**Mini Project -1 (Number Guessing Game)**

Roll.no:16

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**Number Guessing Game Algorithm:**

1. Request the user to input two integers, X and Y, defining the range.

2. Generate a random number within the specified range.

3. Set the number of guesses to zero.

4. Prompt the user to make a guess.

5. Evaluate the user's guess:

- If the guess is correct, display a congratulatory message and the total number of attempts.

- If the guess is too low or too high, inform the user and prompt for another guess.

1. Repeat steps 4 and 5 until the user correctly guesses the number.

**Pseudo code:**

START

INPUT X, Y

RANDOM\_NUMBER = generate\_random\_number(X, Y)

ATTEMPTS = 0

WHILE True:

INPUT guess

INCREMENT ATTEMPTS

IF guess == RANDOM\_NUMBER:

PRINT "Congratulations! You've guessed the number in" ATTEMPTS "attempts."

BREAK

ELSE IF guess < RANDOM\_NUMBER:

PRINT "Too low! Try again."

ELSE:

PRINT "Too high! Try again."

END

**Code for Number Guessing Game:**

import random

def number\_guessing\_game():

while True:

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

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

if x < y:

break

else:

print("The lower bound must be less than the upper bound. Try again.")

random\_number = random.randint(x, y)

attempts = 0

print(f"Guess the number between {x} and {y}")

while True:

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

attempts += 1

if guess == random\_number:

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

break

elif guess < random\_number:

print("Too low! Try again.")

else:

print("Too high! Try again.")

if \_\_name\_\_ == "\_\_main\_\_":

number\_guessing\_game()

**Problem Analysis:**

Input: Two integers, X and Y, defining the range; user guesses.

Output: Messages indicating whether the guess is too low, too high, or correct, and the number of attempts.

Edge Cases: Ensure the range is valid (X < Y). Handle non-integer inputs gracefully.

**Output:**

