



**National University of Computer & Emerging
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**Rock-Paper-Scissors Board Game –
Python-Based Turn-Based Strategy Game**

**Project Proposal
Artificial Intelligence
Section: E**

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Project Proposal

• Introduction:

The Rock-Paper-Scissors Board Game is a **Python-based turn-based strategy game** inspired by the classic Rock-Paper-Scissors mechanics. Players place and move **Rock (R), Paper (P), and Scissors (S)** pieces on a **6x6 grid**, competing to eliminate opponents using the traditional rules:

- **Rock beats Scissors**
- **Scissors beats Paper**
- **Paper beats Rock**

The game will initially be developed as a **terminal-based application** for simplicity and testing and might include a **graphical user interface (GUI)** for potential future enhancements.

• Existing System:

Similar systems include traditional Rock-Paper-Scissors games and grid-based strategy games. However, most existing implementations are either:

- Simplistic (single-round RPS) without strategic depth.
- Complex board games that deviate from the core RPS mechanics.

This project bridges the gap by combining simple rules with strategic gameplay on a grid-based board.

• Problem Statement:

The existing systems lack:

1. Strategic movement mechanics (e.g., piece placement and movement on a grid).
2. Multiplayer turn-based interactions beyond the basic RPS duel.
3. Scalability for more than two players (e.g., 3-player mode).

This project aims to address these gaps.

- **Proposed Solution:**

The proposed solution includes:

- A 6x6 grid board represented as a 2D array.
- Turn-based gameplay where players move pieces (up, down, left, right).
- Combat resolution based on RPS rules (winning piece stays, losing piece is removed).
- 3-player mode as a modification requirement.
- Randomized starting positions for fairness.

Future enhancements may include a GUI for improved user experience.

- **Salient Features:**

- Basic Movement & Turn-Based System
- Combat Resolution (Rock-Paper-Scissors Rules)
- Terminal-Based Board Display
- Randomized Starting Positions
- 3-Player Mode Support

- **Tools & Technologies:**

- Programming Language: Python
- Libraries:
 - random (for randomized piece placement)
 - numpy (optional, for grid handling)