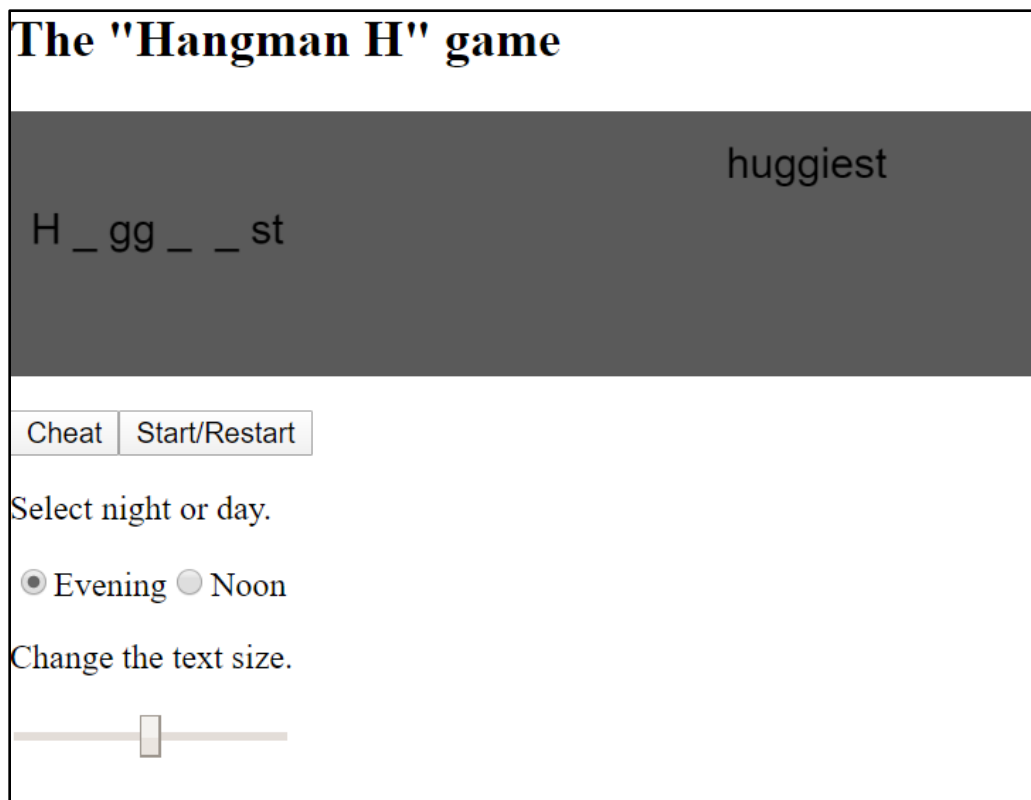# CS106 W2020 - Assignment 06

Due: Friday, February 14, 2020, 11:59 PM

You are to write a JavaScript p5 program to mimic the "The Hangman H Game", as seen in the video https://youtu.be/cAYc6RBU1cU.

There is Starter Code for this assignment.

Requirements and Grading

1) Modify the Hangman Game [14 marks]

The starter code contains the start of a game which is commonly called the "Hangman Game". In our game, all words start with "H" and thus or game is title "Hangman H".

- Save the starter code as "A06_HangmanGame" in a directory called "CS106_A06".
- Examine the code to understand the code.

- The Starter Code loads a text file "H_words.txt" in preload(). "H_words.txt" contains 14,206 words, all of which start with "h". There is one word per line.
- In the gameInitialization() function, a random word is chosen from the 42,206 words. This word is stored as the "gameWord" which is the word the player will be trying to guess.
- In the Starter Code, in the drawGame() function the gameWord is displayed on the canvas using text(). You can delete this line of code as it is not necessary in your solution but is included here so that when the Starter Code is run we see something. The lines you can delete from the Starter Code are:

textSize(32);

text(gameWord, 10, height / 2);

Modify the game as described in the following steps (and as shown in the above video). There are seven parts to this question (a to g) and each is valued at 2 marks .

a) [2 marks] Add a button that allows the user to see the word. The word is displayed in the top middle of the canvas, as seen in the video. This is a cheat. If the user presses the same "Cheat" button again it will hide the word. This is shown in the video.

- Use createButton() and a callback function which you create called "cheat".

b) [2 marks] Add a button that allows the user to restart the game with a new random word. (This is not shown in the video.)

- Use createButton() and a callback function which you create called "gameInitialization".

c) [2 marks] Set up radio buttons to control the background colour.   The user can choose either "Evening" or "Noon". If it is Evening then the background is a dark gray. If it is Noon the background is a very light gray (almost white).

- Hint: Use createRadio() to create a radio named myRadio, and check myRadio.value().

d) [2 marks] Add a slider below the canvas to change the font size for the text on the canvas. The font size can vary between 10 and 30, with a default of 20.

- Hint: Use createSlider() to create a slider named mySlider. Then check the value of "mySlider.value()".

e) [2 marks] Modify the game so that we see the "H" and an underscore for each of the other letters. So for example a five letter word would be displayed as "H _ _ _ _ " and an eight letter word would be displayed as "H _ _ _ _ _ _ _". As seen in the video, this is on the left-hand side of the canvas and half way down the canvas.

f) [2 marks] When the user presses a letter on the keyboard, if that letter is in the word then display all occurrences of that letter. For example, if the five letter word is "hurts" and the user presses "r" then it is displayed as "H _ r _ _" . Any character typed at the keyboard that is not a letter in the word is ignored.

g) [2 marks] When the word is completed, the words "Game Over" appear in the bottom right of the canvas, as seen in the video.

General Correctness

- One mark will be deducted for files or directories named incorrectly (the zip file, etc.)

- One mark will be deducted if the wrong canvas size is used.

- One or more marks will be deducted if the program crashes (depending on the severity).

Assignments that do not run may receive a grade of 0. Even if you don't complete the entire assignment, don't leave it in a broken state. Make sure it runs so we can find ways to give you part marks.

[2 marks] Coding Style and Efficiency

Follow the course coding style for whitespace and comments. Consult the "Code Style Guide" on LEARN. For example:

- Comment your code appropriately. Avoid superfluous comments.
- Correctly and consistently indent your code blocks.
- Use correct inline spacing for variable declaration and assignment.
- Use good line spacing to chunk sections of your code.
- Pay special attention to inline spacing for your conditional statements.
- Use semicolons.
- Use let or const, never var.
- All variables must be declared using let or const. Don't use variables that have not been declared.

One or more marks may be deducted for solutions that have obvious inefficiencies.

- Variables that are declared or assigned, but not used.
- Unnecessarily variables that are duplicates of other variables.
- Unnecessarily repeating the same code in multiple places.
- Too many "magic numbers": the same number appears in many places indicating a variable should have been used instead.

[2 marks] Functionality or Visual Design Enhancements

Once you have basic functionality above working, consider adding the following suggested enhancement:

* When the user presses a key that is not in the word, the key is shown in the bottom left of the canvas, as seen in the video. For example, if the word does not contain the letters "s' and 't' and the user presses "ssst" then the bottom left shows "st".

It's ok to not add this enhancement. A solution without this enhancement with excellent coding style should still achieve a grade up to approximately 90%.

Restrictions

In general, you may not use any functions, libraries, or statements not covered in lecture or labs unless not specifically exempted below or in a post by a TA or instructor on this assignment discussion board. For example:

* NO translate(), rotate(), or scale() functions
* No classes
* You MAY use bezier, arc, and other standard drawing functions

If in doubt, make a post to ask about using a specific statement of function.

Functionality marks will be deducted for using forbidden functions/statements.

Submitting

Zip your assignment sketch folders (CS106_A06), and submit it the correct assignment dropbox. Consult "How to Submit" on Learn for more information on how to create a ZIP.

It is your responsibility to submit to the correct dropbox with the correct files before the deadline. Otherwise you will receive a mark of 0.