**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():*
   1. *This function displays a user menu*
   2. *Accepts the menu input*
   3. *If the user inputs yes proceed with the game*
   4. *If the user inputs no exit the game*
   5. *If the user inputs “you choose”, randomly select yes or no.*
3. Define a function *generate\_random\_number()*:
   1. This function returns a random number between 1 and 100
4. Define a function *get\_user\_guess()*:
   1. This function asks the user for an input and returns it as an integer.
5. Define a function *check\_guess(random\_number, user\_guess):*
   1. This function compares the user’s guess to the random number.
   2. After the first incorrect guess, give a hint (higher or lower).
   3. 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)
   4. If the guess is correct, display the number of attempts and tell them they are correct.
6. Define a function give\_hint(random\_num):
   1. This function generates hints for the random number and return hints as a list.
7. Define a function main():
   1. This function calls the program
   2. Use while loop to repeat menu prompt until user makes a choice
      1. Call user\_menu\_input()
         1. Returns the user input
   3. Call generate\_random\_number()
      1. Returns a random number
   4. Call give\_clue(random\_num)
      1. Returns a list of clues
   5. Instantiate a guess counter variable
   6. Use a *while loop* to repeat the guessing process (steps 4 and 5) until the user is correct.
      1. 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)
   7. 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*