**Task 2: Number Guessing Game**

**Objective:** To develop a simple number guessing game in Java.

**Functionality:** In this program the computer generates a random number by default then the user need guess the number under 5 guesses.

**Description:**

* In Java, Scanner is a class in java.util package used for obtaining the input of the primitive types like int, double, etc. and strings.
* Using the Scanner class in Java is the easiest way to read input in a Java program, though not very efficient if you want an input method for scenarios where time is a constraint like in competitive programming.
* If the guessed number is bigger than the actual number, the program will respond with the message that the guessed number is higher than the actual number.
* If the guessed number is smaller than the actual number, the program will respond with the message that the guessed number is lower than the actual number.
* If the guessed number is equal to the actual number or if the **K** trials are exhausted, the program will end with a suitable message.

**Program Code:**

import java.util.Scanner;

public class GuessingGame {

// Function that implements the

// number guessing game

public static void

guessingNumberGame()

{

// Scanner Class

Scanner sc = new Scanner(System.in);

// Generate the numbers

int number = 1 + (int)(100\* Math.random());

// Given K trials

int K = 5;

int i, guess;

System.out.println("A number is chosen"+ " between 1 to 100."+ "Guess the number"+ " within 5 trials.");

// Iterate over K Trials

for (i = 0; i < K; i++) {

System.out.println("Guess the number:");

// Take input for guessing

guess = sc.nextInt();

// If the number is guessed

if (number == guess) {

System.out.println(

"Congratulations!"

+ " You guessed the number.");

break;

}

else if (number > guess

&& i != K - 1) {

System.out.println(

"The number is "

+ "greater than " + guess);

}

else if (number < guess

&& i != K - 1) {

System.out.println(

"The number is"

+ " less than " + guess);

}

}

if (i == K) {

System.out.println("You have exhausted"+ " K trials.");

System.out.println("The number was " + number);

}

}

// Driver Code

public static void main(String arg[])

{

// Function Call

guessingNumberGame();

}

}

**Output:**

A number is chosen between 1 to 100.Guess the number within 5 trials.

Guess the number:

20

The number is greater than 20

Guess the number:

30

The number is greater than 30Guess the number:

40

The number is less than 40

Guess the number:35

Congratulations! You guessed the number.