TRIBHUVAN UNIVERSITY INSTITUTE OF ENGINEERING PURWANCHAL CAMPUS DHARAN

TIC TAC TOE GAME WITH LOGIN

A COURSE PROJECT SUBMITTED TO THE DEPARTMENT OF ELECTRONICS AND COMPUTER ENGINEERING IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE PRACTICAL COURSE ON

OBJECT ORIENTED PROGRAMMING (C++) [CT 151]

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1 Introduction

We propose to develop an interactive **Tic Tac Toe Game with Login and Statistics Tracking** using C++. This project provides both entertainment and learning by combining a classic two-player board game with a login system that stores each player's performance. Users will be able to create accounts, log in, play games, and view their progress through statistics and progress bars.

1.1 Objective

1. To create a Tic Tac Toe game where players can log in and compete.
2. To use C++ to handle game logic and file handling for data persistence.
3. To track player statistics (wins, losses, draws) and display them visually.
4. To provide a simple but effective demonstration of OOP, file handling, and user interaction.

2 Existing System

Traditional Tic Tac Toe is usually played with pen and paper or in simple programs without persistent storage. Most existing digital versions allow gameplay but do not save progress or show detailed statistics. Our system enhances this by introducing a **login system**, **persistent stats storage**, and **progress bar visualization** of performance.

3 Proposed System

The proposed system is a console-based Tic Tac Toe game developed in C++. It emphasizes **gameplay plus account handling**.

Key features of our application include:

- **User-Friendly Interface**: Simple console-based design with clear menus.
- **Login & Registration**: New players can register, and existing players can log in. Duplicate usernames are not allowed.
- **Gameplay**: Two players compete in classic Tic Tac Toe.
- **Persistent Statistics**: Wins, losses, and draws are saved for each user using file handling.
- **Progress Bar Visualization**: Player performance is shown using coloured progress bars.
- **Security**: Prevents duplicate usernames and ensures correct password entry.

4 Methodology

4.1 Development Tools

- **Programming Language**: C++
- **IDE**: Visual Studio Code
- **Compiler**: MinGW (Windows)

4.2 Development Process

- **Requirement Analysis**: Identify features (login, gameplay, stats).
- **System Design**: Use classes (Player) and modular functions (login, play, stats).
- **Implementation**: Develop using C++ OOP and file handling.
- **Testing**: Verify login, game outcomes, and file persistence.
- **Deployment**: Console-based offline program.
- **Maintenance**: Players' stats are stored in a text file for future runs.

5 Project Scope

- **Core Features:**

  Login, gameplay, persistent statistics, progress bar visualization.
- **Assumptions:**

  Users will provide valid input (e.g., entering numbers 1–9 for moves).
- **User Interface:**

  Simple text-based menu system.
- **Security Considerations:**

  Username uniqueness and password verification.

6 Project Schedule

6.1 Timeline

Phase	Duration
Requirement Analysis	1 Day
System Design	2 Days
Implementation	4 Days
Testing	2 Days
Deployment	1 Day
Total	**10 Days**