Software Requirements Specification (SRS)

For PartyUp!

Version 1.0

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1. Introduction

1.1 Purpose

The purpose of this document is to define the requirements for the PartyUp! system. This Software Requirements Specification (SRS) describes the intended functionality, constraints, and attributes of the system in a way that can be clearly understood by developers, testers, and stakeholders. The document itself serves as the basis for design, implementation, and verification of the system, ensuring all parties share the same understanding of what the software is supposed to achieve.

1.2 Scope

PartyUp! is a browser-based platform designed to help players of multiplayer games find compatible teammates. Unlike traditional matchmaking, which often results in random or unbalanced teams, PartyUp! provides a structured filtering and search system so players can find others who match their playstyle, role, skill level, and preferences.

The system allows users to:

- Create or join parties based on game, platform, rank, region, or keyword.

- Build an active community through user-generated guides and posts.

- Improve online gaming experiences by reducing reliance on random matchmaking and unreliable forms.

- Customize party listings with details such as title, description, roles needed, voice chat preference, and event schedule

-Improve online gaming experiences by reducing reliance on random matchmaking and unreliable forms.

Ultimately, PartyUp! improves cooperative gameplay by ensuring teams are more balanced, reliable, and enjoyable.

1.3 Definitions, Acronyms, and Abbreviations

-Live players: The number of people actively playing a game at a particular time

-Looking for group: A feature in multiplayer games that allows people to find teammates before matchmaking

-Matchmaking: The process of pairing players together in multiplayer games

-Party: Players grouped together before matchmaking

-Platform: The hardware you play a game on, such as, PlayStation, Xbox, PC, and Nintendo Switch

-Randoms: Players randomly matched by the matchmaker, particularly low skilled players

-Toxic: A mean or otherwise very unpleasant player or behavior

1.4 References

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1.5 Overview

This document is organized into four main sections:

- Introduction provides context, definitions, and scope.

- Overall Description describes the system at a high level, including its perspective, main functions, and user characteristics.

- Specific Requirements will detail functional, interface, and performance requirements.

- Appendices will provide supporting material such as diagrams and additional background information.

2. Overall Description

2.1 Product Perspective

PartyUp! is a standalone web application built with a Node.js backend, a MySQL database, and a React-based frontend. The system operates through standard web browsers, making it accessible across platforms with no special hardware requirements beyond an internet-connected device. It provides a centralized service where players can connect with others, addressing the shortcomings of random matchmaking systems in online games [1], [2], [3]. The product environment includes both end-user devices (clients) and server infrastructure that hosts the application, processes user requests, and maintains persistent user, party, and community data. The frontend provides a responsive interface for the Home, Find Party, and Create Party pages, allowing users to browse, filter, and create parties. The Node.js backend manages data flow, authentication, and application logic, while the MySQL database securely stores all user, party, and community information for long-term access and reliability.

2.2 Product Functions

Key functions of the PartyUp! platform include [1], [4], [5]:

- User Account Management: Register, authenticate, and manage profiles.

- Party Creation and Joining: Users can create a party with custom fields such as game, platform, region, title, description, roles needed, voice chat requirements, and schedule, or search for existing ones based on filters.

- Filtering and Search: Match players by game, platform, region, role, language, rank, or keyword to find the most compatible groups.

- Community Features: User-generated content such as guides, community posts, and discussions to promote interaction outside of matchmaking.

- Compatibility Features: Help ensure balanced teams by enabling users to define their desired roles and skill level when creating or joining parties.

2.3 User Characteristics

The system is intended for [1], [6], [7]:

- Casual Players who want enjoyable, non-toxic teammates.

- Competitive Players who need reliable, skilled teammates for ranked or tournament play.

- Content Creators who wish to form consistent groups for streaming or content recording.

Users are generally expected to:

- Be familiar with online multiplayer games.

- Understand basic web navigation and account management.

- Range from casual to advanced gamers, with varying degrees of technical expertise.

2.4 Constraints

N/A

2.5 Assumptions and Dependencies

N/A

3. Specific Requirements

3.1 Party Creation Requirements (FR-1)

FR-1.1 Party Creation – Game Selection
(O: Renn, M1: Fisher, M2: Lanier, M3: Joaquim, M4: Davis)

Description:

The system shall provide the capability for a registered user to specify the game title for which the party is being created.

Acceptance:

A test user will select a game from a predefined list (e.g., Marvel Rivals, Rainbow Six Siege). After party creation, the selected game title shall appear correctly within the created party entry displayed to other users.

FR-1.2 Party Creation – Platform Selection
(O: Renn, M1: Fisher, M2: Lanier, M3: Joaquim, M4: Davis)

Description:

The system shall provide the capability for a registered user to specify the gaming platform (e.g., PC, Xbox, PlayStation, Switch) for a new party.

Acceptance:

A test user will select a platform during party creation and verify that the correct platform is displayed in the "Find Party" listing and party details.

FR-1.3 Party Creation – Region Selection
(O: Renn, M1: Fisher, M2: Lanier, M3: Joaquim, M4: Davis)

Description:

The system shall allow the user to specify the region when creating a party to ensure compatibility in latency and time zone.

Acceptance:

A test user will select a region and confirm that only users filtering by that region can view the party.

FR-1.4.1 Party Creation – Party Title Entry
(O: Renn, M1: Fisher, M2: Lanier, M3: Joaquim, M4: Davis)

Description:

The system shall allow a registered user to enter a party title, which shall be displayed prominently in all party listings.

Acceptance:

A test user will input a party title, create the party, and verify that it appears correctly in all party listings.

FR-1.4.2 Party Creation – Party Description Entry
(O: Renn, M1: Fisher, M2: Lanier, M3: Joaquim, M4: Davis)

Description:

The system shall allow a registered user to enter a party description summarizing the purpose and expectations of the session.

Acceptance:

A test user will input a description and verify that it displays correctly in all party listings.

FR-1.5 Party Creation – Roles Needed
(O: Renn, M1: Fisher, M2: Lanier, M3: Joaquim, M4: Davis)

Description:

The system shall allow a user to specify one or more roles needed for the party.

Acceptance:

A test user will enter required roles, and the roles shall display correctly in listings.

FR-1.6 Party Creation – Voice Chat Preference
(O: Renn, M1: Fisher, M2: Lanier, M3: Joaquim, M4: Davis)

Description:

The system shall allow users to specify a voice chat preference (required, optional, or not needed).

Acceptance:

A test user will set a preference and verify the label appears correctly in party details.

FR-1.7 Party Creation – Schedule Specification
(O: Renn, M1: Fisher, M2: Lanier, M3: Joaquim, M4: Davis)

Description:

The system shall allow users to specify a scheduled date and time for the party session.

Acceptance:

A test user will input a date/time and verify it displays correctly in listings.

FR-1.8.1 Party Creation – Party Submission
(O: Renn, M1: Fisher, M2: Lanier, M3: Joaquim, M4: Davis)

Description:

The system shall store all provided party information upon submission.

Acceptance:

A test user will submit a party and verify that the party is saved in the database.

FR-1.8.2 Party Creation – Party Visibility
(O: Renn, M1: Fisher, M2: Lanier, M3: Joaquim, M4: Davis)

Description:

The system shall make newly created parties visible to users whose filters match the party's attributes.

Acceptance:

A test user will verify that the new party appears in "Find Party" with correct attributes.

3.2 Profile Management Requirements (FR-2)

FR-2.1 Profile Management – Profile Display
(O: Fisher, M1: Renn, M2: Lanier, M3: Joaquim, M4: Davis)

Description:

The system shall display each user's profile picture, About Me description, and account creation timestamp.

Acceptance:

A test user will verify all profile fields display correctly.

FR-2.2.1 Profile Management – Upload New Profile Picture
(O: Fisher, M1: Renn, M2: Lanier, M3: Joaquim, M4: Davis)

Description:

The system shall allow a user to upload a new profile picture.

Acceptance:

A test user will upload a picture and verify that it updates immediately.

FR-2.2.2 Profile Management – Replace Existing Profile Picture
(O: Fisher, M1: Renn, M2: Lanier, M3: Joaquim, M4: Davis)

Description:

The system shall replace the existing profile picture with the newly uploaded one and store it.

Acceptance:

A test user will reload the page and verify the new picture persists.

FR-2.3.1 Profile Management – Modify "About Me" Content
(O: Fisher, M1: Renn, M2: Lanier, M3: Joaquim, M4: Davis)

Description:

The system shall allow users to edit their About Me text.

Acceptance:

A test user will edit the field and verify the updated content appears.

FR-2.3.2 Profile Management – Save Updated "About Me" Content
(O: Fisher, M1: Renn, M2: Lanier, M3: Joaquim, M4: Davis)

Description:

The system shall store the updated About Me content.

Acceptance:

A test user will refresh or re-login to verify persistence.

FR-2.4 Profile Management – Data Persistence
(O: Fisher, M1: Renn, M2: Lanier, M3: Joaquim, M4: Davis)

Description:

The system shall maintain profile data consistency across sessions and devices.

Acceptance:

A test user will log in on a separate device and verify all profile data.

3.3 Party Discovery & Management Requirements (FR-3)

FR-3.1 Party Overview – My Parties Listing
(O: Davis, M1: Renn, M2: Lanier, M3: Joaquim, M4: Fisher)

Description:

The system shall display all parties created or joined by the user.

Acceptance:

A test user will navigate to My Parties and verify the list displays correctly.

FR-3.2 Party Discovery – View Open Parties
(O: Davis, M1: Renn, M2: Lanier, M3: Joaquim, M4: Fisher)

Description:

The system shall allow users to view all currently open parties.

Acceptance:

A test user will open Find Party and verify populated listings.

FR-3.3 Party Discovery – Filtering and Search
(O: Davis, M1: Renn, M2: Lanier, M3: Joaquim, M4: Fisher)

Description:

The system shall provide filters for game, platform, region, and keyword.

Acceptance:

A test user will apply filters and verify only matching parties are shown.

FR-3.4.1 Party Joining – Join an Available Party
(O: Davis, M1: Renn, M2: Lanier, M3: Joaquim, M4: Fisher)

Description:

The system shall allow a user to join any available open party.

Acceptance:

A test user will join a party and verify they appear in My Parties.

FR-3.4.2 Party Joining – Record Party Membership in Database
(O: Davis, M1: Renn, M2: Lanier, M3: Joaquim, M4: Fisher)

Description:

The system shall store user-party membership in the database.

Acceptance:

A test user will re-login and verify the party membership persists.

FR-3.5 Party Management – Leave or Disband
(O: Davis, M1: Renn, M2: Lanier, M3: Joaquim, M4: Fisher)

Description:

The system shall allow users to leave a party and hosts to disband it.

Acceptance:

A test user will leave or disband a party and verify it no longer appears.

3.4 Authentication Requirements (FR-4)

FR-4.1.1 Authentication – Registration Form Submission
(O: Lanier, M1: Renn, M2: Fisher, M3: Joaquim, M4: Davis)

Description:

The system shall allow new users to register with a unique email, password, and optional display name.

Acceptance:

A test user will register successfully and see a confirmation message.

FR-4.1.2 Authentication – Credential Validation and Secure Storage
(O: Lanier, M1: Renn, M2: Fisher, M3: Joaquim, M4: Davis)

Description:

The system shall validate registration data and securely store credentials.

Acceptance:

A test user will log in with new credentials to confirm proper storage.

FR-4.2.1 Authentication – Login Authentication
(O: Lanier, M1: Renn, M2: Fisher, M3: Joaquim, M4: Davis)

Description:

The system shall authenticate users via a secure login form.

Acceptance:

A test user will log in successfully and confirm correct authentication.

FR-4.2.2 Authentication – Maintain Session State
(O: Lanier, M1: Renn, M2: Fisher, M3: Joaquim, M4: Davis)

Description:

The system shall maintain an active session until logout.

Acceptance:

A test user will navigate multiple pages without being logged out.

FR-4.2.3 Authentication – User Logout
(O: Lanier, M1: Renn, M2: Fisher, M3: Joaquim, M4: Davis)

Description:

The system shall terminate the session upon logout.

Acceptance:

A test user will log out and be denied access to authenticated pages.

FR-4.3 Authentication – Two-Factor Verification (Real World Product)
(O: Lanier, M1: Renn, M2: Fisher, M3: Joaquim, M4: Davis)

Description:

The system shall offer optional two-factor authentication via email verification code.

Acceptance:

A test user will attempt login with 2FA enabled and verify code entry is required.

3.5 Community Hub Requirements (FR-5)

FR-5.1 Community Hub – Post Creation
(O: Fisher, M1: Renn, M2: Lanier, M3: Joaquim, M4: Davis)

Description:

The system shall allow users to create community posts (e.g., guides or discussions) visible to all users.

Acceptance:

A test user will submit a post and confirm its display within the Community Hub list.

FR-5.2 Community Hub – Commenting and Interaction
(O: Lanier, M1: Renn, M2: Fisher, M3: Joaquim, M4: Davis)

Description:

The system shall allow users to comment on or reply to community posts to encourage discussion.
Acceptance:

A test user will comment on a post and verify it appears immediately.

FR-5.3 Moderation – Reporting and Blocking (RWP)
(O: Lanier, M1: Renn, M2: Fisher, M3: Joaquim, M4: Davis)

Description:

The system shall allow users to report or block inappropriate users.

Acceptance:

A test user will submit a report and verify the system records it.

3.6 Accessibility & Subscription Requirements (FR-6 & FR-7)

FR-6.1 Accessibility – Cross-Platform Support
(O: Renn, M1: Fisher, M2: Lanier, M3: Joaquim, M4: Davis)

Description:

The system shall function consistently across desktop, tablet, and mobile browsers.

Acceptance:

A test user will access the system from multiple devices and verify consistent behavior.

FR-7.1 Subscription – Ad-Free Experience (Real World Product)
(O: Renn, M1: Fisher, M2: Lanier, M3: Joaquim, M4: Davis)

Description:

The system shall allow premium subscribers to experience the platform without advertisements.

Acceptance:

A test user with premium status will verify that no ads appear.

3.7 Non-Functional Requirements (NFR)

NFR-1 Performance

NFR-1.1 – Page Responsiveness
(O: Renn, M1: Fisher, M2: Lanier, M3: Joaquim, M4: Davis)

Description:

The system shall load all primary pages—including Home, Find Party, and Create Party—within 3 seconds under normal network conditions.

NFR-1.2 – Database Query Performance
(O: Renn, M1: Fisher, M2: Lanier, M3: Joaquim, M4: Davis)

Description:

The system shall fulfill standard database queries within 500 milliseconds on average.

NFR-2 Security

NFR-2.1 – Password Protection
(O: Renn, M1: Fisher, M2: Lanier, M3: Joaquim, M4: Davis)

Description:

All stored passwords shall be hashed using an industry-standard secure hashing algorithm.

NFR-2.2 – Encrypted Communication (RWP)
(O: Renn, M1: Fisher, M2: Lanier, M3: Joaquim, M4: Davis)

Description:

All communication between client and server shall occur over HTTPS.

NFR-2.3 – Session Security (RWP)
(O: Renn, M1: Fisher, M2: Lanier, M3: Joaquim, M4: Davis)

Description:

The system shall protect session tokens from session-fixation, hijacking, and replay attacks.

NFR-3 Reliability

NFR-3.1 – System Availability (RWP)
(O: Renn, M1: Fisher, M2: Lanier, M3: Joaquim, M4: Davis)

Description:

The system shall maintain 99% uptime, excluding planned maintenance.

NFR-3.2 – Data Integrity
(O: Renn, M1: Fisher, M2: Lanier, M3: Joaquim, M4: Davis)

Description:

The system shall prevent data loss during unexpected failures or restarts.

NFR-4 Usability

NFR-4.1 – Consistent User Interface
(O: Renn, M1: Fisher, M2: Lanier, M3: Joaquim, M4: Davis)

Description:

The system shall present a cohesive and consistent interface across all supported devices.

NFR-4.2 – Ease of Onboarding
(O: Renn, M1: Fisher, M2: Lanier, M3: Joaquim, M4: Davis)

Description:

A new user shall be able to register, log in, and create or join a party within 5 minutes of beginning use.

NFR-5 Maintainability

NFR-5.1 – Modular Architecture
(O: Renn, M1: Fisher, M2: Lanier, M3: Joaquim, M4: Davis)

Description:

The system shall follow a modular architecture that enables updates without breaking existing features.

NFR-5.2 – Developer Documentation
(O: Renn, M1: Fisher, M2: Lanier, M3: Joaquim, M4: Davis)

Description:

All system modules shall be documented clearly enough to enable new developers to make changes safely.

NFR-6 Scalability

NFR-6.1 – Concurrent Users (RWP)
(O: Renn, M1: Fisher, M2: Lanier, M3: Joaquim, M4: Davis)

Description:

The system shall support at least 10,000 concurrent active users without degradation in performance.

NFR-6.2 – Database Expandability
(O: Renn, M1: Fisher, M2: Lanier, M3: Joaquim, M4: Davis)

Description:

The database shall be designed to add new features or tables without requiring major schema redesign.