

# **PROJECT REPORT ON**

**“GameGrid: Building Fun with React”**

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## **“GameGrid: Building Fun with React”**

The GameGrid React App redefines the gaming experience, offering a one-stop destination for classic games with a modern twist. As a versatile game app, it provides access to a diverse array of timeless games, including the strategic depth of Tic-Tac-Toe, the quick decision-making challenges of Rock-Paper-Scissors, and the adrenaline-pumping adventures of Snake.

This digital arcade brings together generations of players, offering an accessible and user-friendly interface that caters to gamers of all ages. It's not just about playing games; it's also a gateway to understanding the world of web-based game development. As you immerse yourself in these classics, you'll gain insights into the technology that breathes life into these evergreen games in a digital format.

In a fast-paced world, the GameGrid React App revives the simplicity and joy of classic games, now available on a single, convenient platform. It's a journey through nostalgia and innovation, offering a memorable gaming experience for everyone.

### **Future Advancements:**

As the React App continues to evolve, there are several exciting future advancements on the horizon:

1. **Interactive Game Tips:** In the next phase of development, the app will feature interactive game tips. These tips will be accessible to players, providing insights and strategies

for each game. These tips will enhance the user experience by offering valuable guidance.

2. **API-Enhanced Facts:** Integrating a dynamic API feature that will fetch interesting facts about the games. Players will have the opportunity to discover fascinating trivia and historical tidbits related to Tic-Tac-Toe, Rock-Paper-Scissors, Snake, and other classics. It's a fun and educational addition that adds depth to the gaming experience.
3. **Multiplayer Mode:** The future holds exciting possibilities for multiplayer gameplay. Whether it's playing against friends or connecting with fellow gamers worldwide, multiplayer mode will add a new layer of excitement.
4. **Cross-Platform Compatibility:** Aim to make the app accessible on multiple platforms, including mobile devices and tablets.
5. **Additional Classic Games:** Expanding the collection of classic games. From nostalgic favorites to hidden gems, catering to a wide range of gaming preferences.

## **Functionality of the GameGrid React App**

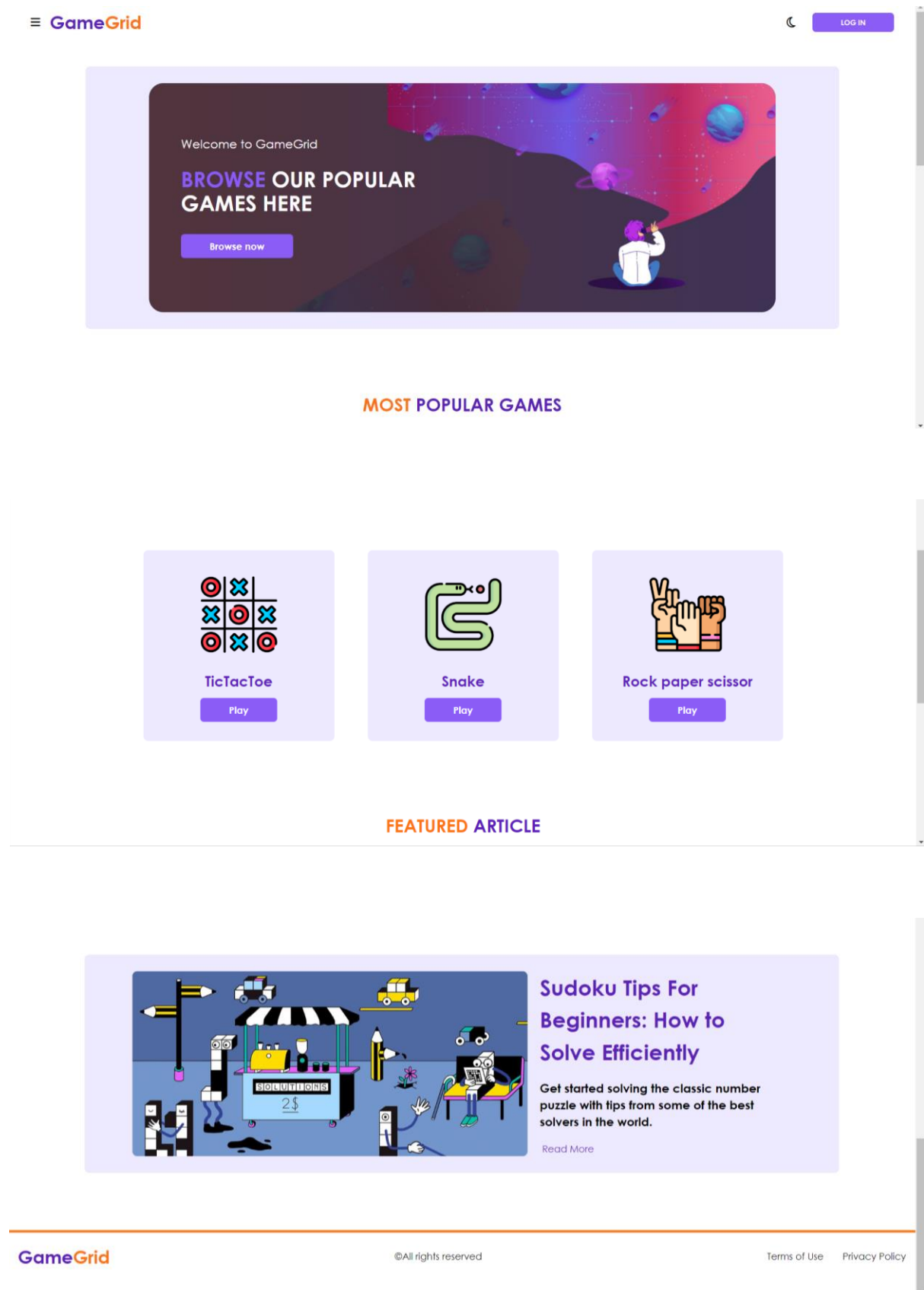
The GameGrid React App leverages several key React features and technologies to deliver a seamless and engaging gaming experience. Here's an explanation of how these features work:

1. **React:** The app is built on the React framework, which provides a robust foundation for creating dynamic and interactive user interfaces. React simplifies the development process by allowing the app to update and render efficiently in response to user interactions.

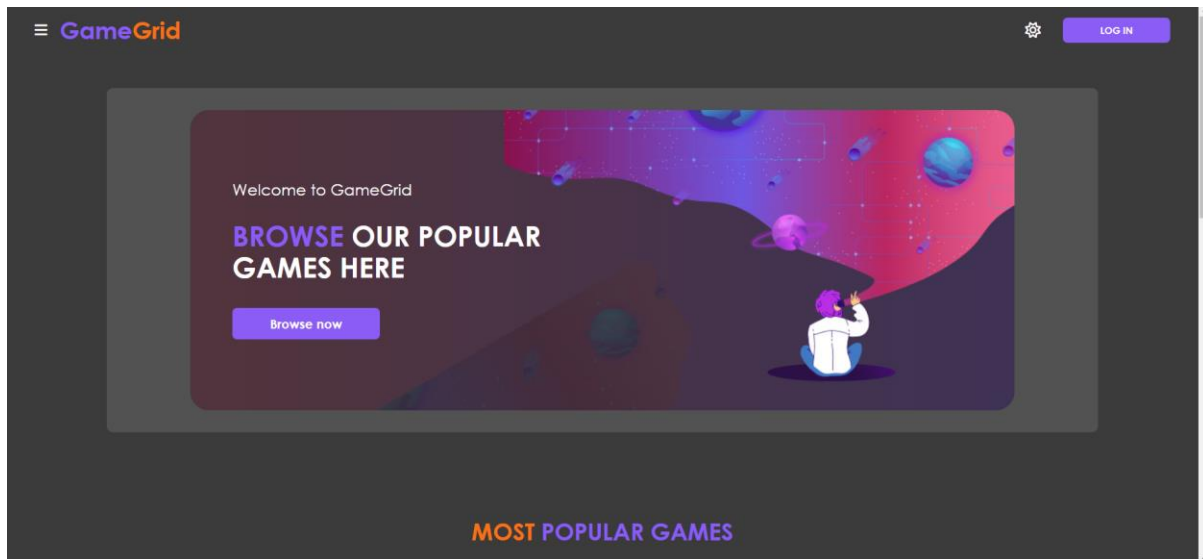
2. **TailwindCSS:** Styling is done by importing tailwind in react
3. **useState:** React's **useState** hook is utilized to manage the app's state. It allows for the dynamic updating of variables, such as tracking game progress and scores, ensuring a responsive and interactive gaming experience.
4. **useEffect:** The **useEffect** hook is employed to handle side effects in the app, such as updating the game board when a player makes a move. It ensures that the app responds to user actions and updates the interface accordingly.
5. **useRef:** React's **useRef** is used to create references to elements in the app's virtual DOM. This is particularly handy for maintaining game state and tracking user interactions, helps in maintaining this loop and ensuring that the game board is consistently updated.
6. **Routing:** React Router, a popular routing library for React, is incorporated to manage navigation within the app. It enables seamless transitions between different game components, ensuring a smooth and intuitive user experience.
7. **User Authentication:** The primary functionality of the **LoginSignup** component is to facilitate user authentication and registration. Users can either log in or sign up based on their choice.
8. **Validation:** It includes basic form validation to ensure that required fields (email, password, and username in the signup mode) are filled. If not, it displays an alert to prompt the user to provide the missing information.
9. **Theme Management:** Theme toggling allows users to switch between different themes or styles for the application's user interface.

## Screenshots:

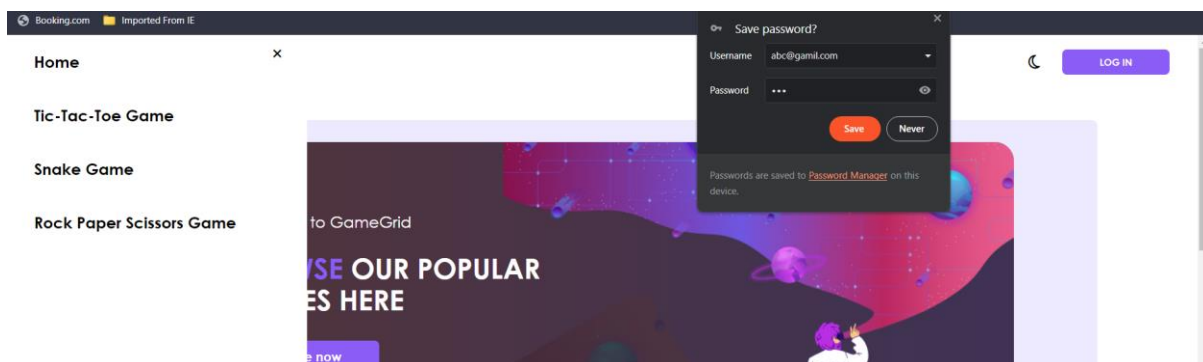
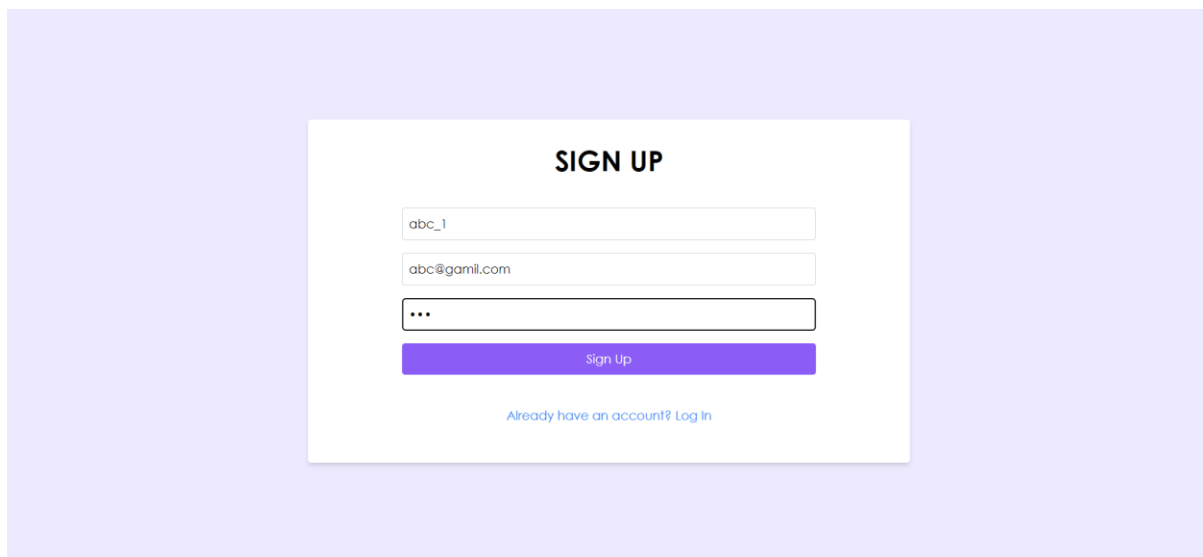
### Homepage:



After changing the theme:



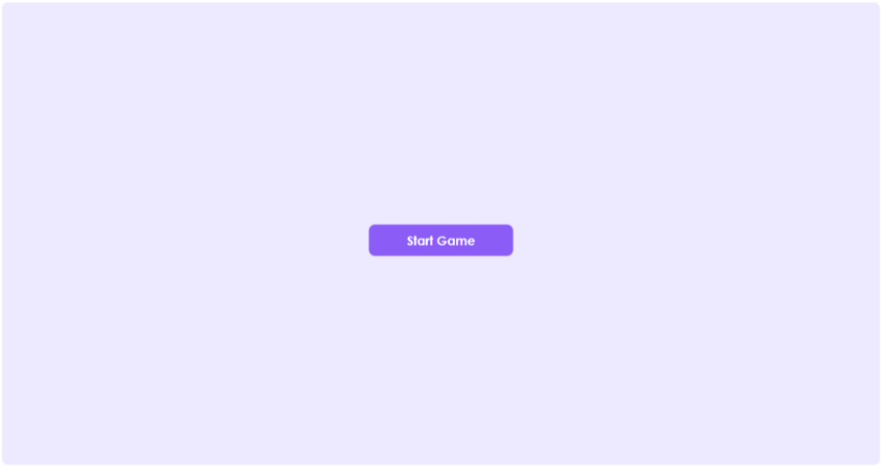
Login/Sign Up page:



# TicTacToe Game:

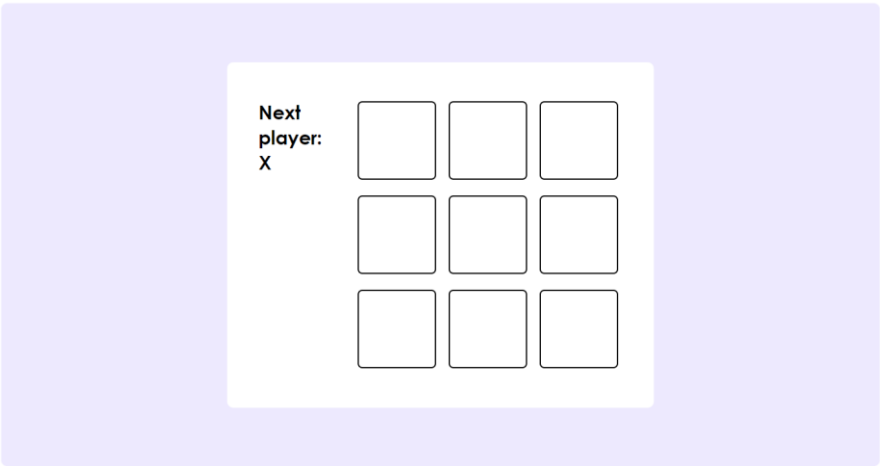
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## Tic-Tac-Toe Game



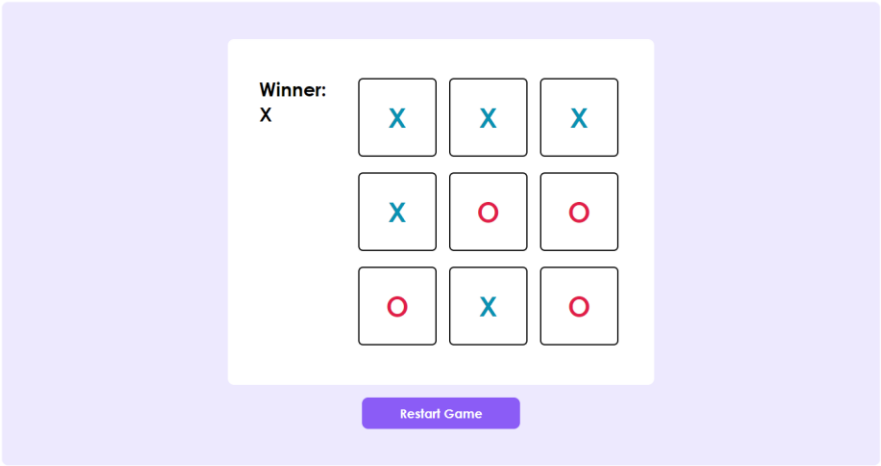
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## Tic-Tac-Toe Game



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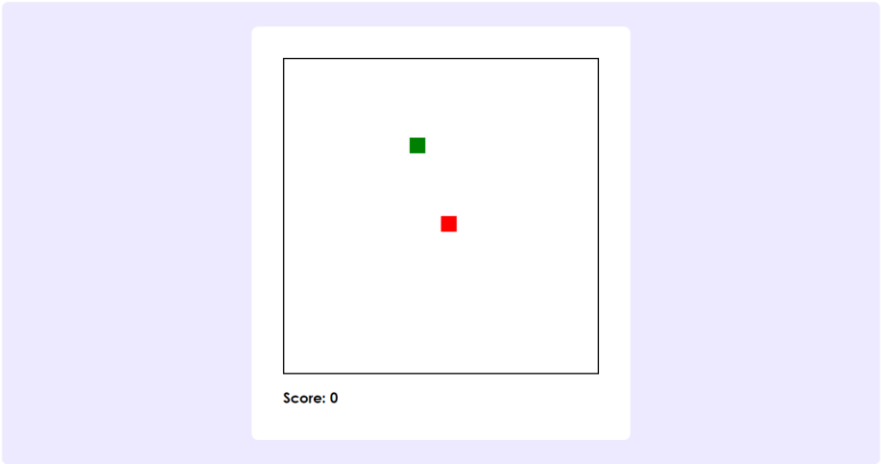
## Tic-Tac-Toe Game



Snake game:

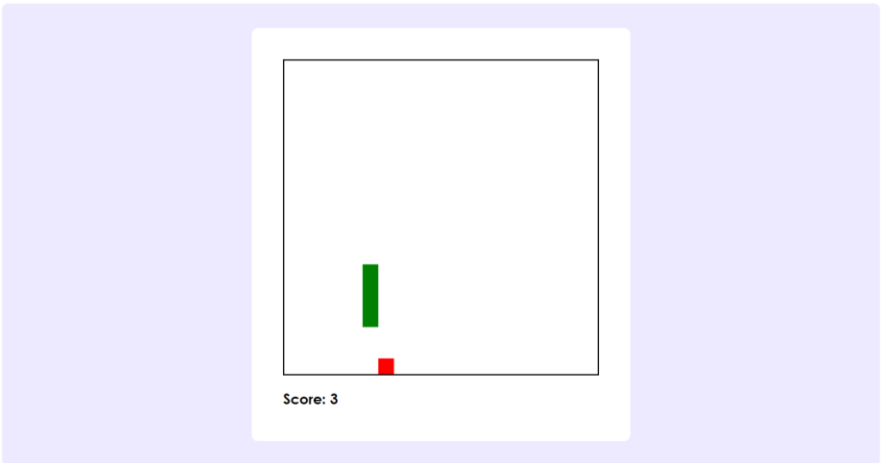
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Snake Game



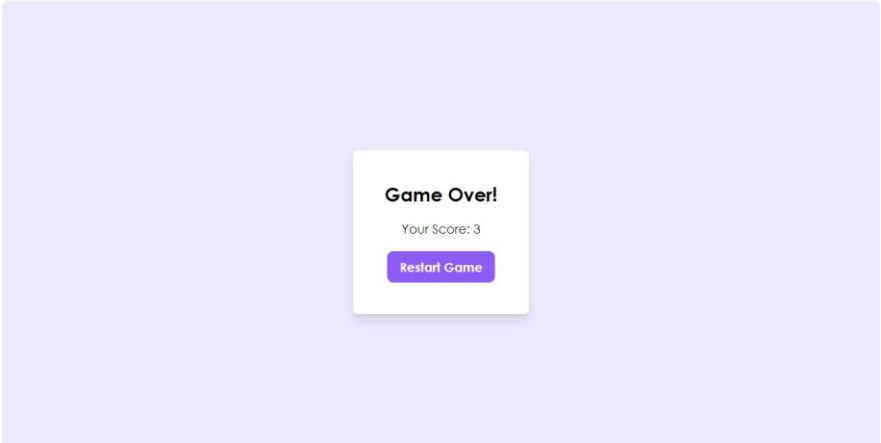
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Snake Game



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Snake Game

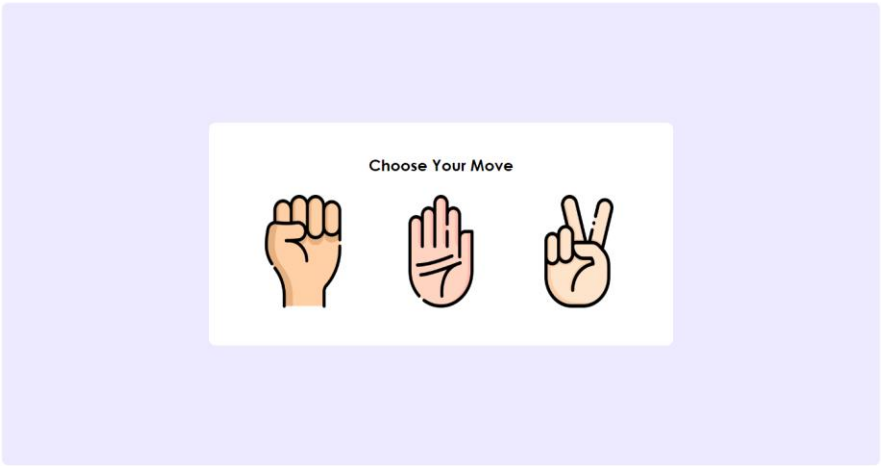




Rock paper Scissors game:

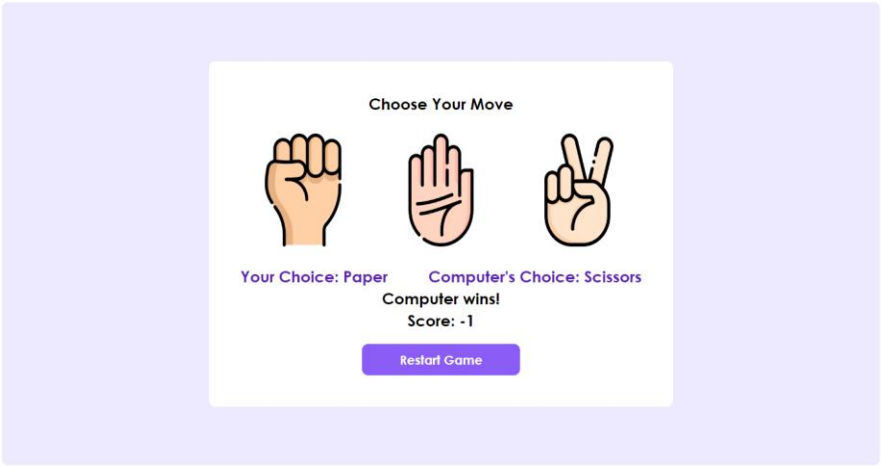
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Rock Paper Scissors Game



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Rock Paper Scissors Game



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Rock Paper Scissors Game

