Guess The Number game in JAVA

A JAVA PROGRAMMING LABORATORY PROJECT REPORT SUBMITTED IN PARTIAL FULFILMENT FOR THE AWARD OF THE DEGREE OF BACHELOR OF TECHNOLOGY

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CERTIFICATE

This is to certify that the project titled "Guess the number game in Java" is being submitted, by 21071A66D7-Budidha Laxman, 21071A66E2 – Gudipati Manikesh, 21071A66F4 – Madasi Tharun Kumar, 21071A66F6 – Manne Poojith Chowdary, 21071A66G1 – Morampudi Buddu Uday, 21071A66G3 – Nagireddi Mahideep, 21071A66K0 – Vangala Venkata Sai Laxman **in partial fulfilment of the requirement for the award of degree of Bachelor of Technology, to the JAVA LABORATORY at the VALLURUPALLI NAGESWARA RAO VIGNANA JYOTHI INSTITUTE OF ENGINEERING AND TECHNOLOGY is a record of *bona fide* work carried out by them under our pedagogy. The results embodied in this thesis have not been submitted to any other University or Institute for the award of any degree.**

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Assistant Professor

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Title: **Guess The Number**

Introduction:

A number guessing game is a mini-project for random number generation and conditional statements with iteration as well as binary search.

Objective:

The number guessing game is built on the player's notion to estimate a numberbetween the **provided** range. If the player predicts the desired number, the player wins; otherwise, the player loses the game. Since this game has limited efforts thus, the player needs to indicate the number with the **limited** attempts. Otherwise, the player will **lose** the game.

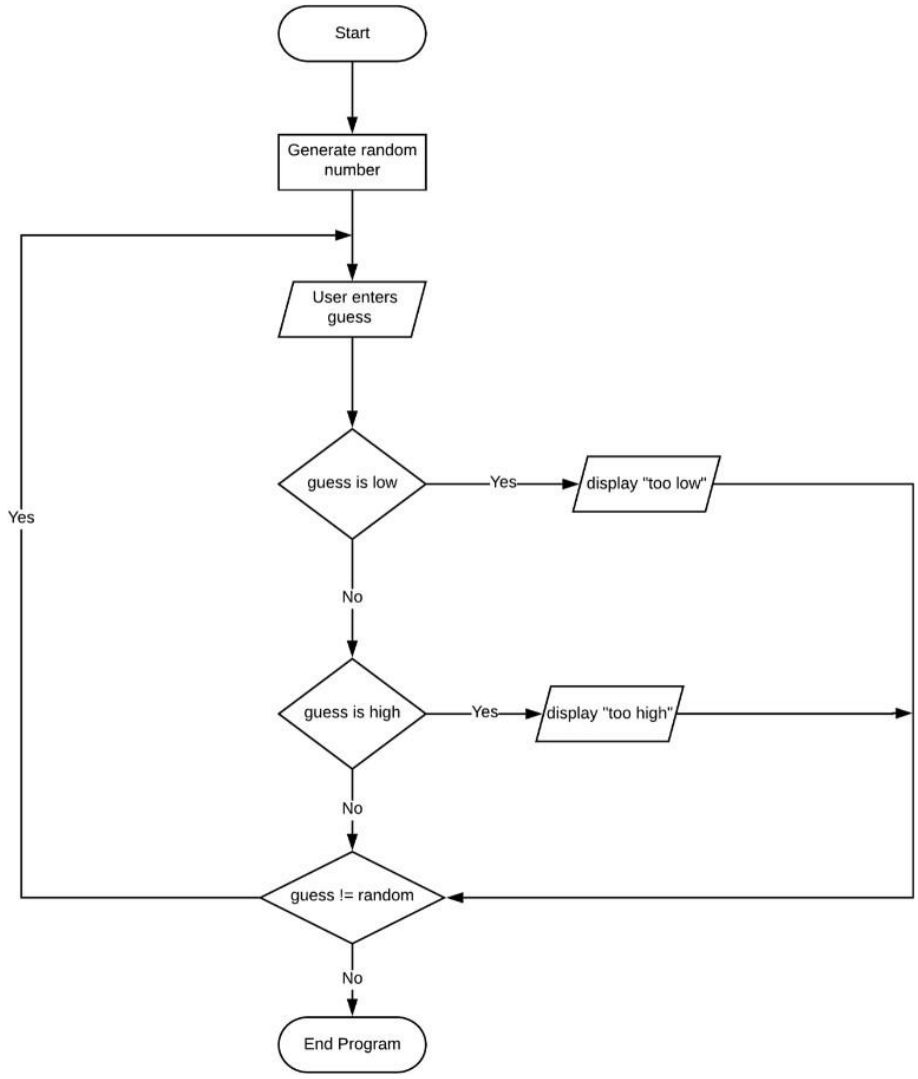
Methodology:

To achieve the objective of this project, the following steps were taken:

1. You must input only valid integers within the provided range.
2. You will be granted limited tries to estimate the number.
3. You cannot exit the game once begun.

If the input number is less than or more significant than the **needed** number, theplayer receives the message (hint) to move further in up or down range.

UML DIAGRAM (ACTIVITY)



Code:

```
import java.util.Scanner;import
java.util.Random;

public class GuessNumber {

   public static void main(String[] args) {

   Scanner sc = new Scanner(System.in);

   Random rand = new Random();
      System.out.print("Min: ");
      int lowerLimit = sc.nextInt();
      System.out.print("Max:  ");
      int upperLimit = sc.nextInt();
      int myNumber = rand.nextInt(upperLimit - lowerLimit + 1) + lowerLimit;
      int count = 0;
      while (true) {
         count++;
         System.out.print("Guess the number: ");
         int userNumber = sc.nextInt();
         if (userNumber < myNumber) {
            System.out.println("Too small!");
         } else if (myNumber < userNumber) {
            System.out.println("Too large!");
         } else {
            System.out.println("Yeeee ! You got it in " + count + " tries!");

            break;
         }
      }
      sc.close();
   }
```

Test Cases:

TEST CASE-1 **PASSED**

Total Guesses: 5

Enter the lower range: 0

Enter the upper range: 10

Enter an integer between the given range: 4

The number guessed is high

Enter an integer between the given range: 2

The number guessed is right

Total guesses taken: 2

TEST CASE-2 **PASSED**

Total Guesses: 5

Enter the lower range: 10

Enter the upper range: 100

Enter an integer between the given range: 50

The number guessed is high

Enter an integer between the given range: 40

The number guessed is low

Enter an integer between the given range: 45

The number guessed is low

Enter an integer between the given range: 47

The number guessed is low

Enter an integer between the given range: 49

Ran out of tries!

Testing:

We first produce a random number between a **defined** range in such a game. We askthe user to estimate this number. If the guess is accurate, we report that the guess is correct and break out of the loop. Else we specify whether the number is less or more significant than the actual number. We also ask the user for the total guesses they are authorized to take. When the number of guesses surpasses this,
we **break** off the loop.

The user may make use of this to know the **actual** number. For example, if the user guesses that the number is 45 and the result is that the **exact** number is smaller than 69, the user might infer that the number won't lie between 69 and 100 (provided that the range is up to 100). (given that the content is till 100). This way, the user may keep guessing and interpreting the outcome. We publish the number of **guesses** it takes the user to get the answer correctly.

Conclusion:

The program(Guess The Number) in Java was successfully implemented and tested. The program allows a human player to play against the computer, or human player to play against a human player.