

Functions

We used functions for a lot of things in our code. A couple of examples of us using functions came when we created the option for whether we wanted to use a single or two players. Our function `game_menu` lets you choose what game mode you want to play. And we used another function called `game_theme` to choose what theme you wanted to play. We incorporated functions for this because we wanted to repeat these sets of instructions as many times as a user wanted to play the game.

For Loop

We used loops inside of our functions in a lot of places. We used the for loop to create a nested list. One of our functions `underscores(phrase)` incorporated for loops. It takes in a string from the outside and splits it and turns it into a string made up of the underscores instead of the letter. The for loop is important to our code because we want our code to iterate repeatedly compared to a while loop where it has a set number of times it will iterate.

File Opener

We used the file opener to import our two different lists of words depending on which theme the user picks. And we used it for AI (Artificial Intelligence). We have a list of every word in the English alphabet proportioned to how often they are used in the English language. So that makes it to where the Ai will pick a random letter and have a higher chance of picking a more common

letter. The AI will give a smart guess as the user goes off instinct and what they think the best letter for the word is whereas the AI generates a letter based on probability.

Try Except Block

We incorporated the try block

inside our function in a couple of places. One example would be in our game theme(x=None) function. We created a while loop inside this try except function that will iterate forever unless the user gives a usable output being the number 1 or 2. For the try statement we used an if statement for what number the user picks. The difference in the numbers 1 or 2 depends on what theme the user wants to play. If the user gives a number that is not 1 or 2 then the loop will return to the top until they give a number that is usable.

Global Variable

The global variable accesses a variable outside the function of the definition. We used two global variables in our_turn function. We used two global variable functions in this code called "guess_prompt" and "turn_counter". The reason for adding these variables in our function is because "guess_prompt" will tell you to "Guess a letter" while "turn_counter" will add 1 turn to your count that starts at 0 whether you guess a valid letter in the special word or not. This keeps track of who is turn it is by dividing the total amount of turns by modulo 2. Global variables are important because the users and the AI will be accessing the same global variables being "turn_counter" and "guess_prompt."

Methodical Debugging Approaches

We used print statements to show the value of different values as the code progressed so we could identify our problems and fix them. Luckily, we also implemented a pyramid-style of development which allowed us to catch any major bugs before adding each part of code to the main program.

Test Cases

Type of Test Case	Specifications	Expected Output
Typical	Press enter to start the game	Open Menu on Screen
Typical	Enter '1' to choose single player	Opens theme choice menu - once in game, computer plays as player 2
Typical	Enter '2' to choose two player	Opens theme choice screen - once in game, player one and player two both take user input as a move.
Typical	Enter '1' to choose Christmas Themed Words	Secret Word/Phrase is from the Christmas Word text file
Typical	Enter '2' to choose Sports Themed Words	Secret word/phrase is from the sports words text file
Typical	Hit 'Enter' to begin game	Opens first moved of the game for player one
Typical	Enter any letter in the "Available Letters" list	That letter should be removed from the "Available Letters" list and either the letter is displayed where it goes in the

		secret phrase, or the gallows have added a body part to the 'Hangman'
Typical	Enter the final letter in the hidden phrase to complete the puzzle	if player 1, give player 2 a chance to equalize the game. If player 2 fails to do so, game ends and the victor is displayed along with the secret phrase. If player 2 finishes the puzzle before player 1, the game immediately ends. If player 2 equalizes from scenario 1, the game ends in a draw.
Typical	Player enters a final guess and runs out of lives.	Give player 2 a chance to also lose the game. If so, Game ends in a draw- display at end of the game. If, player 2 doesn't also run out of lives, player 2 wins and game ends. If player 2 runs out of lives before player 1, the game ends and Player 1 wins. Again, display the winner and the secret phrase
Edge	Player types something other than "Enter" in the opening menu	If they do not hit enter, nothing should happen; however, if they hit enter at any point, display the game mode menu.
Edge	Player types any number other than 1 or 2 in the Game Mode Selector	Nothing should happen - the input should not be taken.
Edge	Player enters any character other than a number in the game mode selector menu	Nothing should happen - the input should not be taken
Edge	Player enters any number other than 1 or 2 in the theme selector menu	Nothing should happen - the input should not be taken

Edge	Player enters any character that is not a number in the theme selector menu	Nothing should happen - the input should not be taken.
Edge	Player types something other than "Enter" in the game-start menu	Nothing should happen until the user hits enter. Once enter is hit, regardless of what was typed in front of it, the game should begin.
Edge	Player types a letter they have already guessed.	A display should appear saying that letter has already been guessed. If they input a used character again, the message will not print again. After the message prints, the input will not allow any input but a valid one, similar to the game theme and game mode selectors
Edge	Player enters a character that is not in the alphabet	A display should appear saying the guess was an invalid input. If they type an invalid input again, the message will not print again. After the message prints, the input will not allow any input but a valid one, similar to the game theme and game mode selectors