

MINI PROJECT 1 (NUMBER GUESSING GAME)

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ROLL NO : 14
CSE AI 5B5

ALGORITHM

Get the starting and ending numbers of the range from the user.

Generate a random number within the range.

Loop until the user guesses the correct number.

Prompt the user to guess a number within the range.

Check if the guess is too low, too high, or correct.

Increment the number of guesses.

Print the number of guesses when the user guesses the correct number.

```
import random
def number_guessing_game():
    x = int(input("Enter the starting number of the range: "))
    y = int(input("Enter the ending number of the range: "))
    target_number = random.randint(x, y)
    guesses = 0
    while True:
        guess = int(input(f"Guess a number between {x} and {y}: "))
        guesses += 1
        if guess < target_number:
            print("Too low! Try again.")
        elif guess > target_number:
            print("Too high! Try again.")
        else:
```

```
            print(f"Congratulations! You guessed the number in {guesses}
            guesses.")
            break
```

```
number_guessing_game()
```

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ANALYSIS STATEMENT : This program prompts the user to input a lower and upper bound for the range, generates a random number within that range, and then allows the user to guess the number. The program provides feedback on whether the guess is too low or too high, until the user guesses the correct number. The program keeps track of the number of guesses made, and finally displays the number of guesses it took to correctly guess the number.

PSEUDO CODE :

```
function Number Guessing Game(x, y):
    Initialize lower bound to x
    Initialize upper bound to y
    Initialize guesses to 0

    while true:
        Calculate midpoint as (lower + upper) / 2
        Increment guesses by 1

        Ask user for input ("Is your number <midpoint>?", "yes", "no", "less", "higher")

        if user input is "yes":
            Print "Congratulations! You guessed the number in <guesses> attempts."
            Break out of loop
        elif user input is "less":
```

```
        Update lower bound to midpoint + 1
        elif user input is "higher":
            Update upper bound to midpoint - 1
        else:
            Print "Invalid input. Please enter 'yes', 'less', or 'higher'."

    Return guesses
end function

Set start range to value from user input
Set end range to value from user input
```

```
Guesses = Number Guessing Game(start range, end range)
Print "You used <guesses> guesses."
```