INDIRA GANDHI DELHI TECHNICAL UNIVERSITY FOR WOMEN

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

Object Oriented Programming (BIT 204)

Project Title : 5-Try Number Hunt

Submitted to -

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INTRODUCTION

This project is a simple and interactive console-based number guessing game built using Java. The game challenges the player to guess a randomly generated number between 1 and 100 within a limited number of attempts. It provides hints when the player is close to the correct number and encourages repeated gameplay with a replay option. The project is designed to demonstrate the basic concepts of programming such as conditional statements, loops, user input handling, and random number generation.

OBJECTIVE

The main objective of this project is to:

- Develop a basic Java-based game that improves logical thinking.
- Apply fundamental programming constructs such as loops, conditionals, and functions.
- Learn how to take input from users and display output in a user-friendly way.
- Practice implementing a replayable game structure using `do-while` loops and `Scanner` for input.

KEY FEATURES

The Number Guessing Game project includes several key features that enhance both usability and functionality:

🎯 Random Number Generation

- Every game session starts with a new random number from 1 to 100.
- Ensures unpredictability and freshness with every new round.

□ Attempt Limitation

- Players are allowed only 5 attempts per game to guess the number correctly.
- Encourages efficient guessing strategies.

💡 Hint Mechanism

- If the player's guess is within ±5 of the correct number, the game provides a hint: "You're very close!"
- Helps the player feel engaged and motivated even if the answer is wrong.

📢 Feedback System

- Real-time feedback is provided after each guess to inform the player whether their guess is too high or too low.
- Encourages learning through trial and error.

🔁 Replay Option

- At the end of each game, the user is prompted with an option to play again.
- Enhances user retention and session time.

✔ Input Handling

- Uses the `Scanner` class to collect user input efficiently.
- Ensures a smooth user experience with clear instructions.

CODE

```
import java.util.Scanner;


public class Main {
   public static void main(String[] args) {


      Scanner sc = new Scanner(System.in);
      String playAgain;


      do {
         int myNumber = (int) (Math.random() * 100) + 1; // Random number from 1 to 100
         int userNumber = 0;
         int attempts = 0;
         int maxAttempts = 5;


         System.out.println("===== Hi, Welcome to the Number Guessing Game! =====");
         System.out.println("You have " + maxAttempts + " attempts to guess the number (1-100).");


         do {
```

```
            System.out.print("Guess Number (1-100): ");
            userNumber = sc.nextInt();
            attempts++;

            if (userNumber == myNumber) {
               System.out.println("WOOHH....YOU'VE GOT THE
CORRECT NUMBER!!");
               System.out.println("You guessed it in " + attempts
+ " attempts!");
               break;
            } else if (userNumber > myNumber) {
               System.out.println("Your Number is too large");
            } else {
               System.out.println("Your Number is too small");
            }

            // providing hint if the guess is close :- within 5
            if (Math.abs(userNumber - myNumber) <= 5 &&
userNumber != myNumber) {
               System.out.println("Hint : You're very close");
            }

            if (attempts == maxAttempts) {
```

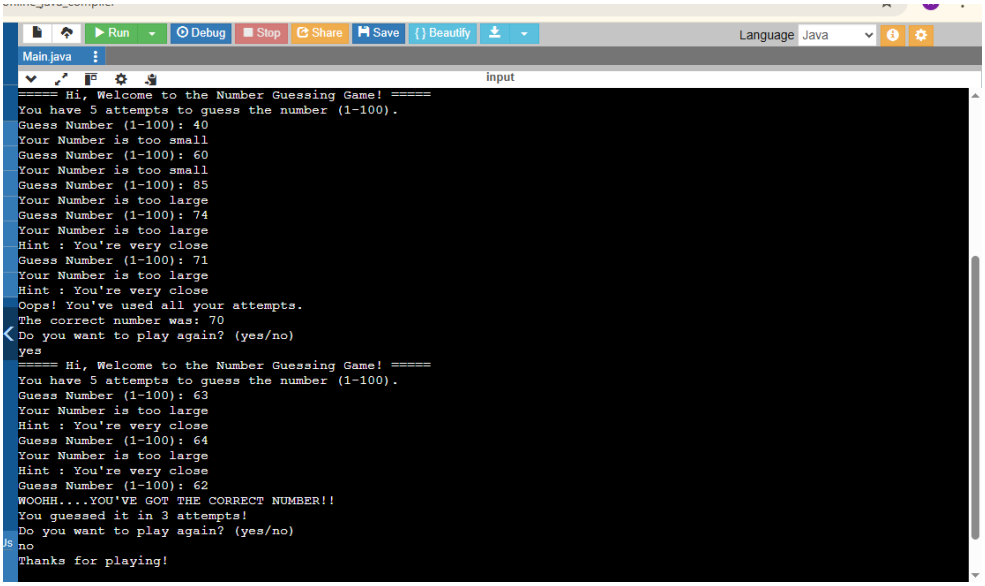
```
                System.out.println("Oops! You've used all your
attempts.");
                System.out.println("The correct number was: " +
myNumber);
                break;
            }
        } while (userNumber >= 0);


        System.out.println("Do you want to play again?
(yes/no)");
        playAgain = sc.next();


    } while (playAgain.equalsIgnoreCase("yes"));


    System.out.println("Thanks for playing!");
    sc.close();
  }
}
```

OUTPUT


Run
Debug
Stop
Share
Save
{ } Beautify
Language
Java
Main java
input
===== Hi, Welcome to the Number Guessing Game! =====
You have 5 attempts to guess the number (1-100).
Guess Number (1-100): 40
Your Number is too small
Guess Number (1-100): 60
Your Number is too small
Guess Number (1-100): 85
Your Number is too large
Guess Number (1-100): 74
Your Number is too large
Hint : You're very close
Guess Number (1-100): 71
Your Number is too large
Hint : You're very close
Oops! You've used all your attempts.
The correct number was: 70
Do you want to play again? (yes/no)
yes
===== Hi, Welcome to the Number Guessing Game! =====
You have 5 attempts to guess the number (1-100).
Guess Number (1-100): 63
Your Number is too large
Hint : You're very close
Guess Number (1-100): 64
Your Number is too large
Hint : You're very close
Guess Number (1-100): 62
WOOHH....YOU'VE GOT THE CORRECT NUMBER!!
You guessed it in 3 attempts!
Do you want to play again? (yes/no)
no
Thanks for playing!