**Python mini project-1 ( Number guessing game)**

# Problem Statement-

* Build a number Guessing Game in which the user selects a range. Assume the user selected a range from X to Y where both X and Y are integers.
* So a random number in that range is selected by the system where the user needs to guess the minimum number of guesses.

# Algorithm-

1. Initialization:
   * Define variables:
   * lower\_bound (integer): The lower limit of the user-defined range (X).
   * upper\_bound (integer): The upper limit of the user-defined range (Y).
   * secret\_number (integer): The randomly chosen number within the range (generated by the program).
   * guess (integer): The user's guess for the number.

1. User Input:
   * Prompt the user to enter the lower bound (lower\_bound).
   * Prompt the user to enter the upper bound (upper\_bound).
   * Validate user input to ensure lower\_bound is less than or equal to upper\_bound.

1. Generate Secret Number:
   * Use a random number generator to select a secret number between lower\_bound (inclusive) and upper\_bound (inclusive).

1. Guessing Loop:
   * Start a loop that continues until the user guesses the correct number.
   * Inside the loop:
   * Prompt the user to enter their guess (guess).
   * Compare the guess with the secret\_number:
   * If guess is greater than secret\_number:
   * Print a message indicating the guess is too high.
   * If guess is less than secret\_number:
   * Print a message indicating the guess is too low.

1. Check for Correct Guess:
   * After the comparison in step 4, check if guess is equal to secret\_number.
   * If guess is equal to secret\_number:
   * Exit the loop (user guessed correctly).
   * Print a congratulatory message and display the number of guesses it took the user.

1. Continue Loop:
   * If the guess wasn't correct, the loop continues back to step 4, prompting the user for another guess.

1. End Game:
   * Once the loop exits (due to a correct guess), the game ends.

**Pseudo code-**

START

import random

print("Welcome to the Number Guessing Game!")

print("charan")

while True:

lower\_bound = int(input("Enter the lower bound: "))

upper\_bound = int(input("Enter the upper bound: "))

if lower\_bound > upper\_bound:

print("Invalid range. Lower bound must be less than or equal to upper bound.")

else:

break

secret\_number = random.randint(lower\_bound, upper\_bound)

attempts = 0

print(f"Guess the number between {lower\_bound} and {upper\_bound}!")

while True:

guess = int(input("Enter your guess: "))

attempts += 1

if guess < lower\_bound or guess > upper\_bound:

print(f"Please guess a number within the range {lower\_bound} to {upper\_bound}.")

elif guess < secret\_number:

print("Too low! Try again.")

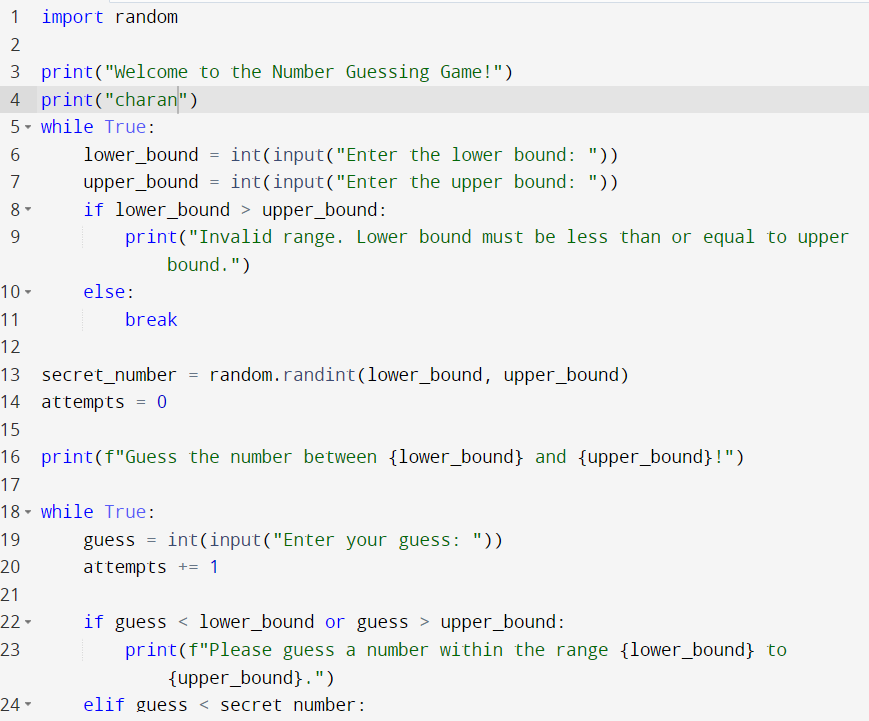
elif guess > secret\_number:

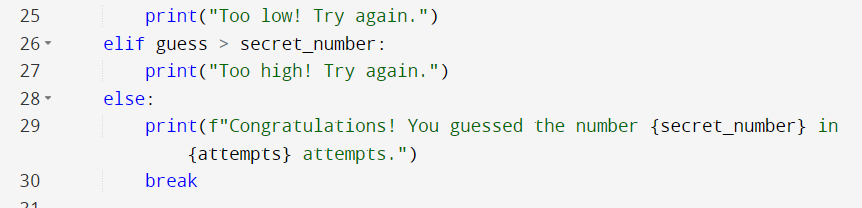
print("Too high! Try again.")

else:

print(f"Congratulations! You guessed the number {secret\_number} in {attempts} attempts.")

break





**OUTPUT :**

