

PROBLEM STATEMENT

ROCK PAPER SCISSOR

Here’s a simple **Rock, Paper, Scissors** game in Python where a user plays against the computer. The computer randomly selects **rock**, **paper**, or **scissors**, and the game determines the winner based on the standard rules:

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

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# INTRODUCTION:

Rock-Paper-Scissors is a simple hand game that is often used as a decision-making tool. The game is played between a player and a computer. Each participant selects one of three choices: Rock, Paper, or Scissors. The winner is determined based on the following rules:

* Rock beats Scissors
* Scissors beat Paper
* Paper beats Rock If both the player and the computer choose the same option, the game ends in a tie.

The objective of this project is to develop a Python program that allows a user to play Rock-Paper-Scissors against the computer using the random module.

**Methodology**

1. **Getting User Input:** The player is asked to enter their choice (Rock, Paper, or Scissors). Input validation ensures only valid choices are accepted.
2. **Computer's Choice:** The computer randomly selects Rock, Paper, or Scissors using the random.choice function.
3. **Determining the Winner:**
   * If both choices are the same, the game is a tie.
   * The winner is determined based on the standard game rules.
4. **Displaying the Results:** The choices of both the player and the computer are displayed, along with the winner.

# Code

import random

def get\_player\_choice():

"""Gets the player's choice."""

while True:

choice = input("Enter your choice (rock, paper, scissors): ").lower()

if choice in ["rock", "paper", "scissors"]:

return choice

else:

print("Invalid choice. Please try again.")

def get\_computer\_choice():

"""Gets the computer's choice."""

return random.choice(["rock", "paper", "scissors"])

def determine\_winner(player\_choice, computer\_choice):

"""Determines the winner of the game."""

print(f"You chose {player\_choice}, computer chose {computer\_choice}.")

if player\_choice == computer\_choice:

print("It's a tie!")

elif (player\_choice == "rock" and computer\_choice == "scissors") or \

(player\_choice == "paper" and computer\_choice == "rock") or \

(player\_choice == "scissors" and computer\_choice == "paper"):

print("You win!")

else:

print("Computer wins!")

def play\_game():

"""Plays a game of Rock-Paper-Scissors."""

player\_choice = get\_player\_choice()

computer\_choice = get\_computer\_choice()

determine\_winner(player\_choice, computer\_choice)

# Start the game

play\_game()

**Output/Result** Example Output:

Enter your choice (rock, paper, scissors): rock

You chose rock, computer chose scissors.

You win!

Enter your choice (rock, paper, scissors): paper

You chose paper, computer chose rock.

You win!

Enter your choice (rock, paper, scissors): scissors

You chose scissors, computer chose scissors.

It's a tie!

# References/Credits

* Python random module documentation.
* Code developed using Python standard libraries.