

***Software Engineering
Software Requirements Specification
(SRS) Document***

Hooplaza

09/21/2023

Version 1.0

By: Logan Roberts, Ethan Mongelli, Kol Herget

[Honor Code]

Table of Contents

1. Introduction.....	3
1.1. Purpose.....	3
1.2. Document Conventions.....	3
1.3. Definitions, Acronyms, and Abbreviations	3
1.4. Intended Audience	4
1.5. Project Scope	4
1.6. Technology Challenges.....	4
1.7. References.....	4
2. General Description	4
2.1. Product Perspective.....	4
2.2. Product Features.....	5
2.3. User Class and Characteristics	5
2.4. Operating Environment.....	5
2.5. Constraints	5
2.6. Assumptions and Dependencies	5
3. Functional Requirements	5
3.1. Primary.....	5
3.2. Secondary.....	6
4. Technical Requirements.....	6
4.1. Operating System and Compatibility	6
4.2. Interface Requirements	6
4.2.1. User Interfaces	6
4.2.2. Hardware Interfaces	6
4.2.3. Communications Interfaces	6
4.2.4. Software Interfaces	7
5. Non-Functional Requirements	7
5.1. Performance Requirements	7
5.2. Safety Requirements	7
5.3. Security Requirements	7
5.4. Software Quality Attributes	7
5.4.1. Availability	7
5.4.2. Correctness.....	7
5.4.3. Maintainability	7
5.4.4. Reusability	7
5.4.5. Portability.....	7

5.5. Process Requirements	7
5.5.1. Development Process Used.....	7
5.5.2. Time Constraints	8
5.5.3. Cost and Delivery Date	8
5.6. Other Requirements	8
5.7. Use-Case Model Diagram.....	8
5.8. Use-Case Model Descriptions.....	8
5.8.1. Actor: Actor Name (Responsible Team Member)	8
5.8.2. Actor: Actor Name (Responsible Team Member)	8
5.8.3. Actor: Actor Name (Responsible Team Member)	8
5.9. Use-Case Model Scenarios	8
5.9.1. Actor: Actor Name (Responsible Team Member)	8
5.9.2. Actor: Actor Name (Responsible Team Member)	9
5.9.3. Actor: Actor Name (Responsible Team Member)	9
6. Design Documents	9
6.1. Software Architecture	9
6.2. High-Level Database Schema.....	10
6.3. Software Design.....	10
6.3.1. State Machine Diagram: Actor Name (Responsible Team Member)	10
6.3.2. State Machine Diagram: Actor Name (Responsible Team Member)	10
6.3.3. State Machine Diagram: Actor Name (Responsible Team Member)	10
6.4. UML Class Diagram	10
7. Scenario.....	10
7.1. Brief Written Scenario with Screenshots	10

1. Introduction

1.1. Purpose

[The goal of your project and the objectives it wishes to accomplish]

HooPlaza is a neighborhood social networking service. It is designed as a community hub for events, community projects, and clubs. The main objective of this app is to connect community members and ease car-dependency by allowing users to join in activities that are close-by, instead of far away from their neighborhood. HooPlaza is a Web Application that can be reached via the internet, on a web browser. It is designed to allow users to connect to an admin to create a new community and, as a moderator, appoint other users as moderators and keep the community organized. It allows users to join clubs and RSVP to events they may not have otherwise known about.

1.2. Document Conventions

[Full description of the main objectives of this document in the context of your project. Here's how you should begin this section: "The purpose of this Software Requirements Document (SRD) is to..." "In it, we will . . . , . . . , and . . . "]

The purpose of this Software Requirements Document (SRD) is to describe the requirements of Hooplaza from both a user experience and developer oriented points of view. User-oriented sections will detail the system from the user's perspective. These requirements include descriptions of the different types of users and the actions able to be performed by each. Developer requirements describe the system from a software developers perspective. These requirements include detailed descriptions for the architecture, function, performance, and other necessary requirements.

1.3. Definitions, Acronyms, and Abbreviations

[Include any specialized terminology dictated by the application area or the product area. For example:]

Java	A programming language originally developed by James Gosling at Sun Microsystems. This is the language that will be used to develop Hooplaza.
MySQL	Open-source relational database management system.
HTML	Hypertext Markup Language. This is the code that will be used to structure and design the web application and its content.
SpringBoot	An open-source Java-based framework used to create a micro Service. This will be used to create and run our application.
MVC	Model-View-Controller. This is the architectural pattern that will be used to implement our system.
Spring Web	Will be used to build our web application by using Spring MVC. This is one of the dependencies of our system.
Thymeleaf	A modern server-side Java template engine for our web environment. This is one of the dependencies of our system.
Intellij	An integrated development environment (IDE) for Java. This is where our system will be created.
API	Application Programming Interface. This will be used to implement a function within the software where the current date and time is displayed on the homepage.

Communities	The organizational units within the application. Users will be able to interact with each other within them. Communities should correspond to physical locations such as neighborhoods.
-------------	---

1.4. Intended Audience

Describe which part of the SRS document is intended for which reader. Include a list of all stakeholders of the project, developers, project managers, and users for better clarity.]

Developers: Developers will benefit from sections 2.x, 3.x, 4.x, 5.x, and 6.x of the SRD. Every one of these sections contains data that will be beneficial to the development of Hooplaza.

Project Managers: Project managers will benefit from sections 2.x, 3.x, 5.[5-9], 6.x, as well as 7.x. These sections contain information that are beneficial for understanding the project without unnecessary detail related to the implementation.

Users: Users will benefit from sections, 2.x, 5.7, 5.8, and 7.x as these sections contain data relevant to the use of Hooplaza. They include information that might help a user better understand how to make full use of the platform.

1.5. Project Scope

[Specify how the software goals align with the overall business goals and outline the benefits of the project to business.]

The goal of the software is to provide a centralized platform for users to become connected to their local communities and become engaged in activities. User adoption will lead to a platform for expanded services that will benefit the business as well as the users.

Possible monetizable platform features include:

- Integrated booking of services such as food trucks, or local entertainers.
- Event planning help lines.
- Adding the ability to tip active event organizers, or other active community members.

1.6. Technology Challenges

[Any technological constraints that the project will be under. Any new technologies you may need to use] Doesn't need to be done yet.

1.7. References

[Mention books, articles, web sites, worksheets, people who are sources of information about the application domain, etc. Use proper and complete reference notation. Give links to documents as appropriate. You should use the APA Documentation model (Alfred, 2003, p. 144).]

Doesn't need to be done yet.

2. General Description

2.1. Product Perspective

[Describe the context and origin of the product.]

HooPlaza was conceptualized by a preemptive step away from car dependency and to bring local communities together. The idea is driven by the condition to improve everyday local socialization and interactions.

2.2. Product Features

[A high-level summary of the functions the software would perform and the features to be included.]

HooPlaza will generate location-based communities at a users request. It will allow moderators to add members to their community, appoint others to moderators. If a user tries to create a community within an already established community location, the app will notify moderators of the established community that someone would like to be a part of it. Members will be able to create posts to be seen by everyone in their community. Events with locations can be put on the map for users to view.

2.3. User Class and Characteristics

[A categorization and profiling of the users the software is intended for and their classification into different user classes]

Admin: Runs operations such as creating communities within a location. Directs users to their community as needed. Appoints/removes moderators.

Moderator: Organizes their respective community. Adds/kicks users from the community

Basic user: Creates posts. RSVPs to events. Requests create community

2.4. Operating Environment

[Specification of the environment the software is being designed to operate in.]

This application is designed to work on the web across PC and Laptop devices.

2.5. Constraints

[Any limiting factors that would pose challenge to the development of the software. These include both design as well as implementation constraints.]

N/A

2.6. Assumptions and Dependencies

[A list of all assumptions that you have made regarding the software product and the environment along with any external dependencies which may affect the project]

Assumptions: the API will allow for a visual map of a community area.

3. Functional Requirements

[Statements of services the system should provide, how the system should react to particular inputs and how the system should behave in particular situations.]

3.1. Primary

[All the requirements within the system or sub-system in order to determine the output that the software is expected to give in relation to the given input. These consist of the design requirements, graphics requirements, operating system requirements and constraints if any.]

- FR0: Users should be able to view and join communities. The user should only be able to interact in communities they have joined.
- FR1: Users should be able to make, and read posts in communities they have joined.

- FR2: Users should be able to request for a new community to be made if one for the location they wish is not available.
- FR3: Each community should have moderators which have the power to remove users from a group, as well as add other moderators.
- FR4: There should be site admins that have the ability to approve community creation requests, and ban users from the site.

3.2. Secondary

[Some functions that are used to support the primary requirements.]

- Duplicate communities should not exist
- Authorization scheme such that no users will be able to perform actions they are not supposed to. Authentication should be done through passwords.

4. Technical Requirements

1.1. Operating System and Compatibility

[The environments that will be needed to operate the system]

The system should be compatible with any system that is able to interact with traditional web pages.

1.2. Interface Requirements

1.2.1. User Interfaces

[The logic behind the interactions between the users and the software. This includes the sample screen layout, buttons and functions that would appear on every screen, messages to be displayed on each screen and the style guides to be used.]

There will be a button to make posts. There will be three feed sections: Posts, Events, and Announcements, and Announcements will be viewable from any screen of the app where the user is in a community. There will be a hamburger button that holds all communities the user is a part of, and the user can switch between these communities.

1.2.2. Hardware Interfaces

[All the hardware-software interactions with the list of supported devices on which the software is intended to run on, the network requirements along with the list of communication protocols to be used.]

The application will run on any device able to access the internet and interact with and display webpages. Examples of such devices include smart phones, tablets, laptops, desktop computers and more.

1.2.3. Communications Interfaces

[Determination of all the communication standards to be utilized by the software as a part of the project]

It must be able to connect to the internet as well as some databases for persistent information storage. HTTP will be used for any internet based communication, and the Google maps API should be accessible for location lookup and embedding.

1.2.4. Software Interfaces

[The interaction of the software to be developed with other software components such as frontend and the backend framework to be used, the database management system and libraries describing the need and the purpose behind each of them.]

The frontend will utilize JavaScript and Springboot Thymeleaf. The JPA (Java Persistence API) will be used for the backend database functionality. Springboot with java will be used to connect the frontend and the backend.

5. Non-Functional Requirements

[Constraints on the services or functions offered by the system (e.g., timing constraints, constraints on the development process, standards, etc.). Often apply to the system as a whole rather than individual features or services.]

5.1. Performance Requirements

[The performance requirements need to be specified for all the functional requirements.]

- NFR0: The local version of the database should use less than 100MB of memory
- NFR1: The system should use less than 200MB of memory including the database.
- NFR2: Posts should appear to other users within one minute of a given user posting it.

5.2. Safety Requirements

[List out any safeguards that need to be incorporated as a measure against any possible harm the use of the software application may cause.]

- NFR3: All user input should be sanitized to prevent users from performing SQL injection attacks, such that malicious actors do not have access to the locations and times of events within communities.

5.3. Security Requirements

[Privacy and data protection regulations that need to be adhered to while designing of the product.]

- NFR4: Only users within a community should be able to access or make posts within a community.
- NFR5: Users should be required to authenticate before they can access the system.

5.4. Software Quality Attributes

[Detailing on the additional qualities that need to be incorporated within the software like maintainability, adaptability, flexibility, usability, reliability, portability etc.]

5.4.1. Availability

HooPlaza must be usable with multiple communities filled with multiple users & moderators

5.4.2. Correctness

N/A

5.4.3. Maintainability

Will be maintained by developers and admins

5.4.4. Reusability

N/A

5.4.5. Portability

As a web application, HooPlaza will be usable in any internet browser

5.5. Process Requirements

5.5.1. Development Process Used

[Software Process Model]

5.5.2. Time Constraints

Must be finished by end of November. All developers have different availabilities, so planning meetings may be difficult

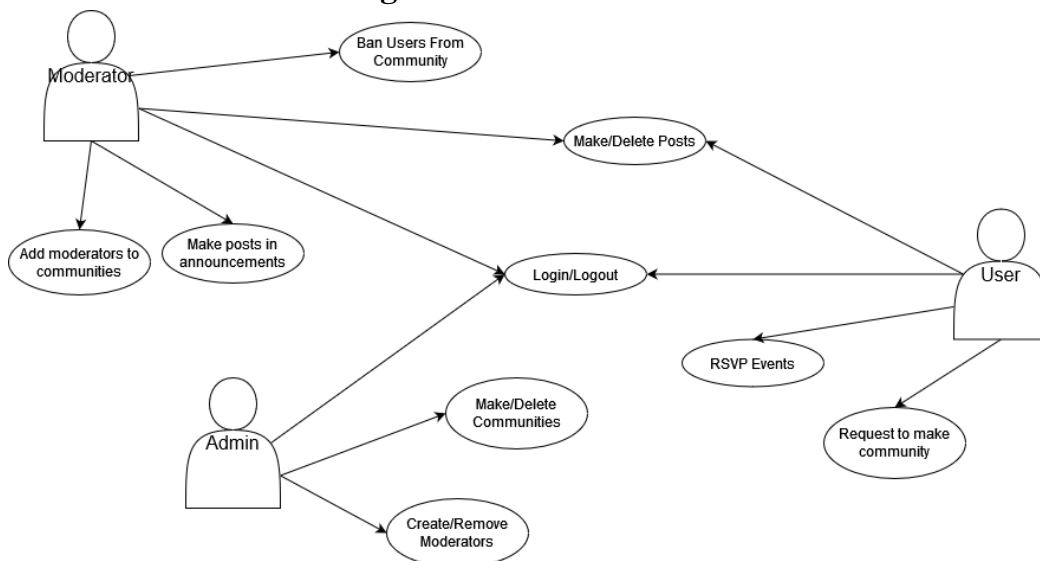
5.5.3. Cost and Delivery Date

\$0. Estimated delivery date: December 5

5.6. Other Requirements

TBD

5.7. Use-Case Model Diagram



5.8. Use-Case Model Descriptions

5.8.1. Actor: Admin (Logan Roberts)

- Use-Case Name: Create Community
- Use-Case Name: Delete Community

5.8.2. Actor: Moderator (Ethan Mongelli)

- Use-Case Name: Make Announcement
- Use-Case Name: Ban User

5.8.3. Actor: Basic User (Kol Herget)

- Use-Case Name: RSVP Event
- Use-Case Name: Request to Create Community

5.9. Use-Case Model Scenarios

5.9.1. Actor: Admin (Logan)

- Use-Case Name: Create Community
 - **Initial Assumption:** There may or may not be an existing community at the requested location.
 - **Normal:** Location information is stored in a community on a MySQL server. Community is made and requester is given Moderator role in that community

- **What Can Go Wrong:** Community is already created in the requested location
- **Other Activities:** N/A
- **System State on Completion:** New community is backed up, as well as requester's moderator status.
- **Use-Case Name:** Delete Community
 - **Initial Assumption:** The community exists.
 - **Normal:** Community information is deleted, and all community members are removed from it. The community is deleted.
 - **What Can Go Wrong:** The community does not exist.
 - **Other Activities:** N/A
 - **System State on Completion:** Updates are backed up

5.9.2. Actor: Moderator (Ethan)

- **Use-Case Name:** Make Announcement
 - **Initial Assumption:** Announcement page exists
 - **Normal:** Post is made in announcements section of the app
 - **What Can Go Wrong:** Announcement section is unavailable/unviewable
 - **Other Activities:** N/A
 - **System State on Completion:** Announcement is in its section
- **Use-Case Name:** Ban User
 - **Initial Assumption:** User is in the community
 - **Normal:** User is removed from community and blacklisted from it on the server
 - **What Can Go Wrong:** User not in the community – cannot be banned
 - **Other Activities:** N/A
 - **System State on Completion:** Blacklist updated and backed up

5.9.3. Actor: Basic User (Kol)

- **Use-Case Name:** RSVP Event
 - **Initial Assumption:** Button for 'yes' and 'no'
 - **Normal:** Button is clicked, attendance information is saved
 - **What Can Go Wrong:** RSVP List at capacity
 - **Other Activities:** N/A
 - **System State on Completion:** User is RSVP'd to the event
- **Use-Case Name:** Request to Create Community
 - **Initial Assumption:** Community not already created in requested location
 - **Normal:** Request is sent to admin, admin does use-case "Create Community"
 - **What Can Go Wrong:** request unable to send – blocked servers. Community already established
 - **Other Activities:** N/A
 - **System State on Completion:** Admin receives request

6. Design Documents

6.1. Software Architecture

6.2. High-Level Database Schema

6.3. Software Design

6.3.1. State Machine Diagram: Actor Name (Responsible Team Member)

6.3.2. State Machine Diagram: Actor Name (Responsible Team Member)

6.3.3. State Machine Diagram: Actor Name (Responsible Team Member)

6.4. UML Class Diagram

7. Scenario

7.1. Brief Written Scenario with Screenshots