NUMBER GUESSING GAME

AIM:

Create a python program for a number guessing game where the user tries to guess a randomly chosen number within a defined range, receiving hints after each guess to guide them towards the correct answer .

OBJECTIVES:

STEP 1 : User inputs the lower bound and upper bound of the range.

STEP 2 : The compiler generates a random integer between the range and store it in a variable for future references.

STEP 3 : For repetitive guessing, a while loop will be initialized.

STEP 4 : If the user guessed a number which is greater than a randomly selected number, the user gets an output "Try Again! You guessed too high"

STEP 5 : Else If the user guessed a number which is smaller than a randomly selected number, the user gets an output "Try Again! You guessed too small"

STEP 6 : And if the user guessed in a minimum number of guesses, the user gets a "Congratulations! " Output.

STEP 7 :Else if the user didn't guess the integer in the minimum number of guesses, he/she will get "Better Luck Next Time!" outputs.

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CODING OF THE PROGRAM :

```
import random

import math

# Taking Inputs

lower = int(input("Enter Lower bound:- "))

# Taking Inputs

upper = int(input("Enter Upper bound:- "))

# generating random number between

# the lower and upper


x=random.randint(lower, upper)

print("\n\tyou've only",

      round(math.log(upper - lower+1,2)),

      "changes to guess the integer!\n")


# initializing the number of guesses.

count = 0


# for calculation of minimum number of

# guesses depends upon range

while count <math.log(upper - lower + 1,2):

    count += 1


    # taking guessing number as input
```


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```
guess = int(input("Guess a number:- "))


# condioning testing
if x == guess:
    print("Congratulations you did it in ",
          count, " try")
    # once guessed, loop will break
    break
elif x > guess:
    print("You Guessed too small!")
elif x < guess:
    print("You Guessed too high!")

# If guessing is more than required guesses,
# shows this output.
if count >= math.log(upper - lower + 1,2):
    print("\nThe number is %d" % x)
    print("\tBetter Luck Next time!")


# Better to use this source code on pycharm!
```


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OUTPUT OF THE PROGRAM:

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```
========== RESTART: C:/Users/Bharath/bharath python g
Enter Lower bound:- 1
Enter Upper bound:- 100

        you've only 7 changes to guess the integer!

Guess a number:- 50
You Guessed too high!
Guess a number:- 75
You Guessed too high!
Guess a number:- 62
You Guessed too high!
Guess a number:- 56
You Guessed too high!
Guess a number:- 53
You Guessed too high!
Guess a number:- 54
You Guessed too high!
Guess a number:- 78
You Guessed too high!

The number is 48
        Better Luck Next time!
>>>
```


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