UNIVERSITY OF INFORMATION & TECHNOLOGY

FACULTY OF COMPUTER SCIENCE

**Logo

Description automatically generated**

|  |  |
| --- | --- |
| **Name** | **ID** |
| **Đỗ Minh Khôi** | **21521007** |
| **Trần Xuân Thành** | **21520456** |
| **Nguyễn Hà Anh Vũ** | **21520531** |

SYSTEM REQUIREMENT SPECIFICATION (SRS)

**Topic: National Football League Management**  
**Class code:** SE104.N24.CLC  
**Instructor:** Ths. Nguyễn Thị Thanh Trúc  
**Implementation team:** Team 13

**Contents**

[1. Introduction 2](#_Toc132903143)

[1.1. Purpose 2](#_Toc132903144)

[1.2. Document Conventions 2](#_Toc132903145)

[1.3. Project Scope 2](#_Toc132903146)

[1.4. References 2](#_Toc132903147)

[2. Overall Description 3](#_Toc132903148)

[2.1. Product Perspective 3](#_Toc132903149)

[2.2. User Classes and Characteristics 4](#_Toc132903150)

[2.3. Operating Environment 4](#_Toc132903151)

[2.4. Design and Implementation Constraints 4](#_Toc132903152)

[2.5. Assumptions and Dependencies (\*) 4](#_Toc132903153)

[3. System Features 5](#_Toc132903154)

[3.1. Create User Account 5](#_Toc132903155)

[3.1.1. Description 5](#_Toc132903156)

[3.1.2. Functional Requirements 5](#_Toc132903157)

[3.2. Sign-in 6](#_Toc132903158)

[3.2.1. Description 6](#_Toc132903159)

[3.2.2. Functional Requirements 7](#_Toc132903160)

[3.3. Create Team Profile 7](#_Toc132903161)

[3.3.1. Description 7](#_Toc132903162)

[3.3.2. Functional Requirements 8](#_Toc132903163)

[3.4. Scheduling Match 8](#_Toc132903164)

[3.4.1. Description 8](#_Toc132903165)

[3.4.2. Functional Requirements 9](#_Toc132903166)

[3.5. Record Match Result 10](#_Toc132903167)

[3.5.1. Description 10](#_Toc132903168)

[3.5.2. Functional Requirements 10](#_Toc132903169)

[3.6. Player Lookup 11](#_Toc132903170)

[3.6.1. Description 11](#_Toc132903171)

[3.6.2. Functional Requirements 11](#_Toc132903172)

[3.7. Create Tournament Report 12](#_Toc132903173)

[3.7.1. Description 12](#_Toc132903174)

[3.7.2. Functional Requirements 12](#_Toc132903175)

[3.8. Change or Add Regulations 13](#_Toc132903176)

[3.8.1. Description 13](#_Toc132903177)

[3.8.2. Functional Requirements 13](#_Toc132903178)

[4. Data Requirements 15](#_Toc132903179)

[4.1. Logical Data Model 15](#_Toc132903180)

[4.2. Data Dictionary 15](#_Toc132903181)

[4.3. Data Integrity, Retention, and Disposal (\*) 15](#_Toc132903182)

[5. External Interface Requirements 16](#_Toc132903183)

[5.1. User Interfaces 16](#_Toc132903184)

[5.2. Software Interfaces 16](#_Toc132903185)

[5.3. Hardware Interfaces 17](#_Toc132903186)

[5.4. Communications Interfaces 17](#_Toc132903187)

[6. Quality Attributes 18](#_Toc132903188)

[6.1. Usability Requirements 18](#_Toc132903189)

[6.2. Performance Requirements 18](#_Toc132903190)

[6.3. Reliability Requirements 18](#_Toc132903191)

[6.4. Security Requirements 18](#_Toc132903192)

[6.5. Availabilty Requirements 18](#_Toc132903193)

[6.6. Inverse Requirements 18](#_Toc132903194)

# **1. Introduction**

## 1.1. Purpose

This SRS describes the software functional and non-functional requirements for release 1.0 of the National Football League Management (NFLM). This document is intended to be used by the members of the project team who will implement and verify the correct functioning of the system. Unless otherwise stated, all requirements specified here are high priority and committed for release 1.0.

## 1.2. Document Conventions

No special typographical conventions are used in this SRS.

## 1.3. Project Scope

The National Football League Management consists of the following major functions:

* Support manager to create a team profile
* Scheduling matches for the tournament
* Recording match result
* Support user to lookup for player
* Support manager to create a tournament report
* Manager can add or edit regulations

## 1.4. References

* SRS template by Jacksonville State University
* SMS-SRS by team from previous course

# **2. Overall Description**

The product described in this document is a software for national football league management.

## 2.1. Product Perspective

Diagram

Description automatically generated

Figure 1. NFLM Use-Case Diagram

The National Football League Management system is a system that support manager to manage the tournament more effectively. The context diagram in figure 1 illustrates the external entities and system interfaces for release 1.0. The system is expected to evolve over several releases.

## 2.2. User Classes and Characteristics

|  |  |
| --- | --- |
| Manager | The Manager is a tournament employee who assist team to create there profile and making report everytime the tournament is over, record match result,… |
| User | User can view all the tournament information like match result, match schedule, team profile and player profile,… |

## 2.3. Operating Environment

|  |  |
| --- | --- |
| OE-1: | The NFLM shall operate correctly with any operating system from Windows, MacOS, Linux that supported Python |
| OE-2: | The NFLM shall permit user access from the cooperate Intranet, from a VPN Internet connection |

## 2.4. Design and Implementation Constraints

|  |  |
| --- | --- |
| CO-1: | The system’s design, code, and maintenance documentation shall conform to the NFLM SDD |
| CO-2: | The system shall use the Microsoft SQL database management system, Python 3.10 |

## 2.5. Assumptions and Dependencies (\*)

# **3. System Features**

## 3.1. Create User Account

### 3.1.1. Description

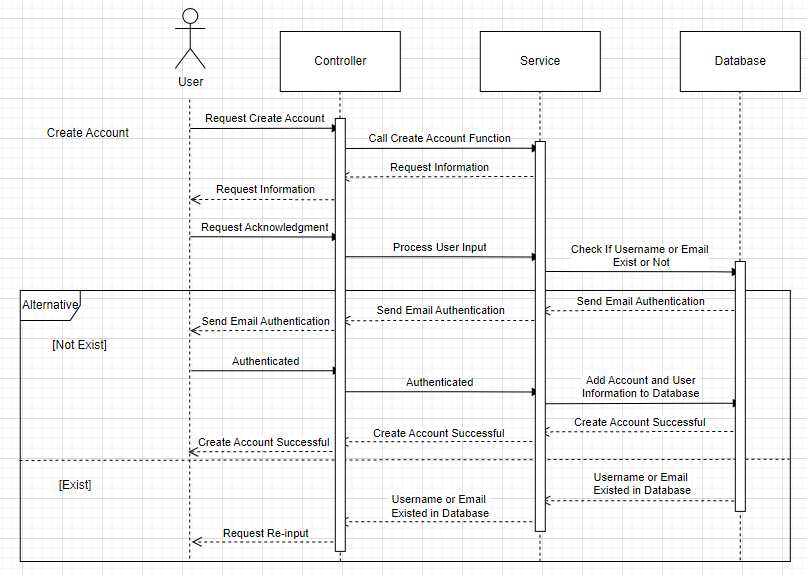


Figure 2. Create Account Sequence Diagram

User need to create an account to grant access to NFLM system. If the User is an Manager, he will grant a account from system with **Priority=High**, else he will create an account on his own with his personal information and receive mail authentication from system

### 3.1.2. Functional Requirements

*Request for create account*

*Introduction*

•The NFLM asks for User’s username, password and email to create an account for User.

*Inputs*

•User’s username

•User’s password

•User’s email

•User’s personal information (optional)

*Processing*

•The NFLM checks for the combination from the data in the Database and add User’s account to database.

## 3.2. Sign-in

### 3.2.1. Description

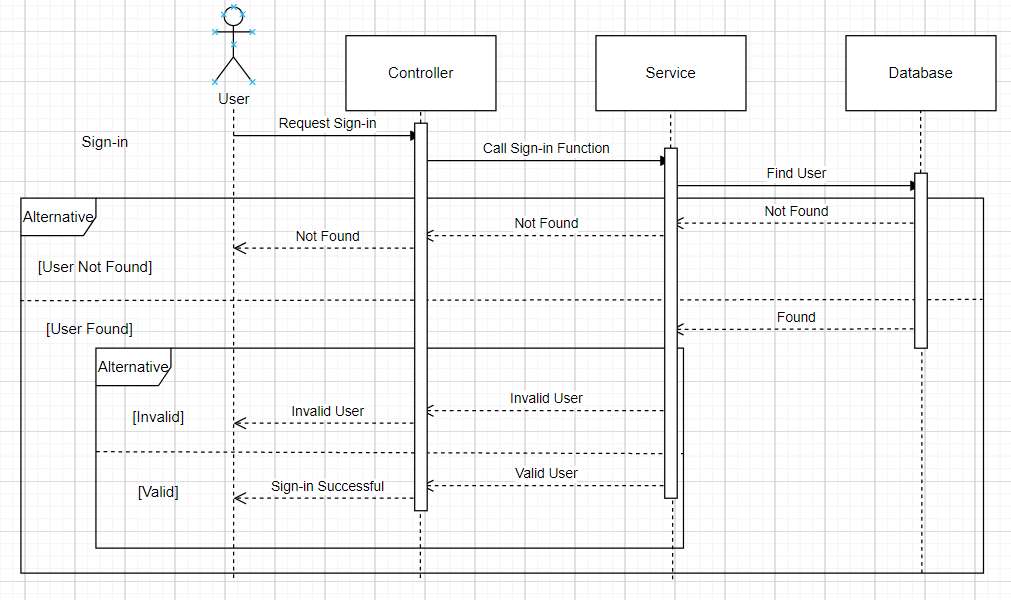


Figure 3. Log-in Sequence Diagram

Any User who has an account can have access to the NFLM system. If the User is a Casual User, he can view information about league, team, match schedule and player. If the User is an Manager, he can make reports and manage related data. **Priority = High.**

### 3.2.2. Functional Requirements

*Request for signing in*

*Introduction*

•The NFLM asks for User’s username and password and asks for its verification via the Database.

*Inputs*

•User’s username

•User’s password

*Processing*

•The NFLM checks for the combination from the data in the Database.

## 3.3. Create Team Profile

### 3.3.1. Description

Calendar

Description automatically generated

Figure 4. Create Team Profile Sequence Diagram

Any User can view team profile. If the User is a Manager, he can create team profile with team information provided.

### 3.3.2. Functional Requirements

*Request for create team profile*

*Introduction*

•The NFLM asks for Team’s information and asks for its verification via the Database.

*Inputs*

•Team’s player information

•Team’s name

•Team’s club

*Processing*

•The NFLM checks for the combination from the data in the Database.

## 3.4. Scheduling Match

### 3.4.1. Description

Calendar

Description automatically generated

Figure 5. Scheduling Match Sequence Diagram

Any User can view match schedule. If the User is a Manager, he can scheduling match with the information provided.

### 3.4.2. Functional Requirements

*Request for scheduling match*

*Introduction*

•The NFLM asks for Match’s information and asks for its verification via the Database.

*Inputs*

•Round of match

•Team 1

•Team 2

•Time

•Stadium

*Processing*

•The NFLM checks for the combination from the data in the Database.

## 3.5. Record Match Result

### 3.5.1. Description

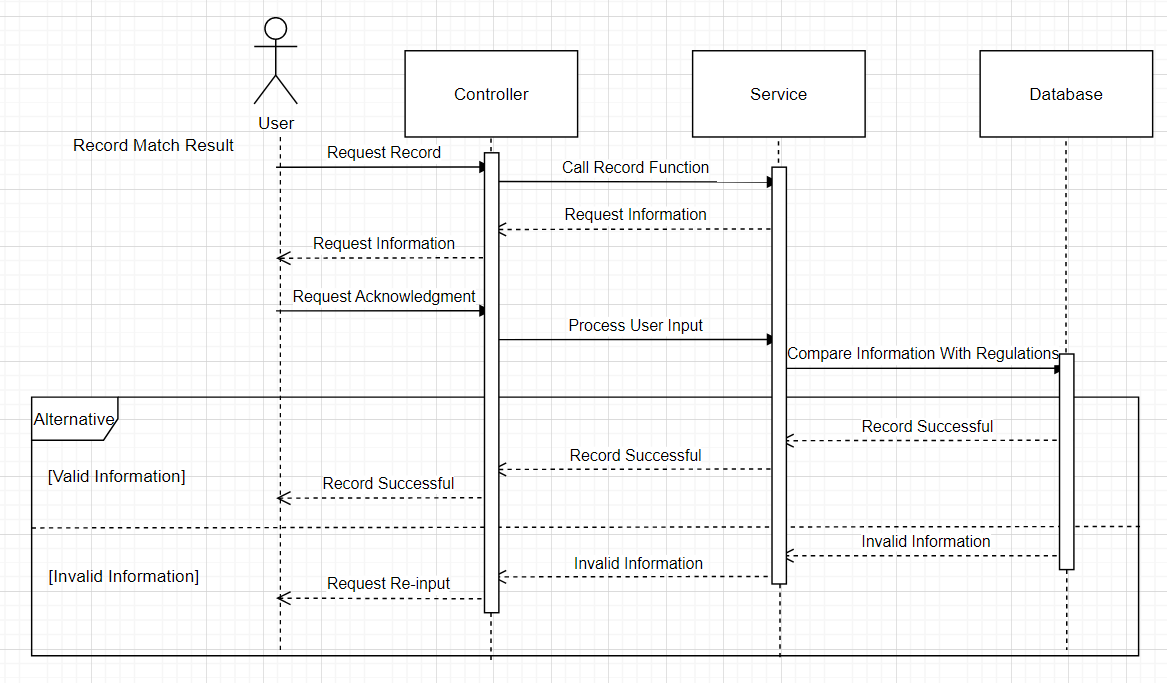


Figure 6. Record Match Result Sequence Diagram

Any User can view match result. If the User is a Manager, he can record match result with the information provided.

### 3.5.2. Functional Requirements

*Request for scheduling match*

*Introduction*

•The NFLM asks for Match Result’s information and asks for its verification via the Database.

*Inputs*

•Team 1

•Team 2

•Time

•Stadium

•Score

•Scorers

*Processing*

•The NFLM checks for the combination from the data in the Database.

## 3.6. Player Lookup

### 3.6.1. Description

Calendar

Description automatically generated

Figure 7. Player Lookup Sequence Diagram

Any User can lookup for players.

### 3.6.2. Functional Requirements

*Request for player lookup*

*Introduction*

•The NFLM asks for Player’s information and lookup for player in database.

*Inputs*

•Player’s name

•Player’s team

*Processing*

•The NFLM lookup player from the data in the Database.

## 3.7. Create Tournament Report

### 3.7.1. Description

A picture containing chart

Description automatically generated

Figure 8. Create Tournament Report Sequence Diagram

Any User can view tournament report. If the User is a Manager, he can create tournament report with the information provided.

### 3.7.2. Functional Requirements

*Request for create tournament report*

*Introduction*

•The NFLM create leaderboard and scorers list.

*Processing*

•The NFLM lookup for teams and scorers from the data in the Database and create leaderboard and scorers list.

## 3.8. Change or Add Regulations

### 3.8.1. Description

Diagram, table

Description automatically generated

Figure 9. Change or Add Regulation Sequence Diagram

Any User can view tournament regulations. If the User is a Manager, he can add or change tournament regulations with the information provided.

### 3.8.2. Functional Requirements

*Request for change or add regulations*

*Introduction*

•The NFLM asks for Regulation’s information.

*Inputs*

•Regulation’s information

*Processing*

•The NFLM change or add regulation to the Database.

# **4. Data Requirements**

## 4.1. Logical Data Model

Diagram

Description automatically generated

Figure 10. ERD

All the data is saved in the database:

* Player information
* User information
* Team information
* Match information
* Stadium information
* Tournament information
* Referee information
* Coach information

The database allows concurrent access by various employees and is kept consistent at all the times requiring a good database design.

## 4.2. Data Dictionary

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Data Element | Description | Composition or Data Type | Length | Values |
| Username | Username of the User account | string | 20 |  |
| Password | Password of User account | string | max |  |
| Email | Email of User | string | 100 |  |
| Player ID | ID of player | string | 20 |  |
| Player Name | Name of player | string | 20 |  |
| Player Country | Country of player | string | 20 |  |
| Player Phone Number | Phone number of player | string | 20 |  |
| Player Email | Email of player | string | 20 |  |
| Team ID | ID of team | string | 20 |  |
| Team Name | Name of team | string | 20 |  |
| Team Country | Country of team | string | 20 |  |
| Team Sponsor | Sponsor of team | string | 20 |  |
| Fan ID | ID of fan | string | 20 |  |
| Fan Name | Name of fan | string | 20 |  |
| Fan Phone Number | Phone Number of fan | string | 20 |  |
| Fan Email | Email of fan | string | 20 |  |
| Fan Country | Country of fan | string | 20 |  |
| Coach ID | ID of coach | string | 20 |  |
| Coach Name | Name of coach | string | 20 |  |
| Coach Phone Number | Phone number of coach | string | 20 |  |
| Coach Email | Email of coach | string | 20 |  |
| Coach Country | Country of coach | string | 20 |  |
| Referee ID | ID of referee | string | 20 |  |
| Referee Name | Name of referee | string | 20 |  |
| Referee Phone Number | Phone number of referee | string | 20 |  |
| Referee Email | Email of referee | string | 20 |  |
| Referee Country | Country of referee | string | 20 |  |
| Match ID | ID of match | string | 20 |  |
| Day | The day of match | date | 10 |  |
| Result | Result of match | string | 20 |  |
| Tournament ID | ID of tournament | string | 20 |  |
| Total Prize Pool | Prize pool of the tournament | int | 100 |  |
| Stadium ID | ID of tounament | string | 20 |  |
| Stadium Name | Name of tournament | string | 20 |  |
| Stadium Address | Address of tournament | string | 20 |  |

## 4.3. Data Integrity, Retention, and Disposal (\*)

# **5. External Interface Requirements**

## 5.1. User Interfaces

Customer Interface

The NFLM screen displays an interface for the user to choose features for him to review tournament information.

Manager Interface

The NFLM screen displays an interface to communicate with NFLM system.

## 5.2. Software Interfaces

Create Account Interface

The NFLM screen displays an interface for the user to type in their information like username, password and email, personal information to create account.

Sign-in Interface

The NFLM screen displays an interface for the user to sign-in to NFLM system.

Team Profile Interface

The NFLM screen displays an interface for the manager create team profile and an interface for user to choose whatever team profile they want to view.

Scheduling Match Interface

The NFLM screen displays an interface for the manager to scheduling match and an interface for user to view match schedule.

Record Result Interface

The NFLM screen displays an interface for the manager to record match result and an interface for user to view all tournament’s match result.

Player Lookup Interface

The NFLM screen displays an interface for the user to type in information about the player they want to lookup and displays all the player found.

Tournament Report Interface

The NFLM screen displays the leaderboard and scorer list of tournament.

Regulations Interface

The NFLM screen displays an interface for the user to view all the current regulations of the tournament and an interface for the manager to add or change regulation.

## 5.3. Hardware Interfaces

No hardware interfaces have been identified.

## 5.4. Communications Interfaces

|  |  |
| --- | --- |
| CI-1 | The NFLM shall send an email to the User to confirm his register request. |

# **6. Quality Attributes**

## 6.1. Usability Requirements

|  |  |
| --- | --- |
| USE-1 | The NFLM shall allow an User to view tournament information with a single interaction. |
| USE-2 | 95% of new Users shall be able to successfully view information without errors on their first try. |

## 6.2. Performance Requirements

High level of performance requires high speed network and high level of connectivity.

## 6.3. Reliability Requirements

The available server must be reliable and the network connectivity in the supermarket should be proper for smooth flow of all operations and data.

## 6.4. Security Requirements

|  |  |
| --- | --- |
| SEC-1 | Every user of the software is provided a unique login username and a password which is stored in the Microsoft SQL database. |
| SEC-2 | Users shall be required to log on to the NFLM for all operations. |
| SEC-3 | Only authorized Managers shall be permitted to work with the system. |
| SEC-4 | The system shall permit Users to view only what they choose to view. |

## 6.5. Availabilty Requirements

The software is available for use all the time the tournament is still available.

## 6.6. Inverse Requirements

|  |  |
| --- | --- |
| INV-1 | The software does not allow the team with not enough player to play in the tournament. |
| INV-2 | The software does not allow any other person except the managers to change the system information. |