Capstone Project Proposal

For my capstone project, I am wanting to create a website designed for renting/selling board games. Design wise I want the website/application to operate similar to a movie rental/streaming website such as Netflix or Prime Video. I intend to have it be as full-stack as possible to showcase both front and back end development. Primarily it will operate as a website, but with the possibility of creating a mobile application as well. The overall goal of the project is to create a site where one would be able to rent out board games on a weekly basis or a subscription basis. Users would be both subscribers as well as one time users that would be renting out a game.

Tech Stack: Wanting to use MERN stack

- Frontend:
    - React Native: for developing cross platform applications using single database
    - React: For using website applications that are consistent with the mobile app.
- Backend:
    - Node.js for API requests, server-side logic, and integration with databases
- Database:
    - MongoDB: database used to store and manage static content and any additional data needed.
- Content Management:
    - Unsure of what I would need at this point
- Hosting:
    - Unsure of at this moment, but would need a service to deploy and scale backend services and hosting frontend

Focus of the Project

As stated above in the introduction I want an evenly focused full-stack application to showcase both skill sets. The goal is to create a seamless user experience while navigating a large database of games available across both mobile and desktop platforms allowing an easy experience looking for the game you desire.

Project Type

- Mobile App: Cross-platform application for iOS and Android.
- Website: A web application accessible via any browser.

Project Goal

The goal of the project is to create a site where people who enjoy board games can look up and rent board games they would like to play. This can either be via a subscription service for

monthly payments, or renting an individual game 1 week at a time. This would operate similar to how old-school Netflix or video game rentals worked.

User Demographic
The primary users of the app would be:

- Board game enthusiasts
- People looking for entertainment for a gathering/party
- People looking to explore new games

Data and API

- Data: The content will include descriptions of each board game, a picture of the board, the board game type, the number of players allowed for the game, the average length of gameplay, and the difficulty level of the game. The user would be able to create a profile and store information.
- Data Collection: Content will be managed via a headless CMS and delivered via an API to both mobile and website applications.
- API: The API will provide endpoints for retrieving content, including the information of the games, game types and difficulty levels. The API will also be used for renting out the games, setting how long you are wanting to rent the game, or managing your subscription to the service. The API would manage user data and profile data. The API would most likely need to be custom-built.

Project Approach

1. Database Schema
    - Content: Display pictures of board games, descriptions of the games, number of players allowed in a game, average length of gameplay, and difficulty levels.
    - Categories: Category types of games for organizing games. Allow games to be sorted based on type, length of gameplay, players, or difficulty level.
2. Potential API Issues
    - Data Consistency: Making sure all content is delivered consistently across mobile and web browsers.
    - Scalability: Ensuring if the site was popular being able to handle increasing amounts of data and users/profiles efficiently.
    - Error Handling: Managing and reporting API errors efficiently.
3. Sensitive Information
    - Payment information from profiles/users
    - User/Profile information
    - Addresses used for delivering games
4. Functionality
    - Content Display: Users can view boardgames, information, and profile information.

    - Search and Filter: Users can search for specific board games based on categories, length, or difficulty.
    - Profiles: Users can change and update their profile information
5. User Flow
    - Homepage: Displays featured content, navigation options, and promotions.
    - Content Pages: Users can access board games, information about the site/designers, profile information, and resources
    - Search/Filter: Users can search for specific board games and filter content.
6. Stretch Goals
    - User feedback: Allows users to submit feedback to gather information about how to improve content.
    - Multi-Language Support: Expand content accessibility to allow different languages comfort in navigating the information.
    - Add tutorial/informational videos: Have short tutorial videos for those who are more visual learners.