AI-Based Number Guessing Game

Title: AI-Based Number Guessing Game

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Introduction

Overview

An AI-Based Number Guessing Game is an interactive game where a user attempts to guess a randomly selected number. The AI provides feedback to guide the user toward the correct answer.

Purpose

The purpose of this game is to demonstrate the use of Python programming and AI-based decision-making techniques to create an engaging and interactive experience.

Applications

- Enhancing logical thinking skills
- Learning basic AI-based decision-making
- Understanding number prediction algorithms

Methodology

Tools & Technologies Used

- **Programming Language:** Python
- **Libraries:** Random, Time
- **Development Environment:** Jupyter Notebook / PyCharm / VS Code

How It Works

1. The AI selects a random number within a predefined range.
2. The player enters a guess.
3. The AI provides hints (higher or lower) to guide the player.
4. The game continues until the correct number is guessed.
5. The program displays the number of attempts taken by the player.

Code Typed

```python
import random

def number_guessing_game():
    print("Welcome to the AI-Based Number Guessing Game!")
    number = random.randint(1, 100)
    attempts = 0

    while True:
        try:
            guess = int(input("Enter your guess (between 1 and 100): "))
            attempts += 1

            if guess < number:
                print("Too low! Try again.")
            elif guess > number:
                print("Too high! Try again.")
            else:
                print(f"Congratulations! You guessed the number in {attempts}
attempts.")
                break
        except ValueError:
            print("Invalid input! Please enter a number.")

number_guessing_game()
```

About game step

1. **Game Start Screen** - Displays welcome message.
2. **User Input & AI Feedback** - Shows hints for user guesses.
3. **Winning Screen** - Displays the total attempts taken.

Conclusion

This AI-Based Number Guessing Game demonstrates the use of Python programming and AI-based decision-making techniques. It enhances problem-solving skills and provides an interactive way to learn about random number generation and conditional logic in programming.