Mini Project Report

Python Mini Project: Rock-Paper-Scissors Game

Introduction

This mini project is based on the classic Rock-Paper-Scissors game. It has been implemented in Python to demonstrate the use of basic programming concepts such as: Variables User Input & Output Conditional Statements Loops Random Module The project allows the user to play Rock-Paper-Scissors against the computer, which makes a random choice from the three options. The program compares the choices and declares the result.

Objective

The objective of this mini project is to apply basic Python concepts to build an interactive and fun game. It helps in understanding decision-making structures and the use of Python's random library.

Python Code

```
import random

def play_game():
    print("■ Welcome to Rock-Paper-Scissors Game ■")
    print("Choices: rock, paper, scissors")

    user_choice = input("Enter your choice: ").lower()
    choices = ["rock", "paper", "scissors"]
    computer_choice = random.choice(choices)

    print(f"\nYou chose: {user_choice}")
    print(f"Computer chose: {computer_choice}")

    if user_choice == computer_choice:
        print("Result: It's a Tie! ■")
    elif (user_choice == "rock" and computer_choice == "scissors") or \
         (user_choice == "scissors" and computer_choice == "paper") or \
         (user_choice == "paper" and computer_choice == "rock"):
        print("Result: ■ You Win!")
    elif user_choice in choices:
        print("Result: ■ You Lose!")
    else:
        print("Invalid input! Please choose rock, paper, or scissors.")

# Run the game
play_game()
```

Sample Output

```
Example Run:

■ Welcome to Rock-Paper-Scissors Game ■
Choices: rock, paper, scissors
Enter your choice: rock

You chose: rock
Computer chose: scissors
Result: ■ You Win!
```

Conclusion

The Rock-Paper-Scissors mini project demonstrates how Python can be used to build simple yet interactive games. It reinforces programming basics and provides hands-on experience with conditional logic, randomization, and user interaction.