

**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.