CAPITAL UNIVERSITY OF SCIENCE AND TECHNOLOGY

(DEPARTMENT OF COMPUTER AND ELECTRICAL ENGINEERING)

PROJECT REPORT

MEMBERS:

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SUBMITTED TO :

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PROJECT TITLE	NUMBER GUESSING GAME WITH SCORE TRACKING
COURSE TITLE	ICT

IDEA:

1. **Difficulty Levels**:
   a. Add easy, medium, and hard modes with different number ranges (e.g., 1-50, 1-100, 1-500).
2. **High Score System**:
   a. Track the highest score across multiple sessions and display it at the end of the game.
3. **Hints**:
   a. Provide helpful hints like "too high" or "too low" after each guess to assist players.
4. **Time-Based Scoring**:
   a. Reward faster guesses by giving more points for quicker answers.
5. **Leaderboard**:
   a. Track top scores for different players and display a leaderboard after the game.
6. **Multiple Rounds**:
   a. Play multiple rounds with a cumulative score that increases with each correct guess.

7. **Player Profiles**:
    a. Let players create profiles with their names, and track their best scores.
8. **Interactive UI**:
    a. Create a graphical interface using libraries like SFML or Qt for a more interactive experience.
9. **Cheat Mode**:
    a. Allow players to skip rounds but penalize them by lowering their score.

These features can make the game more fun, competitive, and engaging.

OBJECTIVES:

1. **Gameplay**: Let players guess a random number and provide feedback (too high, too low, correct).
2. **Score Tracking**: Track and display scores based on the number of attempts.
3. **Replay ability**: Allow the player to play again with a new random number.
4. **Difficulty Levels**: Offer easy, medium, and hard modes with different number ranges.
5. **Hints**: Provide hints like "too high" or "too low" after each guess.
6. **High Score**: Track and display the highest score across sessions.
7. **Time-Based Scoring**: Reward faster guesses with more points.

8. **Multiple Rounds**: Allow multiple rounds with cumulative scores.
9. **User Engagement**: Encourage replaying with motivational feedback.
10. **Data Persistence**: Optionally save high scores or player profiles.

These objectives will make the game engaging and fun!

APPLICATION:

The **Number Guessing Game with Score Tracking** challenges players to guess a randomly selected number within a range. It provides feedback on each guess and tracks the player's score based on the number of attempts. Players can choose difficulty levels, with hints provided to help narrow down their guesses. The game also tracks high scores and allows players to play multiple rounds, making it both engaging and competitive.

VS CODE:

```cpp
#include <iostream>

#include <cstdlib>

#include <ctime>


using namespace std;
```

```cpp
void playGame(int& score) {

    int targetNumber, guess, attempts = 0;

    const int MAX_NUMBER = 100;


    targetNumber = rand() % MAX_NUMBER + 1;


    cout << "Welcome to the Number Guessing Game!\n";

    cout << "Guess the number between 1 and " << MAX_NUMBER <<
".\n";


    do {

        cout << "Enter your guess: ";

        cin >> guess;

        attempts++;


        if (guess < targetNumber) {

            cout << "Too low! Try again.\n";

        }
```

```cpp
        else if (guess > targetNumber) {

            cout << "Too high! Try again.\n";

        }

        else {

            cout << "Congratulations! You guessed the correct number "
<< targetNumber << " in " << attempts << " attempts.\n";

        }

    } while (guess != targetNumber);



    score += (MAX_NUMBER - attempts);

    cout << "Your current score is: " << score << "\n";
}



int main() {
    srand(time(0));


    int score = 0;

    char playAgain;
```

```cpp
    do {

        playGame(score);


        cout << "Do you want to play again? (y/n): ";

        cin >> playAgain;


    } while (playAgain == 'y' || playAgain == 'Y');


    cout << "Thanks for playing! Your final score is: " << score <<
"\n";


    return 0;

}
```

OUTPUT:

```
C:\Users\Aoun Abbas\source\    ×    +    ∨

Welcome to the Number Guessing Game!
Guess the number between 1 and 100.
Enter your guess: 12
Too low! Try again.
Enter your guess: 67
Too high! Try again.
Enter your guess: 50
Too high! Try again.
Enter your guess: 45
Too high! Try again.
Enter your guess: 40
Too high! Try again.
Enter your guess: 30
Too high! Try again.
Enter your guess: 20
Too low! Try again.
Enter your guess: 23
Too low! Try again.
Enter your guess: 25
Too low! Try again.
Enter your guess: 26
Too low! Try again.
Enter your guess: 27
Congratulations! You guessed the correct number 27 in 11 attempts.
Your current score is: 89
Do you want to play again? (y/n): |
```