National University of Computer & Emerging Sciences
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Ludo Miz,Dice Enhancer Powerup

Project Proposal
Artificial Intelligence
Section: E

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Project Proposal

Introduction

This project involves developing a digital version of Ludo, named **Ludo Miz**, with a unique twist: the **Dice Enhancer Power-Up**. The system will maintain the classic board game mechanics of Ludo while introducing creative modifications that add strategic depth and enhance user engagement. The core objective is to create a fun, interactive, and easily accessible digital board game that stands out with its innovative power-up feature.

Existing System

Digital versions of Ludo are widely available and typically follow the traditional rules of the game. These systems usually include:

- Standard dice roll mechanics with a single die.

- Fixed board designs with predetermined pathways.

- Basic multiplayer modes (either local or online) without additional gameplay enhancements.

While these systems successfully replicate the classic game, they lack innovative features that can elevate player strategy and interactivity.

Problem Statement

The main discrepancies in existing Ludo implementations are:

- **Lack of Dynamic Gameplay:** Traditional systems offer limited strategic choices, with gameplay largely dependent on chance.

- **Minimal Interactive Features:** Existing digital versions rarely introduce unique mechanics that add depth to the game experience.

To address these issues, the proposed project will introduce the **Dice Enhancer Power-Up**, a feature designed to inject an element of strategy and excitement into each game turn.

Proposed Solution

The proposed solution is to integrate the **Dice Enhancer Power-Up** into the game as follows:

1. **Activation Mechanism:**
   When a player's piece lands on a designated "power-up" tile (marked with a unique icon or color), the Dice Enhancer is activated.

2. **Enhanced Dice Roll:**
   Instead of the standard single dice roll, the game automatically rolls another dice simultaneously.

3. **Game Balance:**
   The Dice Enhancer will be available only on specific tiles or limited in frequency (e.g., once per game or per certain number of turns) to maintain game balance.

This feature not only adds a fresh twist to the classic game but also encourages players to plan their moves more strategically.

Salient Features

- **Classic Ludo Gameplay:** Retains the traditional elements of Ludo while modernizing the user interface.

- **Dice Enhancer Power-Up:**

  - Activates on designated power-up tiles.

  - Rolls second dice
- **Interactive Board Design:**

  - Visually appealing layout with clear markings for power-up zones.

○ Animated transitions and sound effects for a more immersive experience.

● **Multiplayer Functionality:**

○ Supports local multiplayer gameplay.
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● **Customization Options:**

○ Pre-game settings for adjusting game modes (e.g., easy vs. hard) by modifying power-up frequency and board layout.

Tools & Technologies

● **Programming Language:**

○ **Python:** Utilizing Tkinter for a desktop GUI application(possible).
○ Html, CSS, Javascript is another option

● **Frameworks & Libraries:**

○ **Tkinter:** For developing the desktop interface in Python.

○ **Bootstrap/React:** If opting for a web version.

● **Operating System:**

○ The project will be developed to be compatible with **Windows, Linux, and macOS**.

● **Development Tools:**

○ **Visual Studio Code** or any preferred IDE.

○ **Git** for version control.