

REFLECTION

REFLEX ARENA

SHREST SHARMA

OVERVIEW

The Reflex Arena project was developed as part of my learning journey in JavaScript and DOM manipulation. The objective was not only to build an interactive game, but to understand how real-time systems respond to user actions under time pressure. This project allowed me to apply theoretical JavaScript concepts in a practical, engaging context.

KEY LEARNINGS

- Developed a strong understanding of DOM manipulation through dynamic creation, positioning, and removal of elements.
- Gained practical exposure to event-driven programming, especially handling user clicks and system-generated events.
- Learned how to manage application state such as score, accuracy, timers, and difficulty progression.
- Understood the role of timers (`setInterval` and `setTimeout`) in controlling game flow and real-time behavior.
- Improved debugging skills by identifying and resolving UI and state-related issues during development.

CHALLENGES & IMPROVEMENTS

One of the main challenges was managing multiple states simultaneously while ensuring the interface remained responsive and intuitive. Early versions of the system introduced usability issues related to overlays and game restarts. Through testing and iteration, I learned the importance of simplifying logic, resetting DOM elements correctly, and maintaining clear state transitions. These improvements resulted in a more stable and user-friendly experience.

REFLECTION

DESIGN THINKING & USABILITY

During testing, it became clear that users could lose focus when tracking changing rules. To address this, visual cues such as persistent target indicators and clear feedback mechanisms were introduced. These design improvements reduced cognitive load and helped maintain user focus without disrupting gameplay, highlighting the importance of UX considerations even in logic-focused applications.

FUTURE SCOPE

This project can be extended further by introducing difficulty modes, keyboard-based interactions, smoother animations, and persistent high-score tracking using `localStorage`. These enhancements would increase replayability while maintaining the core logic of the system.

PERSONAL REFLECTION

This project helped me transition from writing isolated JavaScript functions to thinking in terms of systems, states, and user experience. It strengthened my understanding of how interactive applications are designed and reinforced my confidence in building complete, real-time frontend systems using core JavaScript concepts.