

Title: Number Guessing Game Algorithm

Goal: Create a program that generates a random number and asks the user to guess until they are correct.

Steps:

1. Import the *random* module to generate a random number.
2. Define a function *user_menu_input()*:
 - a. *This function displays a user menu*
 - b. *Accepts the menu input*
 - c. *If the user inputs yes proceed with the game*
 - d. *If the user inputs no exit the game*
 - e. *If the user inputs "you choose", randomly select yes or no.*
3. Define a function *generate_random_number()*:
 - a. This function returns a random number between 1 and 100
4. Define a function *get_user_guess()*:
 - a. This function asks the user for an input and returns it as an integer.
5. Define a function *check_guess(random_number, user_guess)*:
 - a. This function compares the user's guess to the random number.
 - b. After the first incorrect guess, give a hint (higher or lower).
 - c. After two incorrect guesses, give an additional hint randomly selected between (even/odd number, multiple of 5, the number to the power of 2 is greater/less than 1,000)
 - d. If the guess is correct, display the number of attempts and tell them they are correct.
6. Define a function *give_hint(random_num)*:
 - a. This function generates hints for the random number and return hints as a list.
7. Define a function *main()*:
 - a. This function calls the program
 - b. Use while loop to repeat menu prompt until user makes a choice
 - i. Call *user_menu_input()*
 1. Returns the user input
 - c. Call *generate_random_number()*
 - i. Returns a random number
 - d. Call *give_clue(random_num)*
 - i. Returns a list of clues
 - e. Instantiate a guess counter variable

- f. Use a *while loop* to repeat the guessing process (steps 4 and 5) until the user is correct.
 - i. Inside the loop:
 - 1. Call *get_user_guess()*.
 - 2. Call *check_guess(random_number, user_guess)*
 - 3. Print the appropriate message based on the result (hints, clues, correct, etc)
 - g. End the program once the user guesses the correct number.
- 8. *Call the main function to run the program if the script is executed directly*