**Analysis Specification**

**On**

**Football League Management System**



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# Chapter 2. Analysis

# Introduction to Analysis

After completing the proposal the next phase is analyzing the requirement. In analysis phase we understand the project needs and processing needs. We managed all the requirement and sort what are importance. Analysis phase is very essential as it establish the documentation for the final project. Without proper analysis the system won’t be completed as it will always missed what the user really wants and what the user needs.

We need to perform analysis phase to analyze the requirement for the final product and approved the requirement on basis of if it really needed or not. It helps to understand the system, it requirement/features, how the system works, etc. There are different types of analysis they are PEST analysis, SWOT analysis, CATWOE analysis, ethical analysis etc**.**

**PEST analysis:** PEST analysis is used to identify the Political, Economic, Social and Technological factors that can affect the project and its planning process. [(Nishadha Silva, 2016)](#Ethical)

**SWOT analysis:** SWOT analysis is used to understand and identify the Strength, Weakness, Opportunity and Threats of the system

**CATWOE analysis:** CATWOE analysis is a method used for understanding a stakeholder viewpoint and the effect that it will have on the system[. (Business Change Academy, 2017)](#CATWOE) It stands for Customer, Actor, Transformation, Worldview, Owner and Environment

**Ethical analysis:** Ethical analysis is a method to figuring out the correct morale decision in particular situation according to ethical code and morale.[(Fraser Sherman, 2019)](#Ethical)

Analysis phase help us to understand the system and its requirement. We can get information about what the system want by doing survey, questionnaires, interview etc. after completing analysis we get information about what the system should do. It helps in understanding of complex structure it really importance to analyze the system completely before continuing to the next stage. It help in making decision and provide various option to understand the final outcome

* **Benefits of system analysis**

Some benefits of system analysis are as follows:

* It helps to reduce cost
* To helps to make the system more flexible, efficient, reliable etc.
* It helps to identify the risk, prevention and how to solve it
* Better management, controls
* Better quality
* Help in planning of the resources for development

The above are the some benefits of analysis. However analysis provide more benefits to the project but too much analysis can also cause problem. Too much analysis which can be time consuming and expensive. So finding the right balance is key for successful analysis.

Analysis is the beginning stage of waterfall model which help to accomplish a successful system implementation

# Feasibility Study

A feasibility analysis study is used to measure the ability and likelihood to complete the project successfully. It is performed by enterprise when examination whether the given project is possible in different conditions like whether if the enterprise has enough money or if the project will be sold or even if there are enough human resources. There are many types of feasibility study they are as follow:

* **Technical feasibility:** Technical feasibility check whether the enterprise have the technological resources to undertake the project? Does the methods and measures helpful to the project success. The technical resources for finishing my project are Laptop, internet, XAMPP etc.
* **Schedule feasibility:** Schedule feasibility check if the organization have the time resources to undertake the project? Also to check if the project can be accomplished in the given available time.
* **Economic feasibility:** Economic feasibility is also known as cost/benefit analysis. It check it helps in identifying profit against investment expected form the project.
* **Cultural feasibility:** Cultural feasibility study is done to evaluate what the impact of the project on the both local and general culture.
* **Legal/Ethical feasibility:** Legal/Ethical feasibility is a test to determine to check if the given project is ethical, or even legal. The System must not be illegal and affect user morale while using the system.
* **Operational feasibility:** Operational feasibility is a test to check how well the developer can and will be able to solve the problem and take the advantage of opportunities.

# Requirement Analysis

Requirement analysis is the process to determine what the user except from the system. This includes features/requirement which must be quantifiable, applicable/related and detailed.

## Functional Requirements

Functional requirement are those that specific what the system should do. It describe a certain behavior of the function when a particular condition are met. It describe what the system should do the functional requirement describe the behavior of the system as it relates to the system function.

Some of the functional requirement for this project are as follow:

* **User Registration**: It essential to create username for login purpose explain below
* **User Login**: To access more content like comment, posting, asking question etc.
* **Edit/Delete User Profile**: To manage profile, update profile or delete profile.
* **Create League**: To help to manage team, player stats etc.
* **Create Team:** To add new team in their respective league
* **Create** **Player or Staff**: Add Player and Staff information to respective team.
* **Edit League, Team, Player and Staff**: To update, delete information of the following
* **View League or Team details**: To help user to access different league and team information
* **View Player or Staff details**: To help user to accessed different player and staff related to different team and league.
* **Create Stats tables**: To create stats tables to add top scorer, top assist, league table, matches details, scoreboard, etc.
* **Edit or Delete Tables**: To update or delete stats of the certain player, league table standing, scoreboard etc.
* **View Stats table**: To provide information about user favorite league, team, player stats
* **Add News and Updates:** To add news about what happing on football world and update regularly. News relate transfer, retirement, injury etc.
* **View News and Updates:** Allows user to access the news and allows them to comment, post question etc.
* **Create Fixture:** To Create match between different teams in different time zone
* **Manage Fixture:** To edit, delete different matches if there are changes
* **View Fixture:** To allows user to view different teams match dates and times

All information above are explain on coming page of the slide with the help of use case diagram and MoSCoW prioritization.

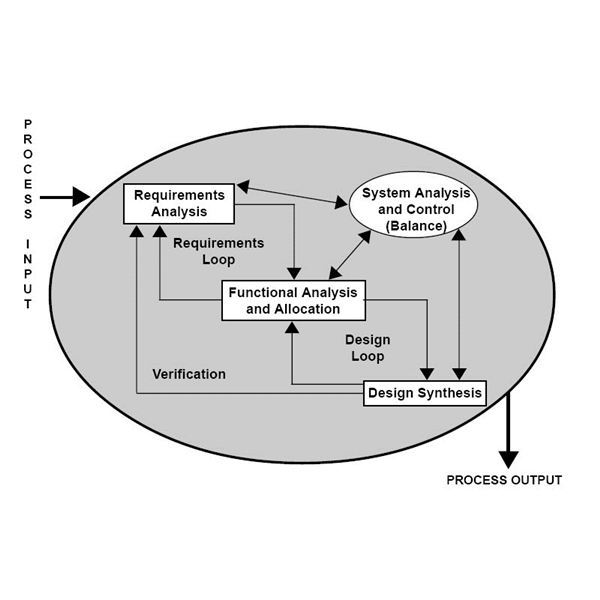


Figure 1 Functional analysis

## Non-Functional Requirements

A Non-functional requirements are those that specify how the system performs a certain function like how the system should behave and what limits are on its functionality. It determine the quality of the system. The non-functionality requirement explains a performance features of the system.

Some of the Non-functional requirement are explain as follows:

* **User** **Friendly**: to make the system easier to use and learn
* **Reliable**: To provide information correctly and faithfully without being bias
* **Verification**: To verify and authenticate user for the system
* **Data** **Integrity**: To verify data being real, accurate before providing to user
* **Efficiency**: To run system smoothly without any major problems like bugs, glitch etc.
* **Availability**: To provide information available to the user daily
* **Capacity**: To make the system having qualities or ability to do things like running website with multiple user at same time etc.
* **Environmental :** Making the system eco-friendly
* **Maintainability:** To be able to effectively patch-up action on given time period
* **Recoverability:** To be able to recover and regained past data
* **Reusability**: To be able to be reused by user at any time as many times
* **Performance:** System need to perform all required task without any problem

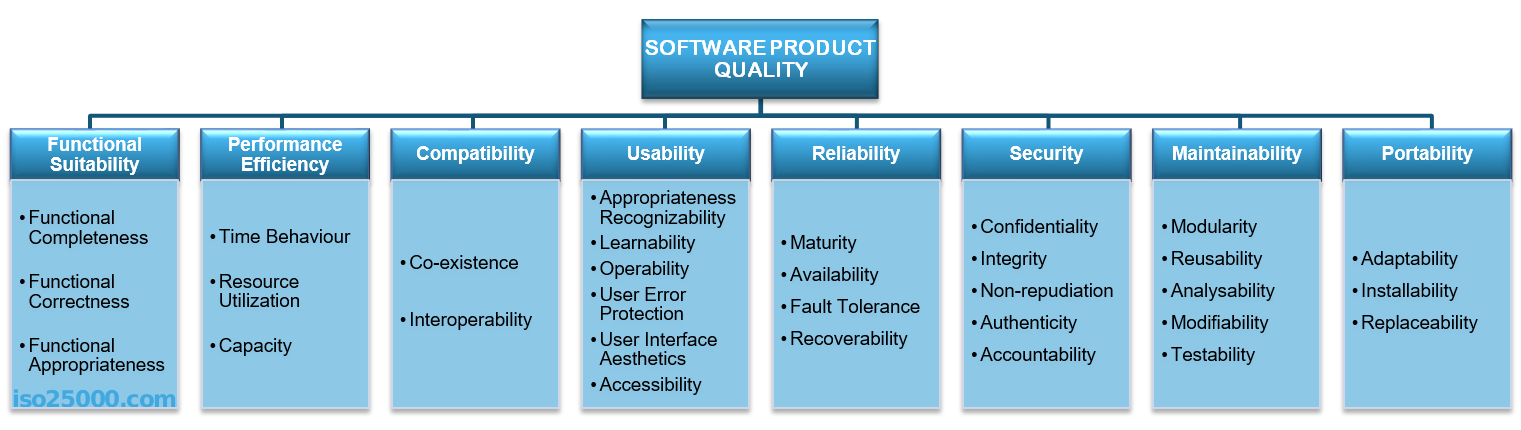


Figure 2 Non-functional Requirement

## MoSCoW Prioritization

A MoSCoW prioritization is a technique for managing requirement. It have four different categories that are: **must-haves, should-have, could-have** and **will not have at this time or Wise.** Here are the list of functional requirement with the help of MoSCoW method



Figure 3 MoSCoW Prioritization

MoSCoW prioritization method is one of the simple method for requirement prioritization as being simple makes it quick and easy to complete. It can really help to rank and categorize the requirement to get effective product that can be more sufficient.

* **Functional Requirement**

The table below is for prioritization of the given functional requirement of my project.

|  |  |  |
| --- | --- | --- |
| **ID** | **Functional Requirement** | **MoSCoW Priority** |
| 1 | User Registration | Must have |
| 2 | User Login | Must have |
| 3 | User Edit/ Delete Profile | Should have |
| 4 | Add New League | Must have |
| 5 | Add New Team | Must have |
| 6 | Add Player or Staff | Must have |
| 7 | Edit League, Team, Player and staff | Should have |
| 8 | View League or Team Details | Must have |
| 9 | View Player and Staff Details | Must have |
| 10 | Create Stats Tables | Must have |
| 11 | Edit or Delete Stats Tables | Must have |
| 12 | View Stats Table | Must have |
| 13 | Add News and Updates | Could have |
| 14 | View News and Updates | Must have |
| 15 | Create Fixture | Must Have |
| 16 | Manage Fixture | Should Have |
| 17 | View Fixture | Must Have |
| 18 | Update result At real time | Will not have or Wise have |

Table 1 Functional Requirement with MoSCoW Priority

* **Non-functional requirement**

Here is the non-functional requirement with MoSCoW to help prioritize the requirement

|  |  |  |
| --- | --- | --- |
| **ID** | **Non-Functional Requirement** | **MoSCoW Priority** |
| 1 | User Friendly | Must have |
| 2 | Reliable | Must have |
| 3 | Verification | Must have |
| 4 | Data Integrity | Must have |
| 5 | Efficiency | Should have |
| 6 | Availability | Must have |
| 7 | Capacity | Should have |
| 8 | Environmental | Must have |
| 9 | Maintainability | Must have |
| 10 | Recoverability | Should have |
| 11 | Reusability | Must have |
| 12 | Performance | Should have |

Table 2 Non-Functional with MoSCoW Priority

## System Requirement Specification

A system requirement specification (SRS) provide a detailed explanation of the features and behavior of the system. It gives knowledge about different hardware and software that are needed for developing the project. Here are the list of hardware and software requirement for completing my project they are as follows:

* **Hardware and Software**
* **Laptop with following specification**:

Windows 8, 8.1, 10 operating system with processor

Processor - dual core 2.4 GHz+ (i5 or i7 series Intel processor or equivalent AMD)

RAM - 4 GB and higher

Hard Drive - 256 GB or larger solid state hard drive

Graphics Card - any with DisplayPort/HDMI or DVI support - desktop only

Wireless (for laptops) - 802.11ac (WPA2 support required)

Backup Device - External hard drive and/or USB Flash Drive

* **Laptop with following application install:**

XAMPP: Cross-platform (X), Apache (A), MySQL (M), PHP (P) and Perl (P)

Star UML

Project Libre

Microsoft Office

Google Chrome, Mozilla Firefox etc.

# Use case

A use case diagram is a graphical representation of the interaction among the fundamentals of a system. [(Margaret Rouse, 2015)](#Usecase) It is used in system analysis so it can help to categorize, simplify and organize the system requirement.

The purposes of use case diagram are as follows:

* To use to gather the requirements of a system or project
* To get an external opinion of a system or project
* To recognize the external and internal factors influencing the system or project
* To show the interaction between the requirements are actors.

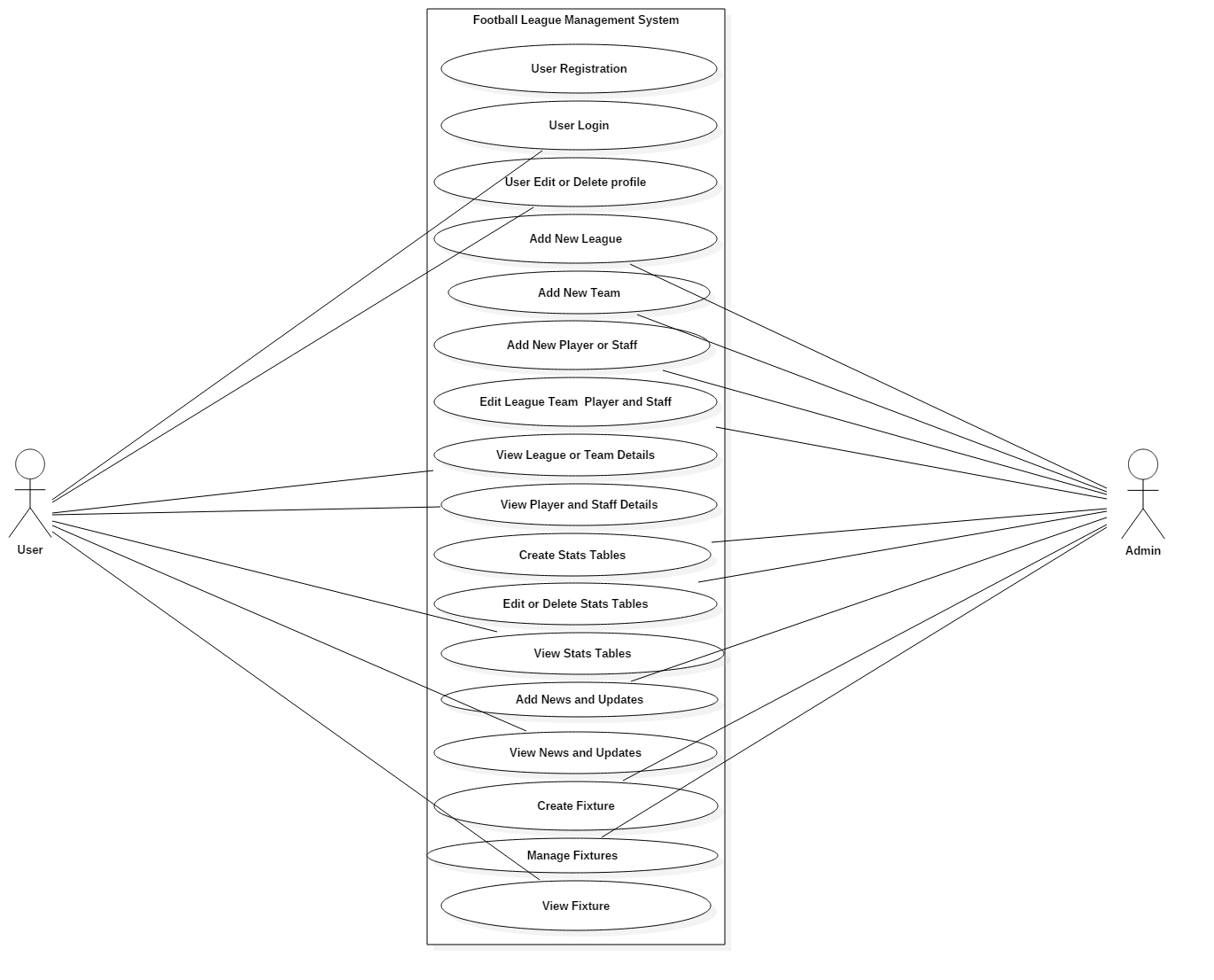


Figure 4 Use Case Diagram

# Initial Class Diagram (NLA)

Class Diagram is a type of static structure diagram that helps to explain the structure of the system by showing the system’s class, their attributes, operation or method and relationship among object. [(Visual Paradigm, 2015](#NLA)). NLA stands for Natural Language Analysis which is the process that helps to identify verbs, Adjectives and nouns where verbs are related to potential functionality that must be represented Adjectives that are related to potential attributes and Noun are related to potential classes.

Here is the scenario for my project to perform Natural Language Analysis. With the help of the following scenario

**Scenario**

Sometimes **user** are unable to get **information** about their **favorite** **teams**, **player** or even the **league** in related to their domestic **league** and international **teams**.

**Football** **League** is an **association** of **football** **clubs** that helps to organizes **matches** between different **teams** of a similar standard. **Football** **league** management **system** help to manage the **football** **leagues** and provides **user** to gains access on many different information about their favorite **teams**, **players** and **leagues**. It also helps to provide **stats**, **fixture** between **teams** in different **matches** and their **match’s** details.

Being the most famous **sports** on the world means having more no of fans who want to get **information**. There are many sites to get **information** but not every **user** get satisfied result of what they wants. The system helps **user** to accessed information and interact with the system. **User** are able to register which the **user** will be required to enter following information

1. **Name**
2. **Email Address**
3. **Location**
4. **Password**
5. **Gender**
6. **Phone Number**

Each register **user** will be able to interact with **system** to get **information**, **comment**, ask **question** etc. When **user** able to access the **system**. **User** need to create their own account to log into the system so they are allowed to:

* Access their registration
* Update their information
* Change their password

Football league Management System provides following functionality:

* Allows **user** to register themselves and edit the profile
* Allows **system** to create new **league**, **team**, **player** and **staff**.
* Allows **system** to alter change **League**, **Team**, **Player** and **Staff** information
* Allows **user** to view **league**, **team**, **player** and **staff** information
* Allows **system** to create and alter **Stats** **tables** and **Fixture**
* Allow **user** to add and alter **News** and **Updates**
* Allows **user** to **View** **Stats** **tables**, **Fixture**, **News** and **Updates**.

The **system** to manage **football leagues** will help user to accessed information and interact with **system** throughout any place of the world.

1. **NLA Table**

* **Noun**

List of noun after removing all repeating and synonym Noun from the scenario are as followed:

User, Information, Favorite, Teams, Player, League, Football, Stats, Fixture

Sport, Name, Email Address, Location, Password, Gender, Phone Number, System

Comment, Question, News and Updates, View

* **Verbs**

List of Verbs after removing all repeating and synonym Verbs from the scenario are as

Followed:

Organize, Manage, Access, Register, Provide, Update, Alter, Add, Interact

* **Adjectives**

List of adjectives after removing all repeating and synonym adjectives from the scenario are as Followed

Domestic, International, Different, Satisfied, Required, New

After Performing NLA these are the following Result

|  |  |  |
| --- | --- | --- |
| **Noun** | **Adjectives** | **Verbs** |
| User, Team, Player, League, Stats, Fixture, | New, Required, International, Domestic, | Access, Register, Update, Alter, Add |

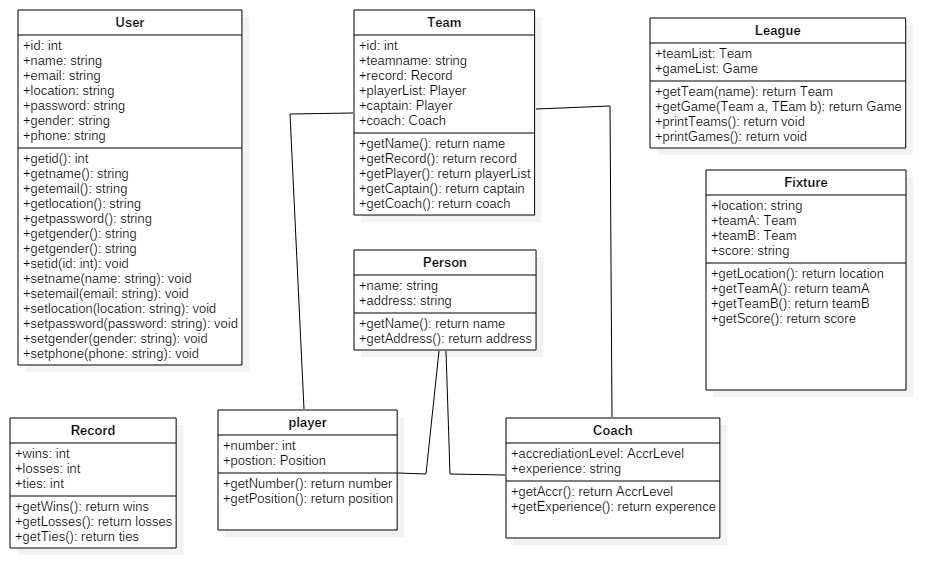


Figure 5 Initial Class Diagram

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