Chapters

Overview

1.1 Introduction

The **Rock-Paper-Scissors Game**, a classic interactive game built using HTML, CSS, and JavaScript. The goal is to create an engaging web-based application where users can play against the computer. The game is designed to test basic frontend development skills and implement simple game logic.

1.2 Significance

The project demonstrates practical knowledge of web development, particularly in building interactive elements with JavaScript. It showcases event handling, dynamic DOM manipulation, and real-time user feedback. It also highlights the importance of responsive design for a better user experience across different devices.

Problem Definition

2.1 Problem Statement

Create a web-based **Rock-Paper-Scissors Game** where users can play against a computer opponent. The system should:

- Allow the user to select from Rock, Paper, or Scissors.
- Randomly generate the computer's choice.
- Calculate the winner and update the score accordingly.
- Provide an interactive and responsive user interface.

Proposed Work

3.1 Creation of Classes

For this project, no specific object-oriented classes are used. However, the game logic is modularized into functions to handle different aspects of the game, such as calculating the result, updating the score, and interacting with the DOM.

3.2 Tools Used

- **HTML: For creating the structure of the game.**
- **CSS: For styling the user interface and making the game responsive.**
- **JavaScript: For implementing the game logic and handling user interactions.**

3.3 Algorithm

1. **User Input: Capture the user's choice (Rock, Paper, or Scissors).**
2. **Random Choice: The computer randomly selects between Rock, Paper, or Scissors.**
3. **Result Calculation: Compare the player's choice with the computer's choice based on game rules:**
    - **Rock beats Scissors**
    - **Scissors beats Paper**
    - **Paper beats Rock**
4. **Display Results: Show the result (win, lose, or draw) and update the score.**
5. **Repeat: Allow the game to continue until the user stops playing**

Analysis and Planning

4.1 Analysis and Planning

Planning involved identifying the key features of the game, creating a basic wireframe for the user interface, and structuring the code to handle gameplay. The analysis focused on:

- Ensuring smooth transitions between each round.
- Using simple yet efficient logic to determine the winner.
- Making the game responsive across different screen sizes.

5) Results

5.1 Snapshots of Project

5.1 Snapshots of Project

This chapter provides visual representations of the completed project, including:

- **Homepage**: Displays options for Rock, Paper, and Scissors.
- **Game Interface**: Shows the current score and result after each round.
- **Responsive Design**: Screenshots of the game on both desktop and mobile devices.

Rock Papper Scissor Game

0 You

0 Computer

Play Your move

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Rock Papper Scissor Game

5 You

4 Computer

You Win! Your Rock beats Scissor

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6) Future Enhancements and Future Scope of Project

6.1 Future Scope

Potential future enhancements for the project include:

- **Sound Effects**: Adding sounds for each round to make the game more engaging.
- **Multiplayer Mode**: Allow two players to play on the same device.
- **Animations**: Implementing animations to enhance the visual feedback of the game.
- **Leaderboard**: Introducing a leaderboard to track the highest scores over multiple rounds or sessions.

7) Conclusion

7.1 Conclusion

The **Rock-Paper-Scissors Game** project demonstrates fundamental web development skills, including building an interactive user interface, using JavaScript for game logic, and ensuring a responsive design. The project successfully meets the problem statement and offers opportunities for further improvement in terms of user experience and functionality.