Number Guessing Game - Project Report

Project Overview

The Number Guessing Game is a simple Python program where the user guesses a randomly generated secret number within a specified range (1 to 25). The user has 10 attempts to guess correctly. The program provides feedback whether the guess is too high, too low, or correct. If the user guesses correctly, they are congratulated and shown how many attempts it took. If not, the secret number is revealed.

Duration

Initial Setup: 50 minutes (setup, random number generation, user input).

Coding & Debugging: 2-3 hours (implementing functions, error handling, loops).

Testing & Refining: 40 minutes (validating input, edge cases).

Total Estimated Time: 4-5 hours.

Outcome

The game includes:

User-Friendly Input: Only valid numbers within the range are accepted.

Easy : The game is very easy to play.

Attempt Tracking: The game tracks the number of attempts.

Error Handling: Invalid inputs are handled without crashing the game.

The project helps users learn Python fundamentals like loops, conditionals, and functions.

Challenges

Input Validation: Ensuring valid inputs was tricky. A try-except block was used to handle non-numeric or out-of-range inputs.

Attempt Management: Limiting the guesses to 10 attempts was handled with a simple counter.

User Experience: Clear feedback was necessary for a smooth gaming experience.

Testing: Edge cases like the lowest and highest numbers had to be tested thoroughly.

Conclusion

The Number Guessing Game is a fun and educational Python project. It demonstrates core programming concepts and provides an engaging experience for users. Future expansions could include difficulty levels, a GUI, and high score tracking.