

# ROCK PAPER SCISSORS GAME

## PROJECT DOCUMENTATION

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### Introduction

The Rock Paper Scissors Game is an interactive web-based project that allows users to play the classic Rock-Paper-Scissors game against a computer opponent. With attractive styling, animated interactions, and real-time score tracking, it offers a fun and engaging experience directly from the browser.

### Project Goals

- Create an enjoyable user experience for the classic Rock-Paper-Scissors game.
- Implement simple yet effective UI/UX design.
- Enhance user interaction with dynamic results and real-time score updates.
- Demonstrate proficiency in HTML, CSS, and JavaScript.

### Features & Working

- **Choices:** User can click on Rock, Paper, or Scissors to make a move.
- **Computer Move:** Computer randomly selects Rock, Paper, or Scissors.
- **Result Display:** The game displays whether the user wins, loses, or draws.
- **Scoreboard:** Real-time tracking of both user's and computer's scores.
- **Dynamic Animations:** Hover effects and transition animations enhance play experience.

### Working:

1. User clicks on an option (Rock/Paper/Scissors).
2. Computer randomly picks an option.
3. The outcome is calculated:
  - Rock beats Scissors
  - Scissors beats Paper
  - Paper beats Rock

- Same choice results in a Draw
4. Scores are updated and the result is displayed dynamically.

## Technologies Used

- **HTML5:** To structure the webpage and interface.
- **CSS3:** For visually appealing styling, animations, gradients, and responsive design.
- **JavaScript (Vanilla):** To handle the game logic, interactions, and dynamic updates.

## Implementation Details

- **User Interaction:** onclick events on images allow users to make a selection.
- **Random Selection:** JavaScript's `Math.random()` function generates the computer's choice.
- **Dynamic Updates:** DOM manipulation updates result text and scores instantly.
- **Animations:** CSS transitions and keyframes provide smooth hover and fade-in effects.

## Theme

The game uses a vibrant and playful theme:

- **Background:** Dark radial gradient transitioning from deep blue shades.
- **Typography:** Modern sans-serif fonts with glowing text effects.
- **Choice Buttons:** Images with glowing blue borders and hover enlargements.
- **Scoreboard:** Neon-styled counters for user and computer scores.

## Code Snippets

```
<!-- Choice Images -->
```

```
<div class="choice" onclick="play('rock')">
```

```
  
```

```
  <p>Rock</p>
```

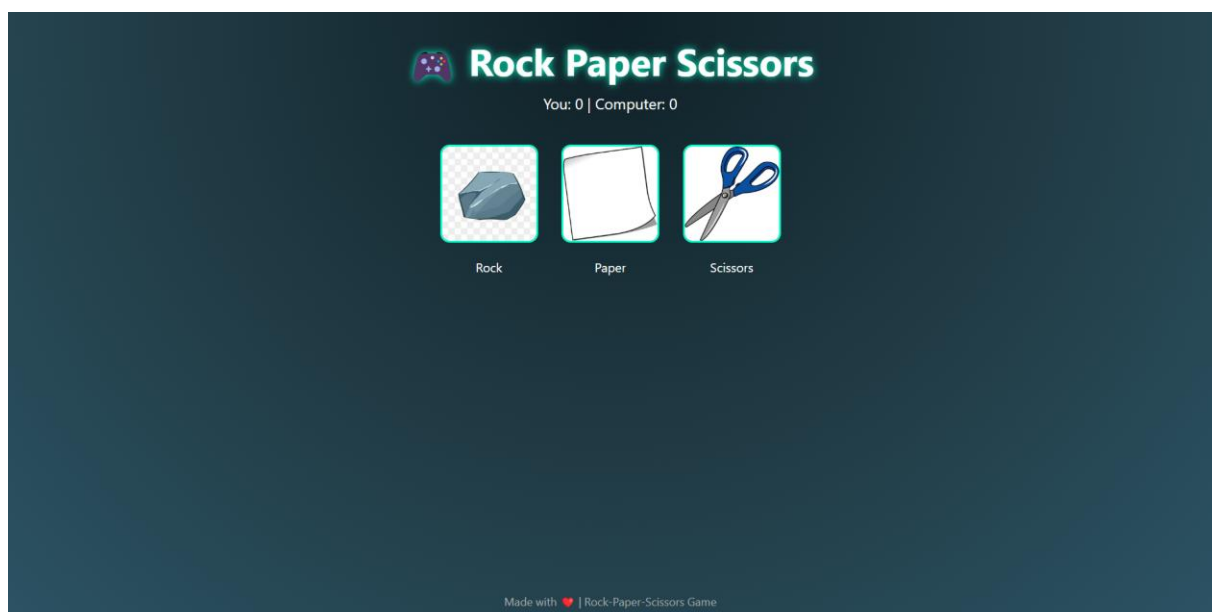
```
</div>
```

```
// Main Game Logic
```

```
function play(userChoice) {  
  const choices = ['rock', 'paper', 'scissors'];  
  const computerChoice = choices[Math.floor(Math.random() * 3)];  
  
  showChoices(userChoice, computerChoice);  
  const result = getResult(userChoice, computerChoice);  
  
  if (result === 'win') {  
    userScore++;  
  } else if (result === 'lose') {  
    computerScore++;  
  }  
  updateScoreAndResult(result, userChoice, computerChoice);  
}
```

### Output Photos (Descriptions)

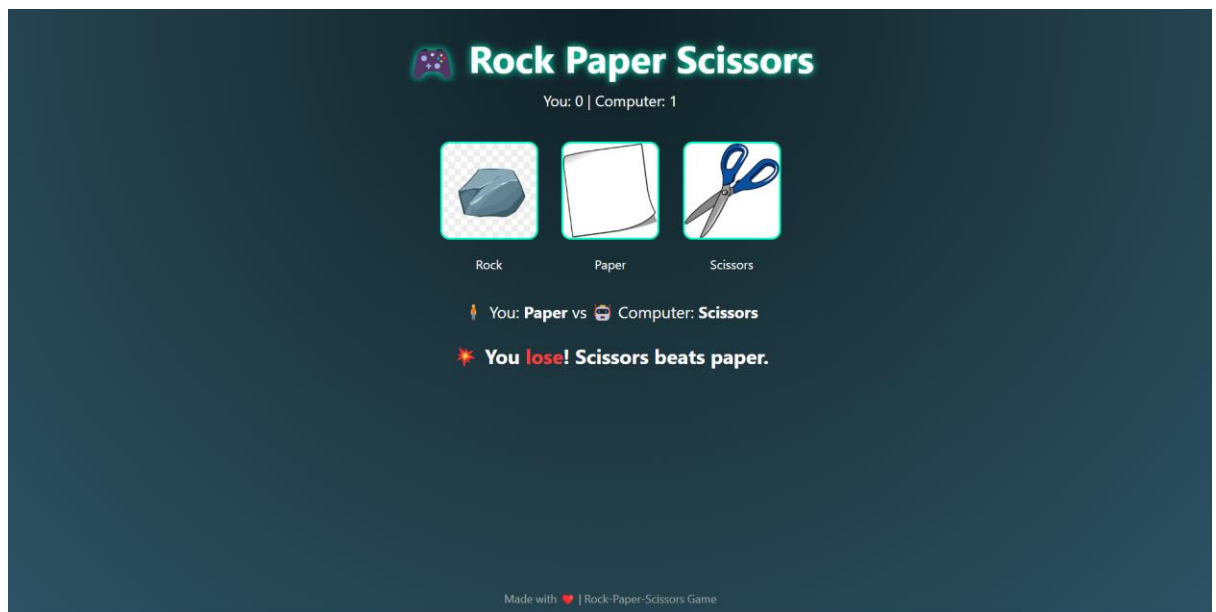
- **Start Screen:** Title "Rock Paper Scissors" with glowing text and choice buttons.



- **During Play:** User's and computer's selected choices displayed.



- **Result:** Highlighted result message (win/lose/draw) and updated scores.



## Limitations and Feature Enhancements

### Limitations:

- No game sound effects.
- No difficulty levels (computer always picks randomly).
- No multiplayer mode.

### Potential Enhancements:

- Add sound effects on win, lose, and draw.
- Include difficulty levels (easy/medium/hard AI behavior).
- Add animations between selections.

- Offer two-player mode (user vs. user).
- Display history of past rounds.

## **Conclusion**

The Rock Paper Scissors Game provides a fun and interactive gaming experience using core web technologies. It combines simple logic with modern styling and animations, making it an excellent project to showcase web development and front-end skills. With minor improvements, it can be expanded into a full-featured multiplayer or AI-driven game.