



## **Module Code & Module Title**

CS6PO5 Final Year Project
Digital ANFA

## **Assessment Type**

Interim Report

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## 1. Introduction

## 1.1. Introduction to Topic

Information Technology(IT) plays a vital role in the development of various sports. The field information technology is a key associative partner to upgrade the sports. Sports Statistics, Bio-Chemistry, Sports Medicine, etc. are some of the branches of sports. education. With the guidance of the Information Technology, it has created scientific discipline, enhance coaching and learning, research activities, etc. which have helped the sports organization of various sports to stay away from the mistake at higher or level. Information Technology helps the football in many ways. It has helped to get to know the health status of players as well as to prepare training schedule. It is a good means of technology to store the results of the competition as well as it is being used to make online registration of players for different competition. By the means of information, it makes easier to store the fitness status of the athletics which will help the coach to keep track of player's health. It is also one of the good way to Keep Personal Detail of the athletics (KA, 2019).

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## 1.2. Current Scenario

In 21<sup>st</sup> Century, technology haven been growing in fast speed in order to help every lives of world. It is sure to happen that the field Information Technology will take the world of sports to the next level. In the world football, various football championship has been organized during the championship technology has made centre attention. Many Giant Companies has been working on building different gadgets in order to improve teams during preparation. The following are some of the Information Technologies that has been used during football competition.

## 1.2.1. Wireless Communication System for referees

During football competition, it is important to have communication between referees, assistant referees, 4<sup>th</sup> official for making decision and to efficient manage the games. In order to help the referees to make communication easier, a new wireless communication system has been developed to make effective and secure communication (MakoLab Blog, 2018). Vokkero Wireless Communication System has been build and currently used by the referees in football competition for clear communication. Vokkero Wireless Communication System is used by 98% Football Federation of the world. Squadra Referee Audio is one of the most popular and most used Communication System during big competition like World Cup, Champions League, Euro Cup, Asian Cup and so on from the past 13 years (Vokkero, 2019). This technology has been officially approved by FIFA.

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## 1.2.2. Electronic Performance and Tracking System

In order to improve the performance of the athletes. Electronic Performance and Tracking System helps a football club to make responsive decision. The tracking system helps to control and improve the performance of individual and team. EPTS is used to keep record of ball as well as player's position, it is also use to keep track of heart rate. These system helps the manager to select the deserved player for the match. Similarly, it will help the coach get detailed information of team performance which the coach can use to improve the performance. PlayerTrek is an technology that is used by the footballers and teams in order to get electronic performance and to keep track (MakoLab Blog, 2018). PlayerTrek is an GPS player tracking device which is used to inspect and improve the performance of the team. It is use to keep track of player with GPS sports vests in order to help coach to make wise decision using statistics in order to improve the performance of individual athletics and team (PlayerTrek, 2019). This technology has been officially approved by FIFA.

## 1.2.3. VAR (Video Assistant Referee)

Video Assistant Referee is a technology which is use to analyse the decision made by the chief referee via means of videos. During 2018, the VAR technology was officially launched in by International Football Association (IFAB) in Game Law. It been used in many national leagues like Premier League, Serial A, La Liga, and so on. Similarly, it was also used in World Cup 2018 which was held in Russia. This technology was introduced in World Cup 2018. The team of VAR technology uses 33 television cameras to analyse the game. This technology is used to check the goal scored, penalties, red cards, errors made by referees during the game (MakoLab Blog, 2018). VAR Technology was approved during 132nd Annual General Meeting of IFAB on 2018. FIFA has made some steps compulsory to use VAR in competition. Video Operation Room(VOR), camera and location feed, needed equipment's, recording and provision of feeds to the match broadcaster, requirement of virtual offside lines, RRA(Referee Review Area) and referee communication system (FIFA.com, 2019). It is a technology officially approve by FIFA.

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## 1.2.4. Sports Statistics Application

Sports Application are the second fastest growing app in world. Sports Apps are used has been increase by 43% during 2016. Sports Statistics Application is one of the important tools to promote venue, events, sports teams, organization and competition. It's a good way to make a strong community in sports and can be used to strengthen the brand image. In the app store, there are two kind of sports statistics application one for all sports and one that simply focuses on one sports or one sports team. ESPN, Forza Football, NBA App, etc. are some of the sports application (Aleksandrova, 2018).

In the context of Nepal, Wireless Communication System for referees and Electronic Performance and Tracking System are only being used. Similarly, the technology like VAR (Video Assistant Referee) and Sports Statistics Application are not being implemented in Nepalese Football.

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## 1.3. Problem Domain

ANFA (All Nepal Football Association) is the Football Association of Nepal. ANFA has been organizing various tournaments for the development of football and its activities. These tournaments consist of A Division League, B Division League, C Division League, National League, etc. (ANFA, 2019). Martyr's Memorial A-Division League is a popular tournament that Football Association organise. In the context of our country, there are several such websites performing their functions in a regular manner, but these websites have not to stand to the expectations of Nepalese Football Fans. In the course of organizing these various tournaments, the Football Association has been facing a lot of problems.

The following are the problems:

- i. ANFA does not have any trustworthy medium through which people can get result or information about matches or tournaments,
- ii. In most of the case, users must look deeply at the website in order to get detail about the tournament which may be a hassle for the users.
- iii. Similarly, the fans are not able to get information about the match fixtures, result, and table of the competition.

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## 1.4. Scope

This project will help the ANFA (All Nepal Football Association) to provide Statistics and other Information of Qatar Airways A Division league for its fans via mobile platform.

## 1.5. Aims and Objectives

#### 1.5.1. Aims

The main aim of this project is to build a football statistics mobile application for the Football Association which displays the information about the Qatar Memorial A Division League organized by the FA where data are updated by the admin or the editor in website.

## 1.5.2. Objectives

The following are the objectives of the projects:

- i. To develop a user-friendly and simple website and mobile application
- ii. To make a deep research on various sources such as books, journal, reports, the whitepaper, etc. in order to complete the project on time.
- iii. To develop mobile application and website.
- iv. To fulfil all the requirement of the client.
- v. To select and use proper tools for developing the project.
- vi. To handle the testing of the project.
- vii. To provide proper document and user documentation about the project to the client.

viii. To develop an error-free mobile application and website

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## 2. Background

## 2.1. Project Elaboration

Representing ANFA is an efficient way of depicting it in a digital spectrum. Digital ANFA is a final year project proposal. Digital ANFA is the project to develop a Football Application for the Football Association of Nepal. Football is a worldwide popular game. It is popular and played across Europe, Asia, South America and all most every part of the world. There are various tournaments organized in a different part of the world. Football being a worldwide play, it has millions of fans and everyone is not possible to visit a stadium in every game. In order to provide football news there are many numbers of applications and websites like goal.com, All Football, ESPN, Be Soccer and many more (Hindy, 2019). These applications and websites provide information regarding different matches and tournaments such as Premier League, La Liga, Serial A, Bundesliga, Ligue 1, Major League Soccer and so on (V, 2019). This project will be providing Statistics and other Information of Qatar Airways A Division league for its fans via mobile platform

## 2.2. Terms/Definition

The following are the terms that will be used in Project:

Terms	Definition
ANFA	All Nepal Football Association
FA	Football Association
FIFA	Federation Internationale de Football Association
AFC	Asian Football Federation
VAR	Video Assistant Technology

Table 1 Table of Terms and Definition

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## 2.3. System Architecture

The following diagram represents the system architecture of the project:

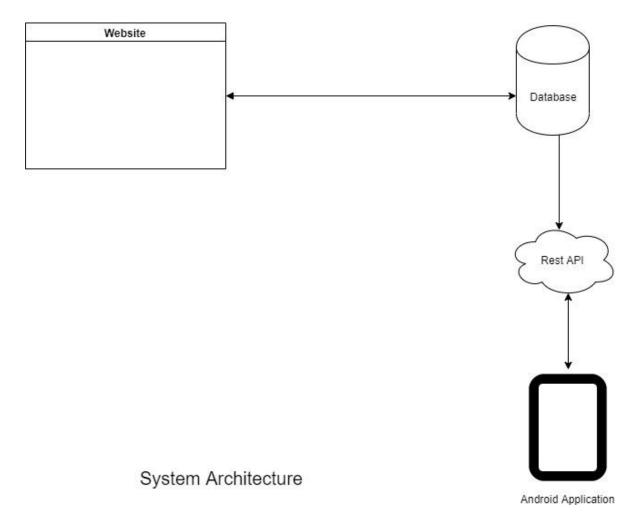


Figure 1 System Architecture of Digital ANFA

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## 2.4. Feature

## 2.4.1. For Web (Admin/Editor)

- Admin
  - User
- Username
- First Name
- Last Name
- Email
- User Password
- Actions:
  - Add the Editor
  - Update the Editor detail
  - Delete the Editor (if required)
- Admin and Editor
  - News Feeds
    - News Title
    - News Type
    - News Description
    - News Image
    - Date
    - Actions:
      - Add the News
      - Update the News
      - Delete the News (if required)
  - Club Detail
    - Club Name
    - Club Description
    - Club Founded Date
    - Club Address
    - Club Email
    - Club Division
    - Club Affiliation
    - Home Jersey Colour

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- Away Jersey Colour
- Club Sponsor
- Kit Sponsor
- Club Logo
- Actions:
  - Adds the Club details
  - Update/Edit the Club details
  - Delete the Club detail (if required)

## Player Detail

- First Name
- Last Name
- Date of Birth
- Place of Birth
- Gender
- Position
- Country
- Image
- Club Id
- Status (active/inactive)
- Actions:
  - Adds the Player details
  - Update/Edit the Players details
  - Delete the Player details (if required)

### Tournaments

- Tournament Id
- Tournament Name
- Tournament Type
- Season
- Title Sponsor

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- Organizers
- Actions:
- Adds the tournaments detail
- Edit/Update the tournaments detail
- Delete the tournaments detail

### Fixtures/Match

- Club 1
- Club 2
- Date
- Kick Off Time
- Venue
- Club 1 Score
- Club 2 Score
- Club 1 Result
- Club 2 Result
- Status (Played/Not Yet Played)
- Actions:
- Adds the match/fixtures detail
- Edit/Update the fixture detail
- Delete the fixture detail

### Statistics

- Highest Scorer
  - o Player Id
  - o Player First Name
  - o Player Last Name
  - o Club
  - o Total Goals
- Red Card
  - o ld
  - Player Name

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- o Club
- o Total Cards
- Yellow Card
  - $\circ$  Id
  - o Player Name
  - o Club
  - o Total Cards
- Clean Sheets
  - o Id
  - o Player Name
  - o Club
  - o Total Number of Clean Sheets
- Actions:
  - Adds the Statistics detail
  - Edit/Update the Statistics Detail
  - Delete the Statistics Detail

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## 2.4.2. For Mobile Application (User)

- News Feeds
  - News Title
  - News Description
  - News Type
  - News Image
  - Date
  - Actions:
    - Views the news feeds
- Club Detail
  - Club Name
  - Club Description
  - Club Logo
  - Club Address
  - Club Email
  - Club Telephone
  - Club Affiliation
  - Actions:
    - Views the Club Detail
- Player Detail
- Player Name
- Date of Birth
- Place of Birth
- Position
- Jersey No
- Nationality
- Image
- Club Id
- Status (activate/deactivate)
- Actions:
  - Views the Player Detail

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- Fixtures
  - Club 1
  - Club 2
  - Date
  - Time
  - Venue
  - Result
  - Actions:
- Views the Fixtures
- Statistics
  - Views Points Table
  - Highest Scorer
    - $\circ$  Id
    - o Player Name
    - o Club
    - o Total Goals
  - Red Card
    - o Id
    - o Player Name
    - o Club
    - o Total Cards
    - Yellow Card
      - $\circ$  Id
      - Player Name
      - o Club
      - o Total Cards
    - Actions:
      - Views the Statistics

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## 2.5. Wireframe

## 2.5.1. Wire Frame of Website



Figure 2 Login

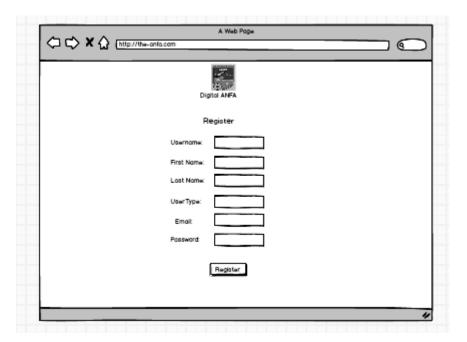


Figure 3 Register

### For Admin

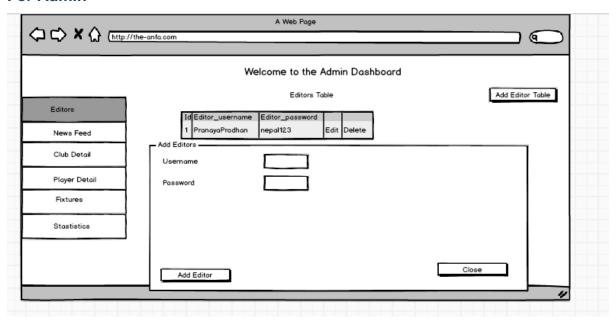


Figure 4 Admin Dashboard to Add Editors



Figure 5 Admin Dashboard for News Feed

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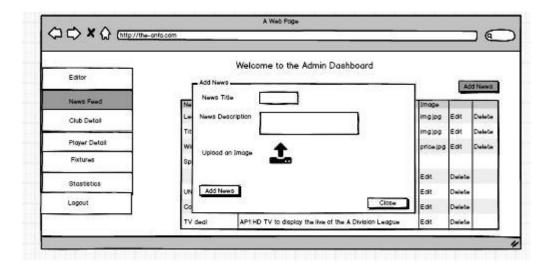


Figure 6 Admin Dashboard to Add News in News Table

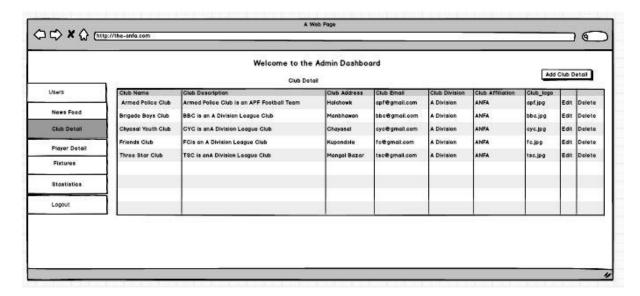


Figure 7 Admin Dashboard for Club Detail

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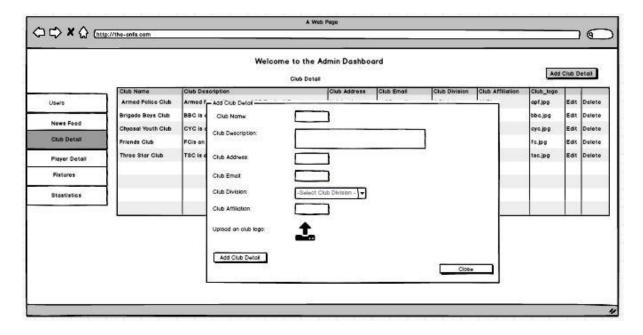


Figure 8 Admin Dashboard to Add Club Detail

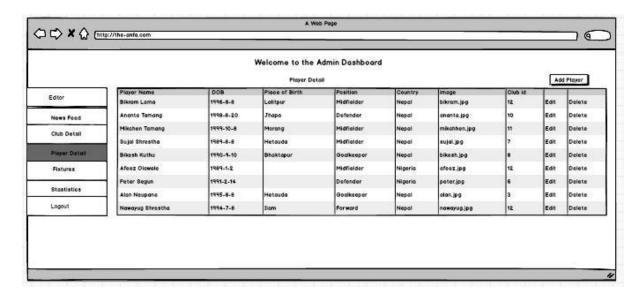


Figure 9 Admin Dashboard for Player Profile

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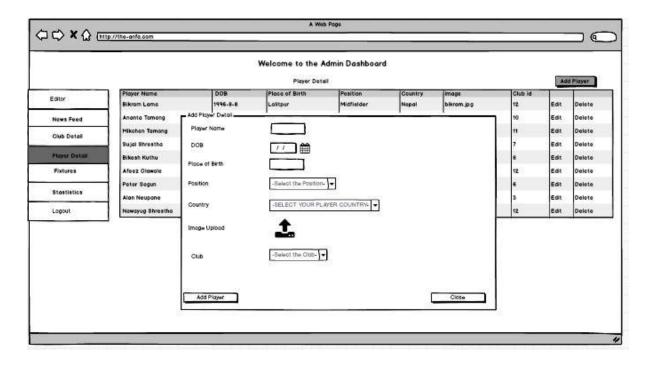


Figure 10 Admin Dashboard to Add Player Detail

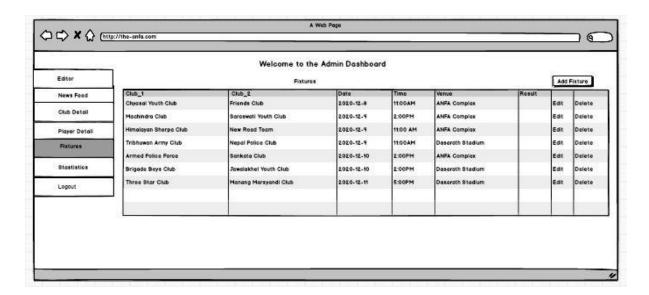


Figure 11 Admin Dashboard for Fixtures

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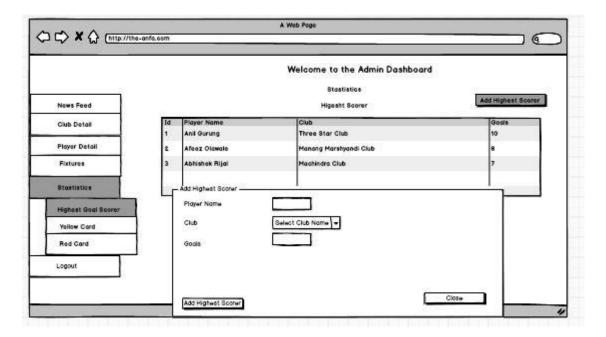


Figure 12 Admin Dashboard to Add Highest Scorer



Figure 13 Admin Dashboard to Add Red Card

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Figure 14 Admin Dashboard to Add Yellow Card

### **For Editor**



Figure 15 Editor Dashboard for News Feed

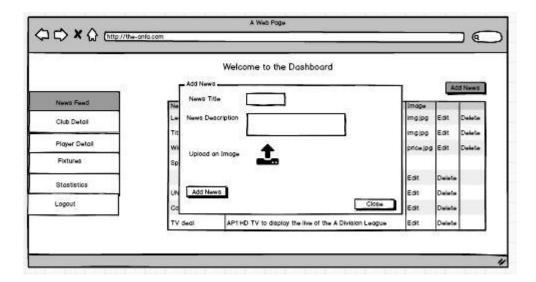


Figure 16 Editor Dashboard to Add News in News Feed Table

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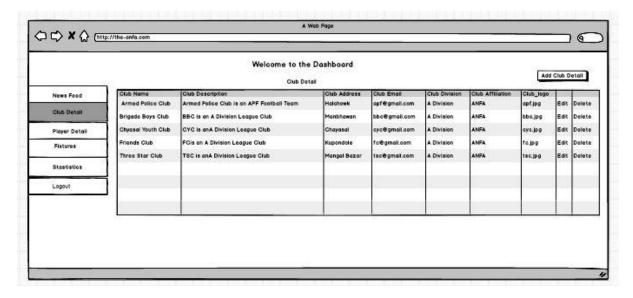


Figure 17 Editor Dashboard for Club Detail

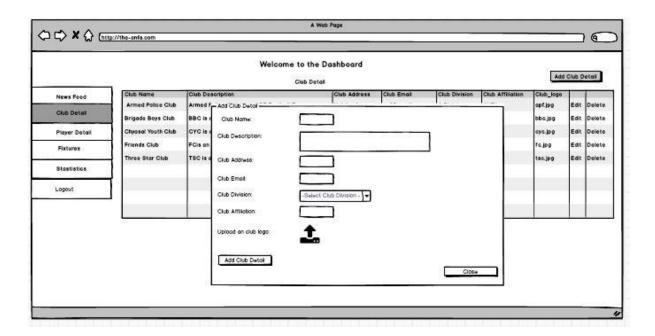


Figure 18 Editor Dashboard to Add Club Detail

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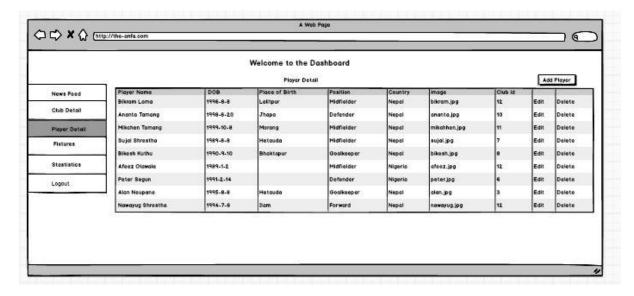


Figure 19 Editor Dashboard for Player Detail

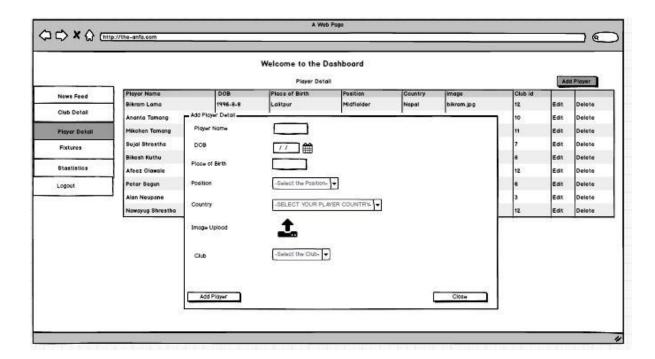


Figure 20 Editor Dashboard to add Player Detail

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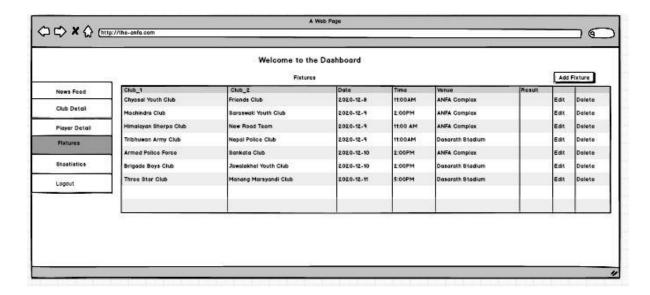


Figure 21 Editor Dashboard for Fixtures

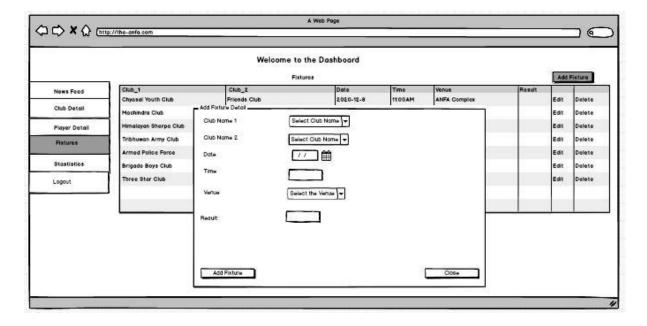


Figure 22 Editor Dashboard to Add Fixtures

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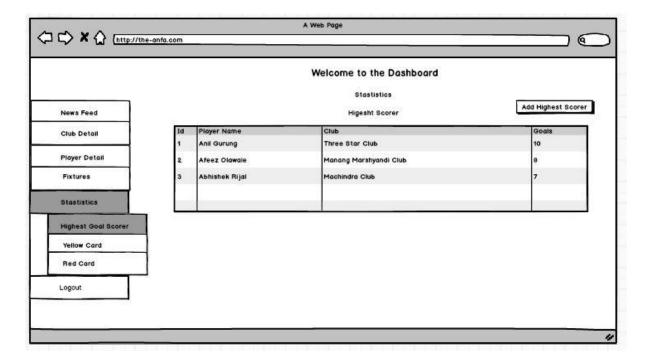


Figure 23 Editor Dashboard for Highest Scorer

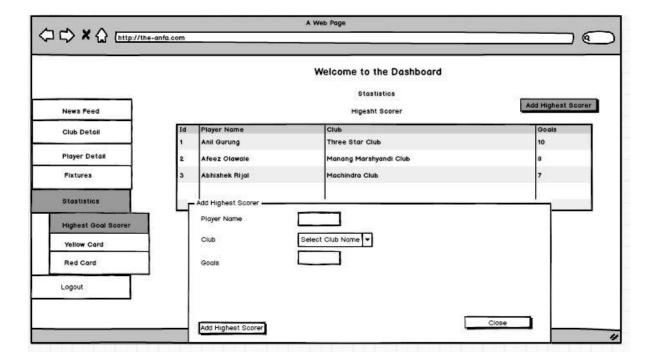


Figure 24 Editor Dashboard to Add Highest Scorer

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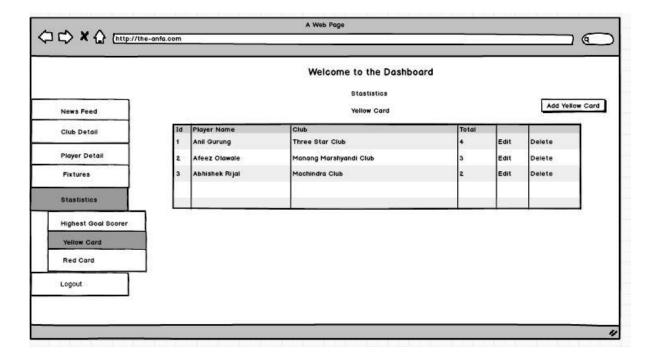


Figure 25 Editor Dashboard for Yellow Card

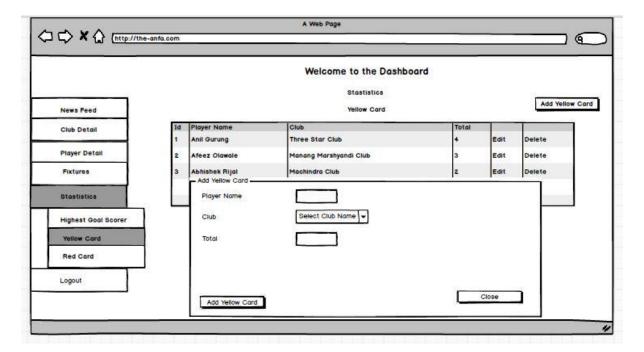


Figure 26 Editor Dashboard to Add Yellow Card

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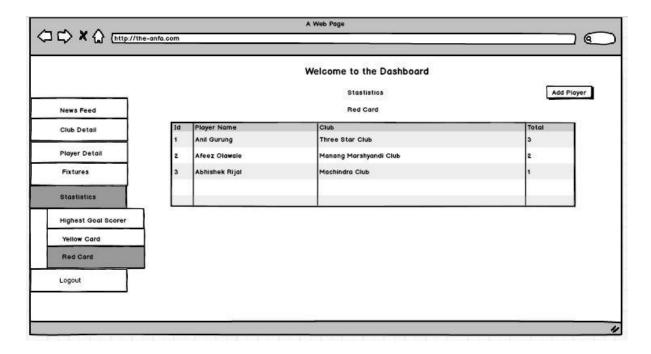


Figure 27 Editor Dashboard for Red Card

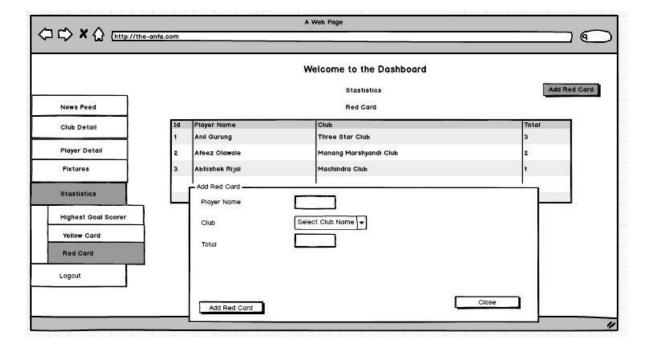


Figure 28 Editor Dashboard to Add Red Card

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## 2.5.2. Wire Frame of Mobile Application

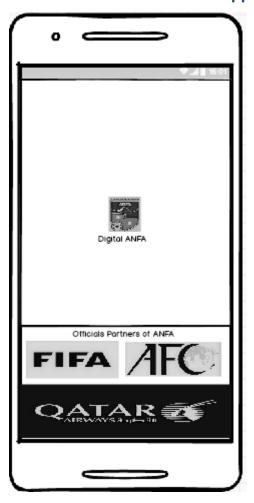


Figure 29 Splash Screen

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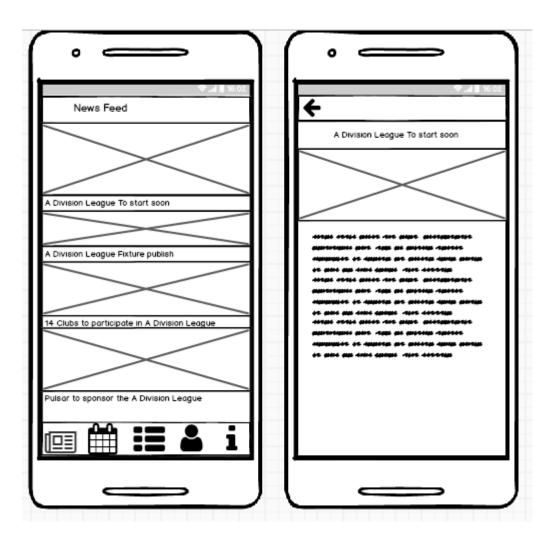


Figure 30 News Feed Section

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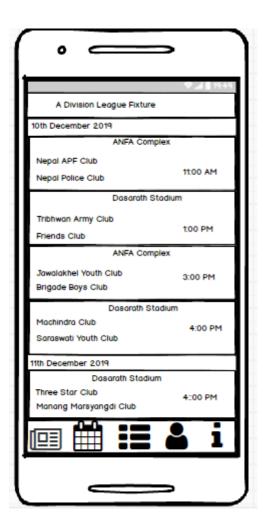


Figure 31 Fixture Section

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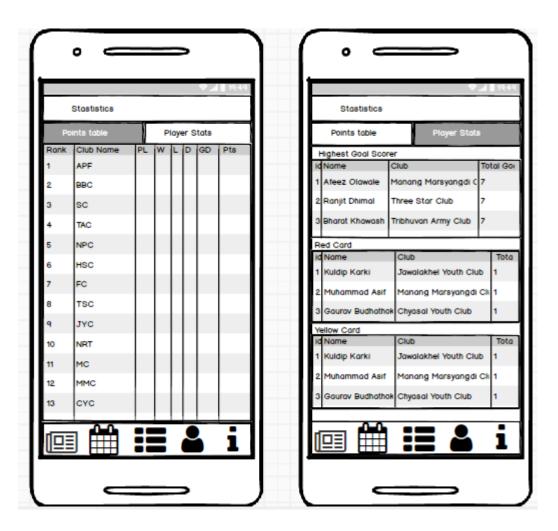


Figure 32 Statistics Section

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Figure 33 Profile Section



Figure 34 About Us Section

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#### 2.6. Use Case

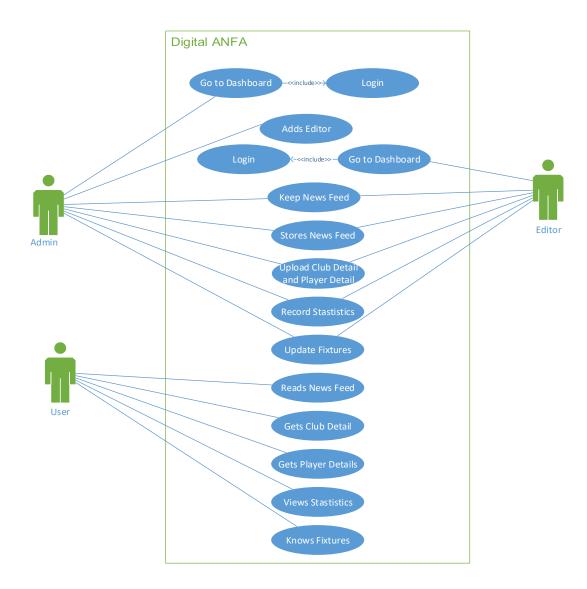


Figure 35 Overall Use Case

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## For Web(Admin/Editor)

### 2.6.1. Use Case of News Feed

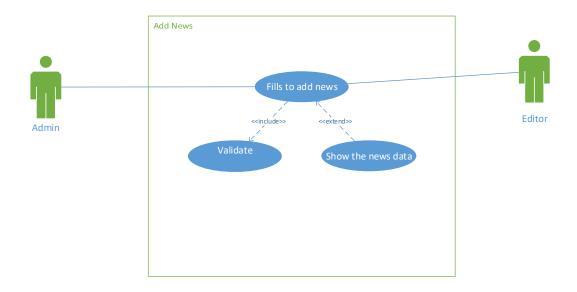


Figure 36 Adds News

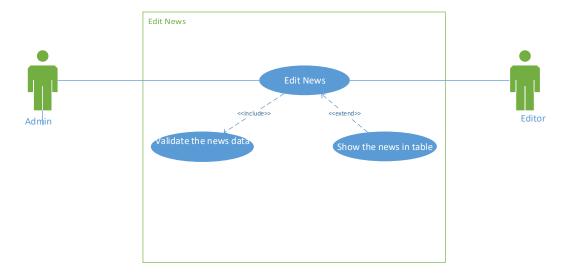


Figure 37 Edit News

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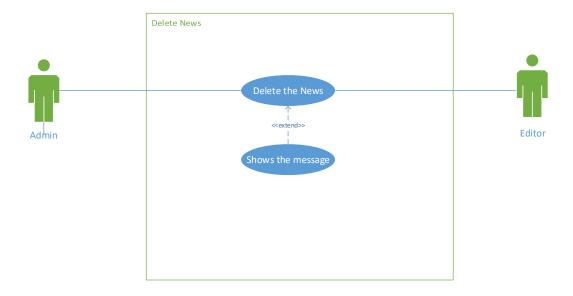


Figure 38 Delete the News

Name:	Keeps News in Feed
Actors:	Editor, Admin
Description:	The actors keep the news in the news feed section. He/she can add, edit and delete the
	news.

Table 2 Keeps News in Feed

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#### 2.6.2. Use Case of Fixtures

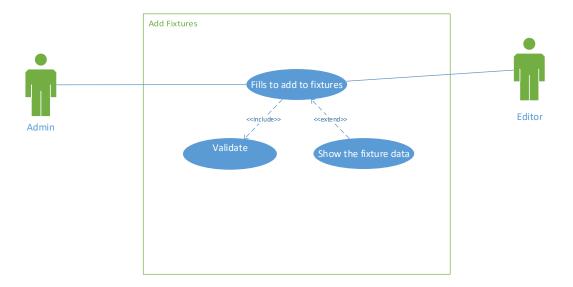


Figure 39 Add Fixtures

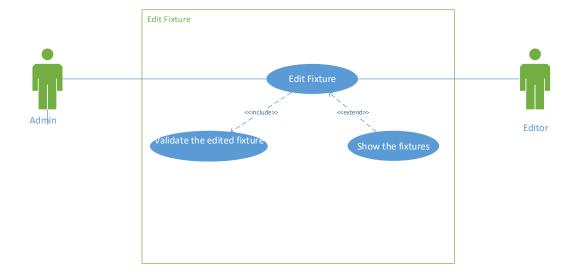


Figure 40 Edit the fixtures

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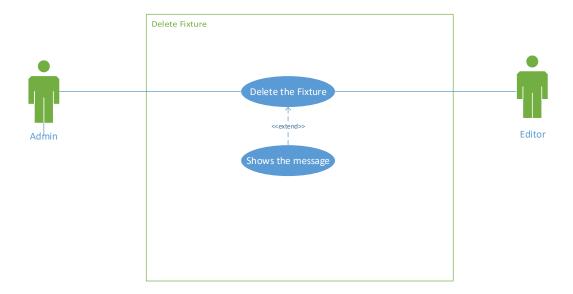


Figure 41 Delete the Fixture

Name:	Update the fixtures	
Actors:	Editor, Admin	
Description:	The actors have permission to update the	
	fixture of the matches.	

Table 3 Update the Fixtures

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#### 2.6.3. Use Case of Club Detail

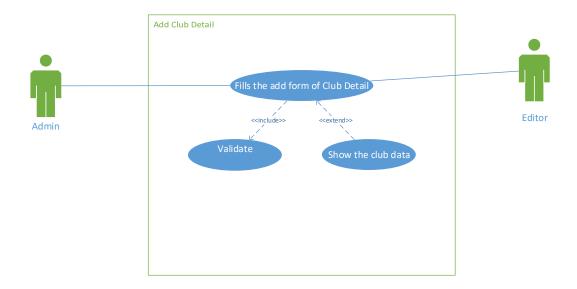


Figure 42 Add Club Detail

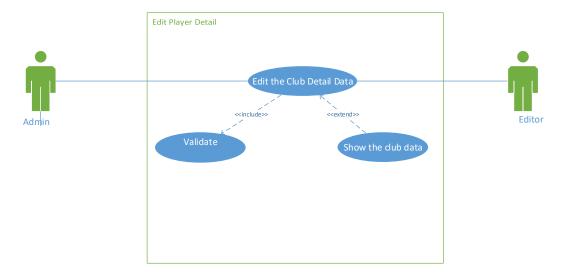


Figure 43 Edit Club Detail

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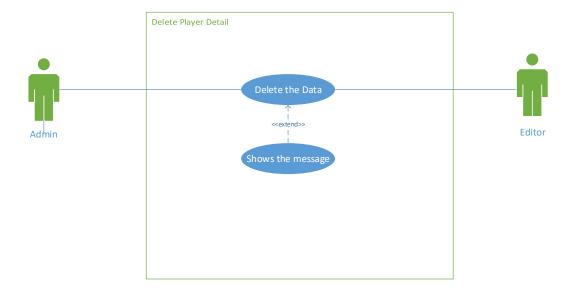


Figure 44 Delete Club Detail

Name:	Upload Club Detail	
Actors:	Editor, Admin	
Description:	The actors have right to upload the club detail. Similarly, he/she can edit as well delete the detail if require.	

Table 4 Upload Club Detail

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## 2.6.4. Use Case of Player Detail

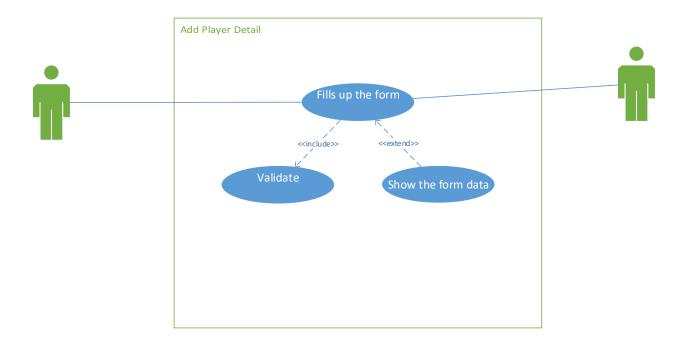


Figure 45 Use Case of Add Player Detail

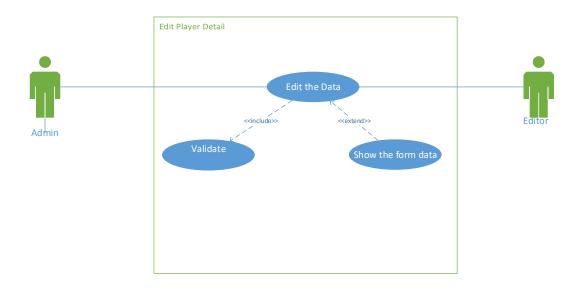


Figure 42 Use Case of Edit Player Detail

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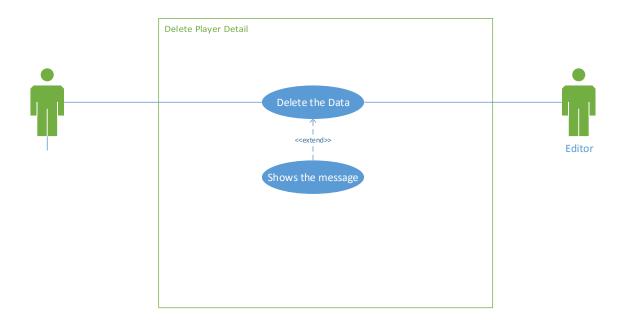


Figure 46 Use Case of Delete Player Detail

Name:	Upload Player Detail	
Actors:	Editor, Admin	
Description:	The actors have right to upload the player detail. Similarly, he/she can edit as well delete the detail if require.	

Table 5 Upload Player Detail

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#### 2.6.5. Use Case of Statistics

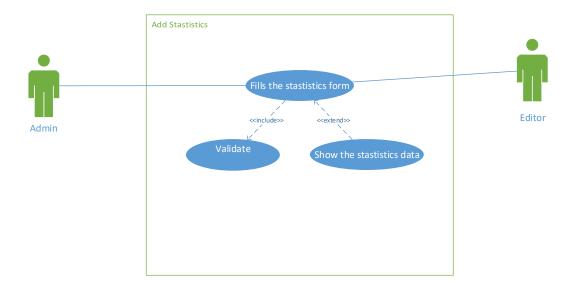


Figure 47 Add Statistics

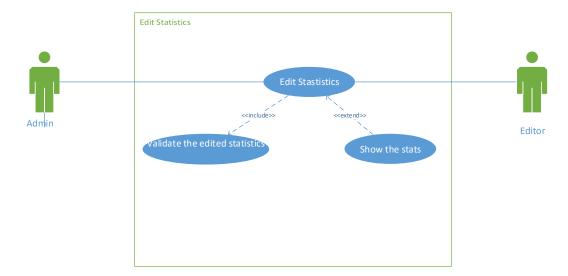


Figure 48 Edit Statistics

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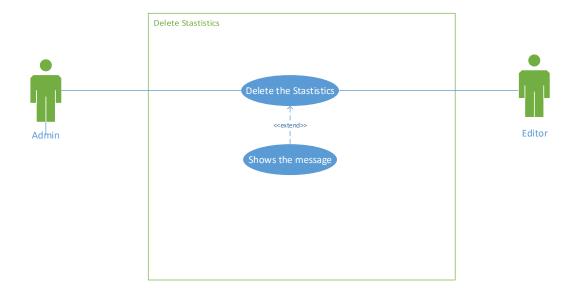


Figure 49 Delete Statistics

Name:	Stores the Statistics
Actors:	Editor, Admin
Description:	The actors have an ability to record the statistics of the matches.

Table 6 Stores the Statistics

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## For Mobile (User)

#### 2.6.7. Use Case of News Feed

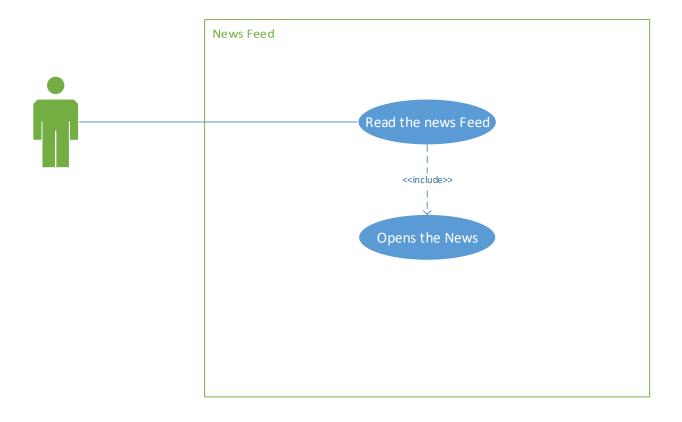


Figure 50 Use Case of News Feed

Name:	Reads the News in Feed
Actors:	User
Description:	The actors view the news tittle and images as well as can read the news.

Table 7 Reads News in Feed

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#### 2.6.8. Use Case of Fixtures

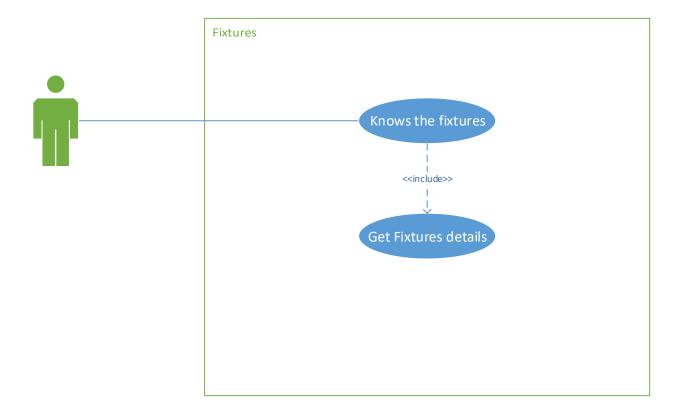


Figure 51 Use Case of Fixtures

Name:	Knows the Fixtures
Actors:	User
Description:	The actors can know the fixture of the match of tournament.

Table 8 Knows the Fixtures

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#### 2.6.9. Use Case of Statistics

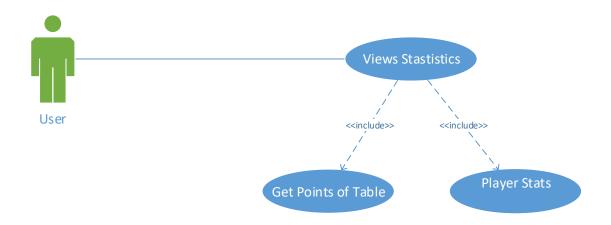


Table 9 Use Case of Views Statistics

Name:	Views Statistics
Actors:	User
Description:	The actors have right to statistics of the
	match.

Table 10 Table of Views Stastistics

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#### 2.6.10. Use Case of Club Profile

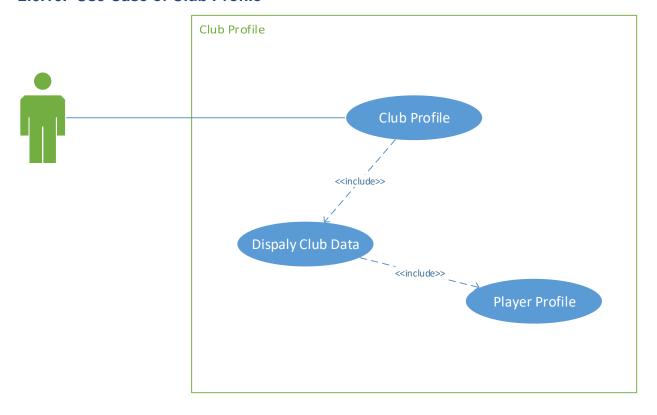


Figure 52 Use Case of Club Profile

Name:	Gets Club and Player Detail
Actors:	User
Description:	The actors gets the detail of the clubs and
	players.

Table 11 Table of Gets Club and Player Detail

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## 2.7. Similar System

#### 2.7.1. FIFA

The official application of FIFA to keep update with football news.

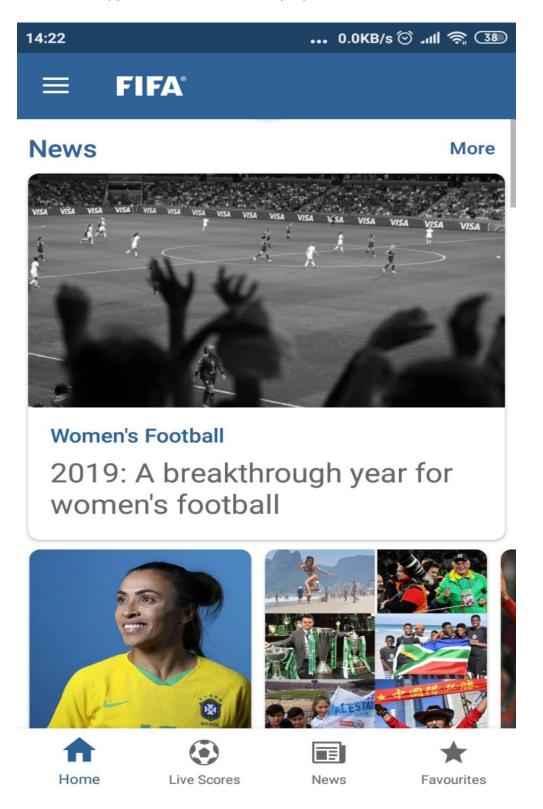


Figure 53 Similar System - FIFA App

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#### 2.7.2. Premier League

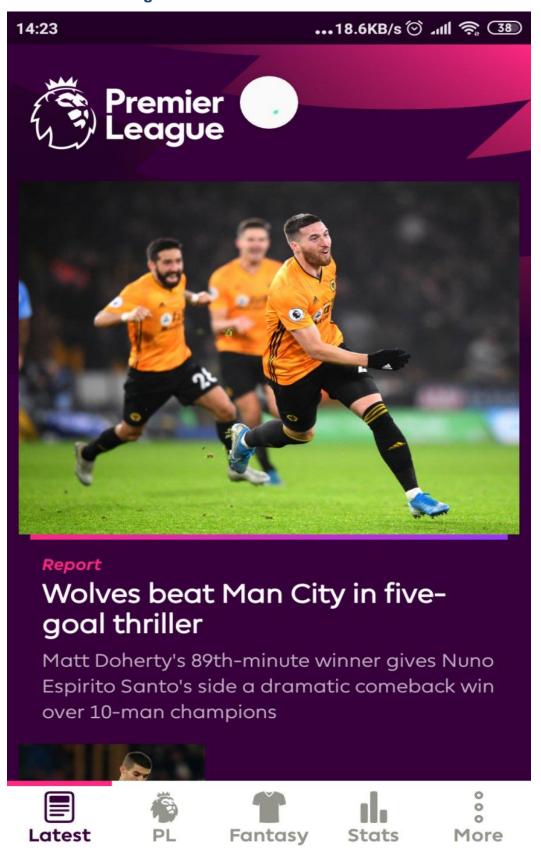


Figure 54 Similar System 2 - Premier League App

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# 2.8. Comparison

Proposed System	FIFA	Premier League	Digital ANFA
Features			
Login/Logout	×	✓	×
Easy Navigation	<b>√</b>	✓	✓
Pretty UI	✓	✓	✓
Shows the Latest	✓	×	✓
News of Nepali			
League			
Fixture ✓	✓	✓	<b>√</b>
Points Table	✓	✓	✓
Profile of Club and	×	✓	✓
Player			
Statistics	<b>√</b>	<b>√</b>	✓

Figure 55 Comparison Table

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#### 2.9 Conclusion

In order to windup, the following given concept of mobile application and website is the proposal to put in front of ANFA as a final year project. The proposed mobile application and website will be designed for ANFA to solve the complications and drawbacks that ANFA has been facing due to unmanaged activities of the digital spectrum, basically regarding the results and information of tournaments and also individual matches. The proposed project will be developing Football Statistics Application of Qatar Airways A Division League. This project initiates a managed football mobile application and website which will ultimately take Nepali football fans to their desired and wanting football application..

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