

**Name :- Ayush Shukla**

**Reg No. :- 25BAI10014**

# 1. INTRODUCTION

The "Rock, Paper, Scissors" game is a widely known hand game usually played between two people, where each player simultaneously forms one of three shapes with an outstretched hand. This project aims to digitize this experience by creating a console-based application where a single user can play against an automated computer opponent.

The project is developed using the **Python** programming language. It utilizes fundamental programming concepts such as loops, conditional statements, and library imports to create an interactive game.

The logic of the game is based on the standard rules:

- **Rock** crushes **Scissors**.
- **Scissors** cuts **Paper**.
- **Paper** covers **Rock**.

If both players choose the same shape, the game is tied (a draw)

# 2. OBJECTIVES

The primary objectives of this project are:

1.  
To develop a working game application using Python.
2.  
To understand the practical implementation of the random module for generating unpredictable results.
3.  
To learn how to handle user input and validate it to prevent program errors.
4.  
To implement logic using if-elif-else ladder to determine the winner.
5.  
To use while loops to create a continuous game session that runs until the user decides to quit.

## 3. SCOPE

**Current Scope:** The current version of the project allows a single player to play against the computer in a Command Line Interface (CLI) environment. It handles input validation (case insensitivity) and score calculation per round.

**Future Scope:**

- **GUI Implementation:** The game can be upgraded using Tkinter to provide a graphical interface with buttons and images.
- **Scoreboard:** A persistent scoreboard can be added to track the total number of wins and losses across multiple sessions.

- **Multiplayer:** The project can be expanded to support two human players on the same machine.

## 4. Conclusion

The **Rock, Paper, Scissors** project was successfully designed and implemented using Python. The program runs efficiently, handling user inputs and generating random computer moves without errors. This project helped in solidifying the concepts of Python syntax, loops, conditional statements, and logical operator usage. It serves as a strong foundation for building more complex logic-based games in the future.