Proposal for Tavern's TTRPG Group Matchmaking Service

https://github.com/NotASniper/TavernAPP & https://github.com/cs340-25/Tavern

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Team Members:

Semilore Abiodun-Adeniyi | Project Lead, Flex Background: - Experience with Python, React Native, SQL, TailwindCSS, and Appwrite.	**Kevin Lam | Backend Developer and Flex** Background: - Experience with Python, React, C++, and some JavaScript.
Ahmed Ghazi | Frontend & Design Background: - I have some design background and have made some websites before.	**Eric Yang | Frontend & Design** Background: - Some design experience - No experience with React Native
Minh Cao | Database and Backend Developer Background: - I mostly code backend and I have some background with database in SQL but we will not be using SQL. - Experience in Python, C++, Java, Lua	

Overview

Summary:

Tavern is a platform designed to streamline the tabletop role-playing game (TTRPG) experience, addressing core pain points that both new and experienced players encounter. By integrating player and campaign discovery, session scheduling, inventory management, and potential NFC-enabled transaction tools, Tavern aims to become the premier hub for building, managing, and enhancing the social and organizational aspects of gameplay. With the TTRPG market on the rise and interest in it and related accessories growing, Tavern is poised to fill a critical niche in the gaming community.

Introduction

Tavern is a digital ecosystem designed to simplify and enhance the TTRPG experience:

1. Campaign Finder: A specialized matching system (like a “dating app” for TTRPG players) to connect compatible Game Masters (GMs) and players based on preferences, experience, rule sets, availability, and meeting type (online or in-person).
2. Inventory & Resource Management: A robust, synchronized inventory tracker where GMs can “push” items, gold, and other rewards directly to players. Optional NFC cards can be tapped against a smartphone to simulate in-game transactions, bridging physical and digital play.
3. Scheduling & Communication: Integrated calendars, messaging systems, and notification features keep everyone aligned and up-to-date.
4. Future Integrations: Potential partnerships with TTRPG retailers, virtual tabletops, and character sheet services to streamline the entire ecosystem.

Motivation

As a team that enjoys playing TTRPGs, we noticed a lack of distinctive applications focused on social networking centered around these TTRPGs. To fulfill this niche, we decided to create Tavern.

Market Context

TTRPGs are beloved for their creative freedom and social interaction, yet their extensive requirements often present significant barriers to entry and continuity:

1. Group Discovery Challenges: Finding a compatible group or players can be difficult, resulting in delays or discouragement.
2. Scheduling Complexities: Coordinating regular sessions is challenging due to varying schedules, time zones, and personal commitments.
3. In-Game Organization Hurdles: Tracking inventory, gold, and notes over the lifespan of a campaign can become tedious, especially as campaigns grow in complexity.

These issues can deter newcomers and frustrate veterans. With sustained popularity and the broader TTRPG market expanding, there is a clear opportunity for a centralized, user-friendly platform that addresses these operational friction points.

Projected Market

Customer Value:

- **Primary customer:**
  - Our primary customers and expected audience are TTRPG players both experienced and new. A dedicated streamlined application would fit the needs of both groups — for new players, an easier introduction into entering the world of TTRPGs, and for older players, a more consistent avenue to chat about and plan sessions (currently, people use various social media sites such as Reddit or go to local clubs, which may present barriers of introduction to new players). They just want to start playing and skip the initial steps!
- **Proposed solution:**
  - We propose Tavern as a solution to the many barriers that hinder a player from finding TTRPG sessions. By creating a dedicated social app for TTRPG players, it becomes much easier to search for other players and sessions. We haven't tested our proposed solution yet, but we believe it will garner huge success by entering a market not often explored.
- **Measure of success:**
  - We plan to measure our success with either an active user-base with concurrent users or through the number of garnered interest in the app.

Project Details

Scope of Project

- For this class, Tavern's primary aim is to complete the app, fully implementing its design, matchmaking functionality, its scheduling, and maybe the messaging system. We plan to meet weekly over discord. Completion is feasible, as we have most of the frameworks required for Tavern's project.

Statement of Work, and Tools Used

While each member has a specific role, as explained below, it is flexible and has two members who will be moving between what is needed.

- **Semilore Abiodun-Adeniyi:**
    - As a full stack developer, Semmy is responsible for supporting whichever ends of the project needs support. Primarily, he will support database, API, frontend development, and algorithm development.
- **Kevin Lam:**
    - Kevin is responsible for developing fast, efficient algorithms, API's that Tavern's frontend will rely on for functionality, and ensuring code readability on both backend and frontend. He will also assist with the frontend and database if needed.
- **Ahmed Ghazi:**
    - Ahmed is responsible for development of the frontend API's in addition to creating a fast and responsive UI.
- **Eric Yang**:
    - Eric is responsible for creating a captivating frontend user design, a fast and responsive UI, and ensuring the efficiency of the API calls!
      (It'll be super cute!)
- **Minh Cao:**
    - Minh is responsible for creating Tavern's scalable database, and optimizing it for Tavern's API calls. He will work closely with Kevin to create the database to fit the previously defined schema, and to ensure the efficiency of the backend calls.

Tools

Tavern intends on utilizing the following tools for its app:

- Heroku - Database services.
- React Native - Cross platform mobile application development.
- Wix Velo - Webpage services.
- Python and Flask - Prototype algorithms and to potentially implement API's.
- Javascript - Frontend API calls.
- Supabase (JS) - Create the backend for the mobile app

Performance Criterion

- Progress will be benchmarked by the features that we have integrated. We will dedicate **3 weeks per feature in a staggered format**, with the 1st week being dedicated to research and prototyping, and the second being dedicated for full development.
    - Feature 1: Creating the Interface, - This first feature will be the framework for the rest of Tavern's application. For this we must use react native to begin developing the skeleton and placeholder for the rest of Tavern's functionality.
    - Feature 2: Creating the Database and the backend - This second feature is where the majority of Tavern's functionality will lie. We will focus on prototyping API's and functions.
    - Feature 3: Creating the Chat - This is the 3rd and final feature for this class, and will ensure that this social feature works.

Schedule:

- **Week 1:**
    - Prototyping initial designs for necessary pages
- **Week 2:**
    - Continue prototyping designs and start to build the skeleton code required for the project.
- **Week 3:**
    - Finalize designs and develop the first page of the application (startup page).
- **Week 4:**
    - The Design/Front end team will begin stylizing the startup page. The developer team will start creating pages such as home page, account page, and chat page.
- **Week 5:**
    - The Design/Front end team will start stylizing the rest of the application based on team feedback. The developer team will continue work on other pages.
- **Week 6:**
    - Developers finalize and optimize backend APIs for authentication, matchmaking, and chat while ensuring database integration, while designers begin implementing backend functionality into the frontend and debugging authentication.
- **Week 7:**
    - Developers implement and optimize matchmaking logic for smooth campaign discovery, while designers develop and style the matchmaking UI for an intuitive user experience.
- **Week 8 :**
    - Developers build the backend chat infrastructure and real-time messaging, while designers design and integrate the chat UI with responsive styling and notification elements.
- **Week 9:**

    - Developers conduct full-system debugging and optimize performance, while designers refine UI/UX, fix styling inconsistencies, and finalize the interface for the prototype.
- **Week 10:**
    - The entire team will finalize the project prototype.

Other

Constraints:

- **Social concerns:**
    - As with any social networking app, user safety is the main concern. We plan on implementing moderation tools (such as viewing chat history if necessary) to keep Tavern a safe place for users.
- **Regulatory / legal concerns:**
    - We will ensure that we do not violate the intellectual property of any TTRPG that we plan on marketing our app towards.
- **Resources:**
    - We will have full access to the data we require and are also capable of generating example data and CSV's.

Descoping:

- Our application will still work even with partial features. Our main goal is to implement a chat-and-messaging system, and all other systems are bonuses that enhance the experience of Tavern. Even with only a messaging system, we would have fulfilled our criteria of meeting the players' need for a centralized method to meet other players and plan game sessions.