**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. Import the math module to use for hints
3. Define a function *user\_menu():*
   1. *This function displays a user menu*
   2. *Accepts the menu input yes, no, you choose*
   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.*
4. Define a function *generate\_random\_number()*:
   1. This function returns a random number between 1 and 100 using *random.randint(1, 100)*
5. Define a function *get\_user\_guess()*:
   1. This function asks the user for an input and returns it as an integer.
6. 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.
7. In the main function:
   1. Call *generate\_random\_number()* to get the number that will be guessed
   2. 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*) and store the result.
         3. Print the appropriate message based on the result (hints, correct, etc)
8. End the program once the user guesses the correct number.