

# Assignment 2 – Hangman

Collin Wen

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## Purpose

The purpose of this program is to simulate the game hangman. This program will allow the user to guess the letters of the secret word like in the game hangman. They are given 7 lives represented by the gallows and must correctly get the word before losing all their lives to win.

## How to Use the Program

To use this program the user will first have to open the program and also type the secret word they are guessing. To do this they would write `./hangman "secret word"`. They will then see the gallows and the phrase they will be guessing with the letters replaced with underscores. They will then be prompted to guess a letter. If they guess correctly then the underscore in place of that letter will be replaced with that letter. If guessed incorrectly they will lose a life and that letter will be added to the letters eliminated. If they successfully guess the word before losing all their lives they will receive a congratulations statement.

## Program Design

The program uses some helper functions contained in the `"hangman_helpers.c"` file. These functions `string_contains_character` which checks if a string contains a character, `read_letter` which reads the character inputted and returns it, `is_lowercase_letter` which checks if the word given is in lowercase, and `validate_string` which makes sure the secret word given is valid. In the main program `"hangman.c"` is where the game process is made.

## Data Structures

The data structures used in this program are a variety of strings. One of these is a string that contains the secret word but only with the letters already guessed. The other string contains all the numbers of the ascii table that correspond to letters which will help to figure out if a letter has been guessed correctly or eliminated.

## Function Descriptions

`bool_is_lowercase_letter` takes a character and returns true if the character is lowercase and false if not.

`bool_validate_secret` takes a string and returns true if the string is a valid phrase under 256 characters, all lowercase, with only letters, spaces, `"'"` and `"-"`.

`bool string_contains_character` takes a string and a character and returns true if the character is in that string and false if not.

`char read_letter` prompts the user to enter a character, `"Guess a letter: "` and returns that character.

## Results

My program achieves the purpose of creating a hangman game but some whitespace is not correct.



Phrase: hello  
Eliminated:

You win! The secret phrase was: hello

Figure 1: Screenshot of the program running.