OASIS INFOBYTE INTERNSHIP PROGRAM

# Domain: Java Development

# Task: Number Guessing Game

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## Introduction

This document presents the Number Guessing Game project completed during my Java Development Internship at Oasis Infobyte.

The project demonstrates the implementation of a console-based game where the user guesses a randomly generated number.

## Objective

To create a Java program that generates a random number and allows the user to guess it, providing feedback (“too high” or “too low”) and limiting the number of attempts.

## Tools and Technologies

**Language:** Java

**IDE:** VS Code

**Core Concepts:** Loops, Conditionals, Random number generation, Input validation

## Steps Performed

1. Initialized Random to generate a number between 1–100.
2. Implemented **Scanner** for user input.
3. Added **input validation** to handle non-integer inputs.
4. Created a **while loop** to allow up to 10 guesses.
5. Provided **feedback**: “Too high” or “Too low”.
6. Calculated a **simple score** based on remaining attempts.
7. Displayed the correct number and score after game ends.

## Code Implementation

import java.util.Scanner;

import java.util.Random;

public class NumberGuessingGame {

public static void main(String[] args) {

Scanner scanner = new Scanner(System.in);

Random random = new Random();

System.out.println("Welcome to the Number Guessing Game!");

System.out.println("I'm thinking of a number between 1 and 100.");

int numberToGuess = random.nextInt(100) + 1; // Random number from 1 to 100

int numberOfAttempts = 0;

int maxAttempts = 10; // Limit number of attempts

boolean hasGuessedCorrectly = false;

while (numberOfAttempts < maxAttempts) {

System.out.print("Enter your guess: ");

int userGuess;

// Input validation

try {

userGuess = Integer.parseInt(scanner.nextLine());

} catch (NumberFormatException e) {

System.out.println("Please enter a valid integer.");

continue;

}

numberOfAttempts++;

if (userGuess < numberToGuess) {

System.out.println("Too low! Try again.");

} else if (userGuess > numberToGuess) {

System.out.println("Too high! Try again.");

} else {

hasGuessedCorrectly = true;

break;

}

System.out.println("Attempts left: " + (maxAttempts - numberOfAttempts));

}

if (hasGuessedCorrectly) {

int score = (maxAttempts - numberOfAttempts + 1) \* 10; // Simple scoring

System.out.println("Congratulations! You guessed the number " + numberToGuess + " correctly.");

System.out.println("Your score: " + score);

} else {

System.out.println("Sorry! You've used all attempts. The number was " + numberToGuess + ".");

}

System.out.println("Thank you for playing!");

scanner.close();

}

}

## Output

User sees prompts in console to guess a number.

Program responds with hints and number of attempts left.

Displays success message with score or the correct number if failed.

### **Conclusion**

This project helped me practice Java fundamentals, such as loops, conditionals, input handling, and random number generation. It strengthened my ability to write interactive console programs.