

What is SPAITR Map?

SPAITR Map is a mobile app where nearby lacrosse players can coordinate pick-up lacrosse games locally.

This is designed to be an extension of the main SPAITR app which provides lacrosse players with their game data to optimize improvement.

With the SPAITR Map, lacrosse players can organize lacrosse games and play with new people more easily. The overall goal is to strengthen community involvement in lacrosse and to help the SPAITR app gain more users.

Measurable Organizational Value

The SPAITR Map is going to be successful if at least 30% of current SPAITR users use the SPAITR Map to play pickup games with a consistent turn out of at least 5 players per game by the end of the Spring 2022 semester.

Requirements

Functional Requirements

- Allow players to schedule a pick-up lacrosse game to happen at a location
- Let players specify relevant game options like time, date, and total expected players
- Let other players see active games and join them
- Let players control who their games are visible to on the map Provide a history of where games were played in the past to determine popular locations

Non-Functional Requirements

- App must be compatible with iOS and Android
- Updates of new game information should be received at an interval of ~ 10 seconds

Security

 Authentication system needed to determine player identity and handle malicious activity

Tools

- Flutter/Dart: Library used for mobile app development. Can be built into both an iOS and Android app.
- Flask: Backend library used for server to communicate with app and database.
- **MongoDB**: Database used to store user information in the app.

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Diagram of client/server communication between SPAITR Map, server, and database

- Professor Benedetto

In collaboration with SPAITR



Testing

Unit tests were used to test core client functionality like game validation and the REST controller. When required, partial mocking was used to replicate complex objects like the server to help isolate the testing of functionality like JSON parsing.

Unit tests were used to test main REST functionality with the client application. Interacting with the database was done with unit tests and confirming the data was correct was done both manually and

Project Results

We couldn't test the value of the project for SPAITR since we didn't get to integrate it with the main SPAITR app due to time constraints. In the future, we hope to use analytics to track how users are using the SPAITR Map to better understand the value it

- A player can schedule a game to happen at a location
- Other players on separate devices can see and join games on
- Implemented algorithm to determine relevant nearby games to the player based on location
- Backend server created to support necessary REST API calls that the SPAITR Map app can use

Next Steps

Add feature where users can see popular spots for previous

Add login support for improved security and player tracking

 Add privacy functionality where users can restrict their scheduled game and block other users

Integrate with SPAITR app and use analytics to track how users are interacting with the map

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