

Graphics Proposal - Tabletop Simulator - Chess

Daniel Cunningham, Zach Coomer, Colin Douglas, Zachary Rose

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Schedule

1. Report 1: October 20, 2023
2. Report 2: November 3, 2023
3. Report 3: November 17, 2023
4. Report 4 (Final Report): December 1, 2023

Plan Broken into 4 Tiers of Completion

I. Basic Chessboard Skeleton

- Create a static 3D chessboard.
- Allow pieces to be placed on the board.
- Implement simple HTML interface for piece interaction.
- Report 1: Deliver basic chessboard functionality.

II. Enhanced Chessboard

- 3D model chess pieces.
- Add lighting to both pieces and board.
- Implement undo functionality.
- Allow for fixed camera positions.
- Report 2: Deliver an enhanced chessboard experience.

III. Intermediate Features

- Implement free camera control.
- Model an environment around the chessboard.
- Add animations for piece movements.
- Enable piece collisions and basic physics.
- Report 3: Integrate intermediate features into the game.

IV. Full Chess Simulation

- Implement all chess rules.
- Allow players to rotate the board.
- Add multiple lighting sources.
- Report 4: Deliver a complete WebGL chess simulator.

Roles and Proposed Tasks

- Project Manager
 - Overall project coordination.
 - Task assignment and tracking.
 - Report preparation.
- Graphics Designer
 - 3D modeling of chess pieces.
 - Designing the chessboard environment.
 - Lighting and visual effects.
- Web Developer
 - WebGL implementation.
 - HTML interfaces and interactions.
 - Camera control and animations.
- Game Developer
 - Implementing chess rules and logic.
 - Physics and collision integration.
 - Board rotation and camera setup.

Despite these roles, we intend for everyone to try and work together as much as possible and for the roles to be interconnected.

Risky Areas/Backup Plan

One potential risk is the complexity of fully modeling the chess pieces and integrating all the rules. To mitigate this risk, we have a backup plan:

Backup Plan: Develop a simpler checkers game instead of chess. This reduces the complexity of modeling pieces and implementing rules while still showcasing the WebGL capabilities.

Design

Gameplay: The WebGL Tabletop Chessboard Simulator aims to provide a realistic chess-playing experience. Players can interact with the 3D chess pieces, move them how they want or according to chess rules, and enjoy a visually appealing environment.

Interaction: Players can interact with the game through the HTML interface. They can select and move chess pieces using the mouse, undo moves, and rotate the board. The camera can be adjusted for optimal viewing, enhancing the overall experience.

Graphics: The game features 3D-modeled chess pieces with realistic lighting. The chessboard and its surroundings create an immersive tabletop atmosphere. Animations are used for smooth piece movements, enhancing gameplay.