Lab 1 – RoleCall Product Description

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Version 3

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1 Introduction

RoleCall is a cross-platform mobile application designed to aid tabletop roleplaying game (TTRPG) players in finding and organizing play groups. RoleCall will allow users to make custom listings for meetups, detailing their preferred game, playstyle, location, and schedule. RoleCall will then match users based on high similarities between their posted listings. RoleCall will allow local game stores to advertise TTRPG events and sessions, and it will serve as a marketing research tool for gaming companies.

For players of TTRPGs, organizing gameplay sessions presents several challenges. For one, geographical constraints can make it difficult to find enough players for in-person play. Another difficulty is keeping everyone in the group committed to the same schedule. Even with enough players in a consistent group, differences in playstyle and narrative intentions can leave members dissatisfied with the overall experience. Figure 1 outlines the current process flow for players to find or form a group and shows the inherent obstacles they face.

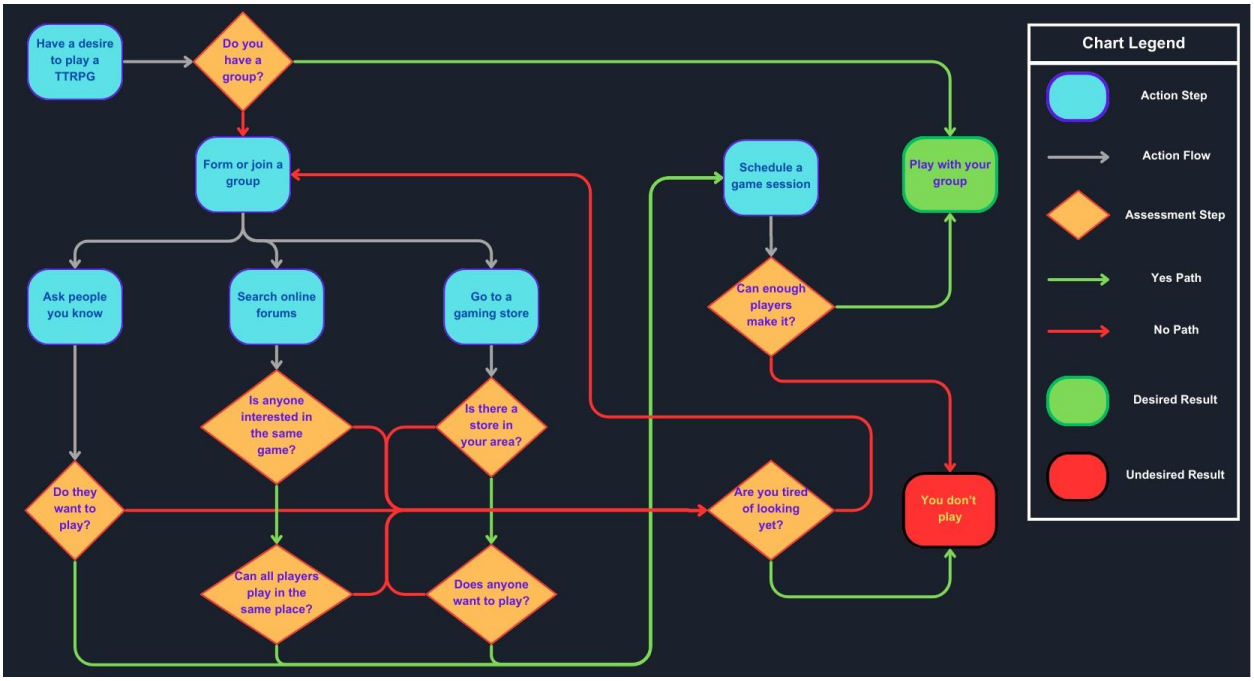

Figure 1: Current Process Flow

Players do not have many effective tools to make this process more efficient. Other meetup applications do not have the niche settings required to adequately match players based on gameplay preferences. Online forums do not have a simplified means to filter the overwhelming amount of information presented to players seeking each other. According to DND Research, 70% of all TTRPG players live in North America (2020). The remaining 30% of the player base is scattered across the globe, with very little means of finding groups reliably.

Furthermore, there has been a 36% increase in the number of people that identify as both GM and Player (DND RESEARCH, 2020). The structure of TTRPGs is based on one

Gamemaster guiding one or more Players through a campaign. These individuals face the added challenge of deciding who will be the Players and who shall be the Gamemaster.

2 RoleCall Product Description

The goal of RoleCall is to simplify the group finding process and mitigate unsatisfactory experiences in the TTRPG community. Users will be able to identify as Player or Gamemaster (GM) and enter their preferences for game, role, playstyle, location, and available schedule. The data will be stored in a secure SQL database, and a user-matching algorithm will work behind the scenes to connect the most compatible players to each other.

2.1 Key Product Description

RollCall will allow users to create Player, GM, and Game Store profiles. A single user account may have one Player profile and one GM profile simultaneously, but Game Store profiles will require verification. Player and GM profiles will be able to create listings for the user matching algorithm, and they will be able to invoke the matching algorithm for any listing they have created. Game Store profiles will have the ability to post information about their store.

GM listings will include the specific game to be hosted, the desired location, the schedule for play sessions, and which Player roles the GM is looking to host for. Player listings will also include the specific game, location, and schedule, as well as the role the Player is looking to fulfill. The user matching algorithm will be designed to connect GMs to Players based on the compatibility of their preferences. It will compare one GM listing to the database of Player listings or one Player listing to the database of GM listings depending on which profile type invoked the algorithm. RollCall will have a chat feature for matched GMs and Players to further organize and familiarize themselves with each other before the game session.

Game Store listings will allow stores to advertise their business to other users. Game Store profiles will be able to post available seating in play spaces, upcoming game events, the store’s physical location, and the store’s website.

2.2 Major Components

As a mobile application, the hardware associated with RoleCall will be smart phones and tablets. The software involved will be comprised of four components: user interface, server, user matching algorithm, and database. The interconnective outline of these components can be seen in Figure 2.

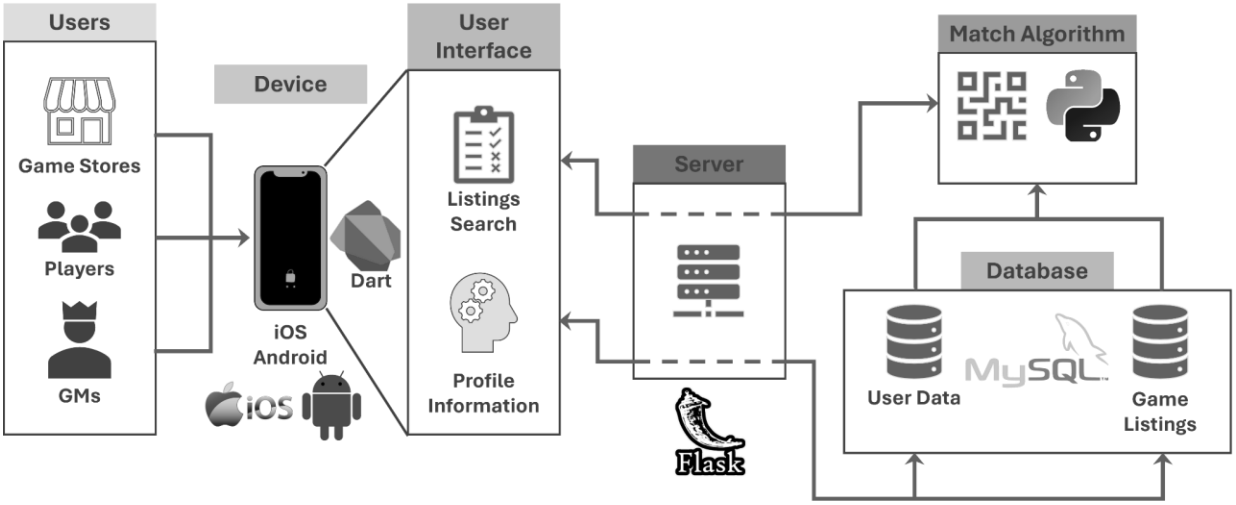

Figure 2: Major Functional Component Diagram

The user interface will be designed using the programming language Dart, which is built on the Flutter framework. The choice for this language and framework is based on RollCall being available on multiple platforms. Dart is designed for cross-platform application development, and it comes with its own testing library and documentation suite.

The server architecture will be designed using the Flask framework. Flask is lightweight, flexible and reliable. Due to the relative simplicity of RoleCall's functionality, a robust web framework is not necessary.

The user matching algorithm will be written in Python. This will allow the matching algorithm to natively interact with the Flask-based server. Python also has libraries, such as NumPy and Itertools, which will aid in optimizing the user matching algorithm.

The database will be designed using MySQL. MySQL is fast, reliable, and designed for relational database management. These features make it optimal for the user matching algorithm which will rely on relational analysis between the listing types.

3 Identification of Case Study

A TTRPG is a game in which players adopt roles in a collaborative effort to tell a story. One player takes on the role of a GM, and they choose the ruleset and setting for the story as well as designing plot points for the other players to encounter. The remaining players adopt a role simply called Player, and they navigate the world designed by the GM and make decisions that shape the story.

Many players of TTRPGs have difficulties finding or making groups to play with. The tools currently available to help with this process (e.g. online forums, general meetup apps) can present users with overwhelming information, result in missed connections for users, and discourage users from playing TTRPGs altogether.

RoleCall is being designed to make the process of organizing TTRPG playing groups easier for everyone involved. The goal of this application is to reduce the number of decisions needed in the process flow outlined in Figure 1 and collapse the work done by the user down to a single button press. This results in a simplified process flow outlined in Figure 3.

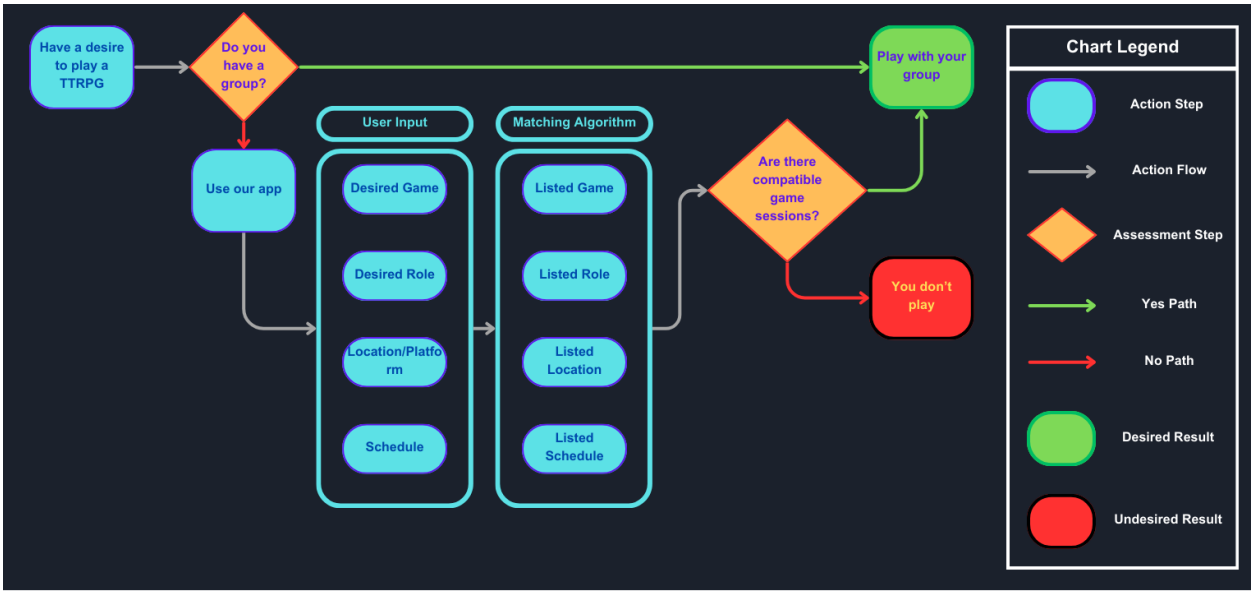

Figure 3: Solution Process Flow

Identifiable challenges faced by people looking for a TTRPG group include:

- **Geographical Constraints**: Difficulty in locating local players for in-person groups
- **Organizational Challenges**: Coordinating meeting times and locations for group play
- **Player Flakiness**: Inconsistent attendance and commitment from players disrupt game continuity
- **Mismatched Preferences**: Varied player preferences may lead to incompatible gaming styles

- **Negative Stereotypes**: Social Stigma surrounding TTRPGs may discourage potential players
- **Entry Barrier**: High initial cost and learning curve may deter new players
- **Rule Dispute**: Conflicts arising from differing interpretation of game rules and mechanics

RoleCall's user matching system can alleviate most of these challenges directly. The geographical constraints can be overcome by users specifying a desired playing location and the algorithm will attempt to match them with other players in the same area. The mismatched preferences and rules dispute are addressed by the playstyle preference users enter when creating a listing. Organizational challenges are handled by the location and schedule preferences users set.

4 Glossary

Campaign: *A series of interconnected adventures played out over multiple gaming sessions, led by the GM, providing a cohesive narrative experience for the player characters*.

Gamemaster: *The organizer and narrator of a TTRPG adventure, responsible for creating the game world, setting challenges, and facilitating gameplay.*

GM: *Gamemaster abbv.*

Player (general): *When used in the general sense, this refers to anyone who participates in a TTRPG session. This includes those in the GM and Player roles.*

Player (role): *When referring to a TTRPG role, this describes a person that navigates the game world that was created by the GM. A typical TTRPG group will have four to six Players.*

Playstyle: *Refers to the different ways players approach the game. These vary based on the individuals' preferences and can affect both roleplay and game mechanics. (e.g., Min-maxer, Role-player, Storyteller, Socializer, Casual gamer.)*

Roles: *Refer to the specific functions or responsibilities that players or characters take on with the game. (e.g., Game Master, Dungeon Master, Player Characters)*

Session: *A section of a TTRPG story that is played out in one sitting.*

Tabletop Role Playing Game: *A collaborative storytelling game where players take on fictional roles within a predetermined setting, guided by rules and moderated by a GM.*

TTRPG: *Tabletop Role Playing Game abbv.*

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