Intro to Programming in C – Program 3 – Hangman

Assignment purpose: User defined functions, character arrays, c style string member functions

Write an interactive program that will allow a user to play the game of Hangman.
- Use four character arrays:
    - one for the **solutionWord** //this comes from the input file
    - one for the **starWord** //should be the same length as the word from the file
        - Remember to add the NULL character : '\0'
    - one for all of the **guessedLetters** //all the letters that have been guessed so far
        - Remember to add the NULL character : '\0'
    - one for the users **wordGuess** //users word guess
- Declare additional variables as needed

HOW TO PLAY THE GAME

- Allow the user to guess letters one character at a time.

- At every stage of the game, the user should be able to view the current state of the **starWord** and the list of **guessedLetters**

- If a letter is correctly guessed the player is notified and the letter appears in its proper location in the **starWord** array.

- If a letter is not correct, the player is notified

- In ALL cases, the guessed letter should be added to the array for **guessedLetters**

- After guessing a letter correctly the user may guess the word

- If the user guesses a letter incorrectly this will use up one of the 6 guesses (one of the body parts will be drawn, it ok to draw the hangman like the example provided, if you choose to draw a hangman there will be NO EXTRA CREDIT)

- The round of the game will end when the user has either guessed 6 letters incorrectly or has made a correct **WORD** guesses

- If the player guesses the word correctly, the player is notified that they have won a

- If the player does not get the correct word, the player is notified that they have lost and the correct word is displayed.

- When the game is over, the user should be allowed to play again without having to execute the program again. (The player will play again with the next word in the file)

Helpful Hints
- A word is guessed correctly when <u>all</u> of the characters in **solutionWord** match the **wordGuess**
- All letters and words should be consistently changed to upper or lower case
- DO NOT assume all input words from the file have all upper or lower case letters

Other Requirements
- You must have meaningful variable and function names.
- You must use consistent and proper indentation
- You must use sufficient comments that tell a programmer what is happening in the program
- You must have <u>at least</u> 8 user-defined functions with meaningful names that perform the following tasks:
- You must use function prototypes placed before the main function and all function definitions must follow the main function.
- All function prototypes and definitions must have a comment describing what the function does.
- Global variables may not be used
- Break statements may not be used to break out of a loop
  - No modifications may be made to the functions

```c
#define _CRT_SECURE_NO_WARNINGS
#include <stdio.h>
#include <ctype.h>
#include <string.h>

#define WSIZE 30

 //Determines if the player wants to play again
void Quit(char *againPtr);

//Displays instructions
void Rules();

//initializes the word to be guessed to *** based on word size
void InitializeWord(char starWord[], int wordsize);

//play a round of the game, returns a 1 if the user wins and a 0 if the user did not win
int PlayOneRound(char solutionWord [], char starWord[]);

//gets a letter guess from the user
void GetLetter(char *letterPtr);

//compares two char arrays returns 1 if match, 0 if dont match
int CompareArrays( char wordGuess[],  char solutionWord[]);

//notifies the user if they won or lost
void WonLost(char solutionWord[], int win);

//replaces the star with the letter guessed
//returns a 1 if the letter is in the word, returns a 0 if the letter
//is not in the word
int PlaceLetter(char solutionWord[], char starWord[], char target);

//changes a word to upper or lower case
void ChangeCase(char word[]);

//draws the hangman
void DrawHangman(int num);
```

Sample Output

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                    WELCOME TO HANGMAN!


        Please read the following instructions before you play.

        -You will be presented with a word to be guessed
        -Guess letters one at a time
        -You can have up to six incorrect letter guesses
        -YOU CAN ONLY GUESS THE WORD IF YOU HAVE MADE A CORRRECT LETTER GUESS!

        -The game will be OVER when you have guessed
                the word correctly
                or when you have guessed SIX letters incorrectly.

        HAVE FUN!
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Here are the letters guessed so far:
Guess a letter: *********
Enter a guess: e

your letter:  e is in the word!

 Guess this word:  *******e*

surfer

surfer is not the word!

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Here are the letters guessed so far:   e
Guess a letter: *******e*
Enter a guess: w

your letter:  w is NOT in the word!

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DRAWING PART 1: the HEAD

You have 5 more letter guesses

You have made 1 incorrect letter guesses

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Here are the letters guessed so far:   ew
Guess a letter: *******e*
Enter a guess: a

your letter:  a is in the word!

 Guess this word:  *a*****e*

trainer

trainer is not the word!

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Here are the letters guessed so far:   ewa
Guess a letter: *a*****e*
Enter a guess: o
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your letter:  o is NOT in the word!

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ADDING PART 2: the BODY

You have 4 more letter guesses

You have made 2 incorrect letter guesses

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Here are the letters guessed so far:   ewao
Guess a letter: *a*****e*
Enter a guess: p

your letter:  p is NOT in the word!

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ADDING PART  3: the RIGHT LEG

You have 3 more letter guesses

You have made 3 incorrect letter guesses

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Here are the letters guessed so far:   ewaop
Guess a letter: *a*****e*
Enter a guess: t

your letter:  t is NOT in the word!

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ADDING PART  4: the LEFT LEG

You have 2 more letter guesses

You have made 4 incorrect letter guesses

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Here are the letters guessed so far:   ewaopt
Guess a letter: *a*****e*
Enter a guess: j

your letter:  j is NOT in the word!

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ADDING PART  5: the RIGHT ARM

You have 1 more letter guesses

You have made 5 incorrect letter guesses

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Here are the letters guessed so far:   ewaoptj
Guess a letter: *a*****e*
Enter a guess: l

your letter:  l is NOT in the word!

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ADDING PART  6: the LEFT ARM
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Sorry you have run out of guesses :(


You have 0 more letter guesses

You have made 6 incorrect letter guesses

Sorry, you did not win this round, the solution was hamburger


Would you like to play again?
Enter Y to CONTINUE, anything else to QUIT
y
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Here are the letters guessed so far:
Guess a letter: ***********
Enter a guess: m

your letter:  m is in the word!

 Guess this word:  ******mm***

jamming

jamming is not the word!

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Here are the letters guessed so far:   m
Guess a letter: ******mm***
Enter a guess: o

your letter:  o is in the word!

 Guess this word:  **o***mm***

programming


Yay you won this round!

Would you like to play again?
Enter Y to CONTINUE, anything else to QUIT
q
Press any key to continue . . .
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