## Problem Definition

### Name of this Capstone Project

* Official name: Football Field Reservation System
* Vietnamese name: Hệ thống đặt chỗ đá bóng
* Abbreviation: FFRS

### Problem Abstract

### Project Overview

#### Current diagnostic diseases

Below are the problems encountered in this project:

* New technique: some team members are new to the techniques used in the project. The team need an amount of time to get familiar with those techniques.
* Fix scope: the scope of the project is not simple to determine. There are some factors that may affect and the team have to decide scope correctly.
* Absence of team members: team members can get sick or unexpected problems.

#### The Proposed System

The system will have three sub-systems:

* A mobile application for users to perform find matches, create matches, join matches.
* An API application to serve API for mobile application and web application
* A web application for admin manage field owner and for users manage their football field.

##### Mobile Application:

* For users who use mobile application:

+ Manage profile

+ Create matches

+ Cancel matches

+ Find matches

+ Join matches

* For guests:

+ Become user

##### Web Application

* For admin:

+ Manage field owner account

+ Solve report

* For user who use web application:

+ Manage football field

##### API Application

The server system takes responsibility to respond all the requests and also manages and processes data.

* Provide APIs for Mobile Application, Web Application
* Perform data processing

#### Boundaries of the System

The system does:

* Allow user find matches
* Allow user join matches
* Allow user create matches
* Allow user cancel matches
* Suggest competitor with same level
* Schedule time of football field
* Choose the best football field for two users.
* Allow user manage their football field
* Notify user when football field is booked
* Notify football teams when challenge is accepted
* Allow admin manage field owner
* Allow admin solve report

#### Future plans

Current system is concentrated on core business flow. Therefore, some supporting features are restricted adapted for the development team. These features may be expanded in the future:

* Improve suggest competitor more correctly.
* Evaluate a user level more correctly.

#### Development Environment

##### Hardware requirement

* **For server:**

|  |  |  |
| --- | --- | --- |
| **Linux** | **Minimum Requirements** | **Recommended** |
| Internet Connection | Cable (4 Mbps) | Cable (8 Mbps) |
| Operating System | Ubuntu 12.04 LTS | Ubuntu 16.04 LTS |
| Computer Processor | Intel® Core i3 1.4GHz | Intel® Core i5 2.50GHz |
| *Table 1: Hardware requirement for Server* | | |

* **For mobile:**
* **For**

|  |  |  |
| --- | --- | --- |
| **Linux** | **Minimum Requirements** | **Recommended** |
| Internet Connection | Wi-Fi or 3G (4 Mbps) | Cable (8 Mbps) |
| Operating System | Android 5 | Android 7 or above |
| Device | Sony Z5 | Sony Z5 or later |
| *Table 3: Hardware requirement for Mobile* | | |