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Computational Problem Solving – 121

Project_4 Hang Person

12/29/2022 Fall Semester

Hang Person program documentation

Problems Experienced and Code explanation

Images below

- 1) Loop structure. The way my program is setup, the main loop runs on several Boolean values. These values are also passed to several functions and used for various tasks. It was a challenge trying to use these Booleans in the correct place, without affecting another portion of the code.
- 2) Another issue I encountered was the display of the word on screen. I could not figure out a way to have the right symbols showed if a correct letter was guessed and stored. I eventually concluded that vectors were the best option. I used several vectors throughout my program.
 - a. Vector Inputs
 - i. This vector came is extremely useful. Every time a user inputs a character, it gets pushed back into this vector. This has several uses.
 1. Repeated inputs
 - a. If a user inputs a character, and the program detects that the user has already guessed this character, then it will throw an error message asking for another input. This works for valid and invalid inputs.
 2. Input Verification
 - a. Input verification was done with external libraries. I found functions that checked if the user inputs a lowercase, and alphabetical character. If this was valid then the input is pushed to this vector.
 3. Game loops
 - a. The storage of characters needed to be wiped every game loop. With this vector it was simple as redeclaring the vector.
 - b. Vector Word
 - i. This vector is a character vector. It holds each character of the word as an element. Its great for comparing the user guess to the word to see if a letter matched. It was simply done with a nested if for loop.
 - c. Vector Display
 - i. Vector Display was the most vital in my program as it was vector that was used to display on screen. Vector display is initially filled with asterisk and as the user guess correctly, elements are changed. If a guess matched an element in the word vector, than that element was copied over to the display vector.

1) Game Initialization

```
Welcome to hangperson!  
Only will accept lowercase letter input.  
Randomly picking a word...
```

```
+  
|  
|  
+-----+  
|  
| * * * * *  
|  
+-----+  
Please enter your guess :
```

2) One mistake

```
q is not in this word!
```

```
+-----+  
|  
|  
+-----+  
|  
| * * * * *  
|  
+-----+  
Please enter your guess :
```

3) Two mistakes

```
w is not in this word!  
  
+-----+  
|         |  
|         |  
|         |  
+-----+  
  
* * * * *  
- - - - -  
  
Please enter your guess :
```

4) Three mistakes

```
z is not in this word!  
  
+-----+  
|         |  
|         |  
|         |  
+-----+  
  
* * * * *  
- - - - -  
  
Please enter your guess :_
```

5) Four mistakes

```
p is not in this word!
```

```
+-----+
|       |
|       |
|  0    |
|       |
|       |
+-----+

* * * * *
- - - - -

Please enter your guess : _
```

6) Five mistakes

```
m is not in this word!

+-----+
|       |
|   O   |
| \     |
|       |
+-----+

*** i ***

-----

Please enter your guess : _
```

7) Six mistakes

```
j is not in this word!

+-----+
|       |
|       |
|       |
|       |
|       |
|       |
+-----+

  O
 \  /
  |

* * * i * *
- - - - -

Please enter your guess : _
```

8) Seven mistakes

```
b is not in this word!

+-----+
|       |
|       |
|       |
|       |
|       |
|       |
+-----+

  O
 \  /
  |
  /

* * * i * *
- - - - -

Please enter your guess : _
```

9) End of game eight mistakes. This is also a loss screen.

```
t is not in this word!

+-----+
|       |
|       |
|       |
|       |
|       |
|       |
|       |
|       |
|       |
|       |
+-----+

* * * i * *
- - - - -

You loose!
The word was design

Would you like to play again? [Y/N] : _
```

Win screen

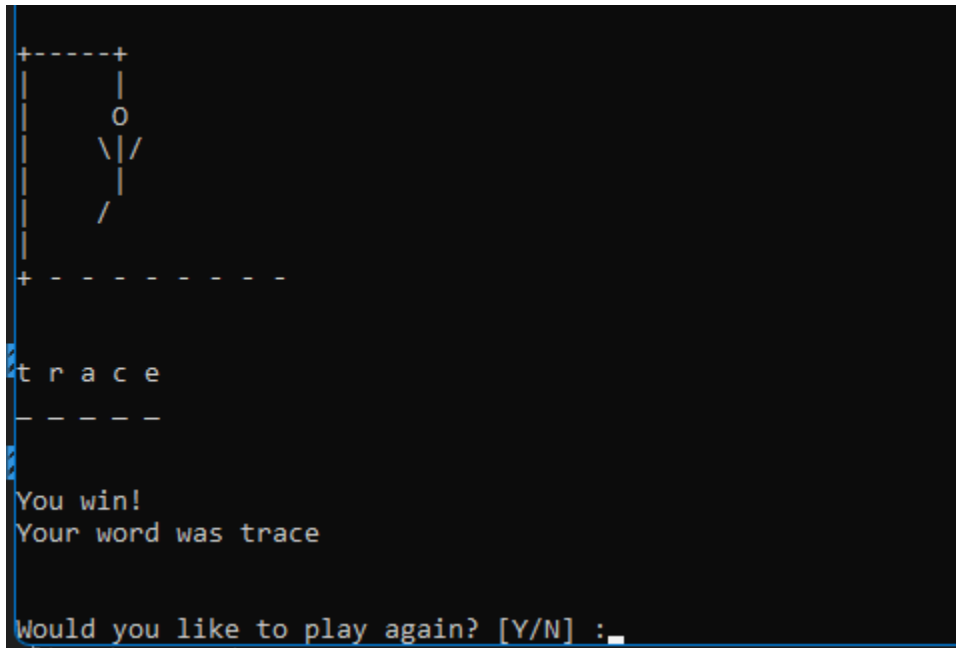
```
+
|
|
|
|
|
|
|
|
|
|
+-----+

p l a n e
- - - - -

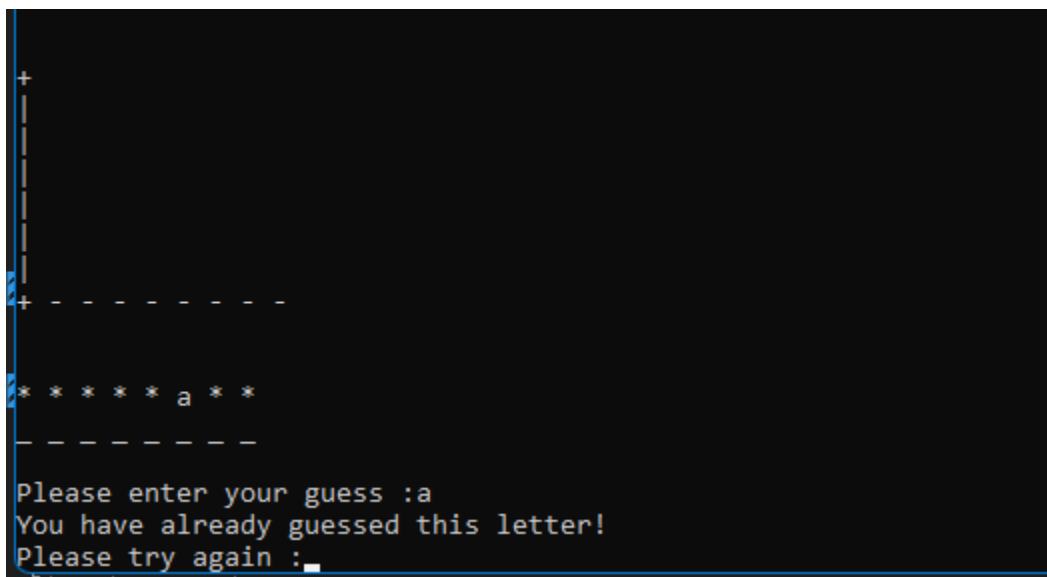
You win!
Your word was plane

Would you like to play again? [Y/N] :
```

Another example of win screen



Repeat guess screen



Invalid input screen

```
+  
+  
+ - - - - -  
* * * * t a * *  
- - - - -  
Please enter your guess :1  
This is not a valid input!  
Please try again :_
```