board must be clearly displayed.
4. The words in the game board section are centered vertically and horizontally (see above description for details).
5. The order in which the portions of the man's body parts are drawn is random.

**COMP1602: Computer Programming II
Project**

Date Due: April 14, 2022 @11:59 p.m.

6. You can design portions of the man's body to your liking or use the default given in the pictures above. If you are providing your own designs the head must be a complex object. That is, it displays the border of a face with at least two eyes and a mouth. You may add emotions to the face.
7. Your implementation must define and use at least two appropriate structs.
8. All the words from the *food_and_drink.txt*, *fictional_characters.txt*, and *classic_tv.txt* must be loaded by the program before the start of the first round.
9. For each round, the n words selected must be different from previous rounds. Assume the player will not play enough rounds to exhaust all the words.
10. The validity of the player's guess depends on the current hidden characters. Guesses are not case sensitive.
11. The clues for each word must be display after the game board section. The clues are given in the order of the words.
12. There must be at least 10 functions. A separate function must be used for drawing each part of the man.
13. Your implementation must use C-Strings. You are NOT allowed to use ANY string / C-String libraries.