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**Abstract**

This proposal outlines the development of a Tic-Tac-Toe game using coding. The project aims to create a user-friendly and interactive digital version of the classic game, providing an engaging experience for players of all ages. Through this endeavor, we seek to explore the application of coding principles in game development and provide insights into the process of designing and implementing a simple yet enjoyable game.

**List of Figures**

Figure 1: Wireframe of the Tic-Tac-Toe game interface

Figure 2: Flowchart depicting the game logic

Figure 3: Screenshots of the implemented game interface

Chapter 1: Introduction

**1.1 Background**

Tic-Tac-Toe, also known as noughts and crosses, is a widely popular game enjoyed by people worldwide. It is a simple yet challenging game played on a 3x3 grid, where two players take turns marking spaces with their respective symbols, typically X and O, aiming to create a horizontal, vertical, or diagonal line. With the advancement of technology, digital adaptations of traditional games have become increasingly prevalent, offering convenient ways to play anytime, anywhere.

**1.2 Problem Statement**

While numerous digital versions of Tic-Tac-Toe exist, there is a lack of customizable and user-friendly implementations that cater to diverse preferences and skill levels. Additionally, many existing implementations lack features such as AI opponents, multiplayer modes, or customizable game settings, limiting the overall user experience.

**1.3 Objectives**

Develop a digital version of Tic-Tac-Toe with a user-friendly interface.

Implement customizable game settings, including difficulty levels and player options.

Incorporate an AI opponent with adjustable difficulty settings.

Provide a multiplayer mode for users to play against each other online or locally.

Enhance the game with visually appealing graphics and animations.

**1.4 Application**

The proposed Tic-Tac-Toe game has the potential for various applications, including:

Entertainment: Providing users with an enjoyable and interactive gaming experience.

Educational: Teaching coding concepts through practical implementation in game development.

Social: Facilitating multiplayer interactions and friendly competitions among players.

**Chapter 2: Literature Review**

This chapter will explore existing digital implementations of Tic-Tac-Toe games, analyzing their features, strengths, and weaknesses. Additionally, it will review relevant literature on game development principles, coding techniques, and AI algorithms applicable to our project.

**Chapter 3: Methodology**

**3.1 System Overview**

This section will provide an overview of the proposed system architecture, including the frontend interface, backend logic, and integration of AI algorithms.

**Chapter 4: Epilogue**

**4.1 Expected Output**

We anticipate delivering a fully functional Tic-Tac-Toe game with intuitive gameplay mechanics, customizable features, and visually appealing graphics.

**4.2 Budget Analysis**

The project will primarily rely on open-source tools and libraries, minimizing costs associated with software licenses. However, potential expenses may include server hosting fees for multiplayer functionality and outsourcing graphical assets if necessary.

**4.3 Time Schedule**

A detailed timeline will be established to guide the development process, allocating specific tasks and milestones to ensure timely completion of the project.

**Chapter 5: Conclusion**

This chapter will summarize the key findings, contributions, and limitations of the project, as well as suggestions for future enhancements and research directions.

**References**

A comprehensive list of references will be provided, citing relevant sources consulted during the literature review and project development.