**DAA 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-**

* Initialise the Game
* Print a welcome message.
* Get Range from User
* Prompt the user to enter the lower bound .
* Prompt the user to enter the upper bound.
* Validate that lower\_boundis less than or equal to upper\_bound
* If validation fails, prompt the user again.
* Select Random Number
* Generate a random number within the range [lower\_bound,upper\_bound].
* Initialize Guess Counter
* Set the guess counter to 0.
* Start Guessing Loop
* Repeat until the user guesses the correct number:
* Prompt the user to enter a guess.
* Increment the guess counter.
* Validate that the guess is within the range [lower\_bound, upper\_bound].
* If not, prompt the user again.
* Compare the guess to the secret number:
* If the guess is less than the secret number, inform the user that the guess is too low.
* If the guess is greater than the secret number, inform the user that the guess is too high.
* If the guess is equal to the secret number, inform the user that they have guessed correctly and display the number of attempts.

End Game.

* Print a congratulatory message along with the number of attempts taken.

**Pseudo code-**

START

    PRINT "Welcome to the Number Guessing Game!"

    DO

        PRINT "Enter the lower bound:

        READ lower\_bound

        PRINT "Enter the upper bound:

        READ upper\_bound

        IF lower\_bound > upper\_boundTHEN

            PRINT "Invalid range. Lower bound must be less than or equal to upper   bound."

        END IF

    WHILE lower\_bound> upper\_bound

    SET secret\_number TO RANDOM(lower\_bound, upper\_bound)

    SET attempts TO 0

    PRINT "Guess the number between lower\_bound and upper\_bound!"

    DO

        PRINT "Enter your guess: "

        READ guess

        INCREMENT attempts BY 1

        IF guess < lower\_bound OR guess > upper\_bound THEN

            PRINT "Please guess a number within the range lower\_bound to upper\_bound."

        ELSE IF guess\_the\_number < secret\_number THEN

            PRINT "Too low! Try again."

        ELSE IF guess\_the\_number > secret\_number THEN

            PRINT "Too high! Try again."

        ELSE

            PRINT "Congratulations! You guessed the number secret\_number in attempts."

        END IF

    WHILE guess != secret\_number

END

**Code:-**

import random

def number\_guessing\_game():

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

  x = int(input("Enter the lower bound of the range: "))

  y = int(input("Enter the upper bound of the range: "))

  number = random.randint(x, y)

  attempts = 0

  while True:

    guess = int(input(f"Guess a number between {x} and {y}: "))

    attempts += 1

    if guess < number:

      print("Too low, try again.")

    elif guess > number:

      print("Too high, try again.")

    else:

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

      break

number\_guessing\_game()

**OUTPUT :**

