

Title: Object-Oriented Tic Tac Toe Game Implementation in C++

Abstract:

This project presents the implementation of a Tic Tac Toe game in C++ utilizing Object-Oriented Programming (OOP) concepts. The game allows two players to take turns marking spaces on a 3x3 grid, and the first player to achieve a winning pattern or fill the entire grid results in the end of the game.

Introduction:

Tic Tac Toe is a classic game that provides a simple yet engaging challenge for two players. The project focuses on incorporating OOP principles to enhance code organization, readability, and maintainability. The game features a user-friendly interface, dynamic player input, and a robust win-detection mechanism.

Object Oriented Design:

The code employs a basic object-oriented design with a single class encapsulating the game's functionality. The class includes private data members, member functions, and encapsulates the logic for drawing the game chart, determining the winner, and managing player turns.

Implementation Details:

Game Initialization:

The game initializes with a 3x3 grid represented by an array of characters.

Players are prompted to enter their names before starting the game.

Main Game Loop:

The main game loop alternates between players until a winner is determined or the game ends in a draw.

Players take turns marking spaces on the board by entering a number corresponding to the desired cell.

Win-Detection:

The winner function checks for winning patterns horizontally, vertically, and diagonally.

If no winner is found and the board is filled, the game is declared a draw.

User Interface:

The GameChart function displays the current state of the board after each move.

The interface is clear and user-friendly, providing a visual representation of the game.

Conclusions:

This project successfully implements a Tic Tac Toe game using OOP concepts in C++. The code is structured, modular, and easy to understand, making it a suitable foundation for further enhancements or modifications. The game provides an enjoyable experience for two players while demonstrating the benefits of object-oriented design in software development.