# **Introduction to Analysis**

Analysis can be defined as detailed examination of the information or data and also can be evaluated. It can also be said as the process where we divided the elements into smaller components to make a clear understanding of the information or data. It also provides fundamentals for taking better decision and solving problems.

The first stage of SDLC (Software Development Cycle) is analysis. This stage is very important to determine and define the goals and objective of the project. During the analysis stage, possible problems are identified and also solution of the problems. Recommendations are given for the improvement of the project. Costs, benefits, project’s pros and cons are taken into account for proper planning of the project.

Before staring the development works system requirements are analyzed and after this analysis process system requirement specification and its detail is created.

# **Analysis Methodology**

Object Oriented Design Methodology is the analysis methodology I have chosen to use. Applying this methodology enables to build a more rigid working system which is well-designed.

Single entities called objects are used in Object Oriented Approach. Complex relationships can be represented in Object Oriented models. This also helps us for better analysis and designing. The main aim of this methodology is to make improvement in the quality of system analysis and design.

# **Feasibility Study**

Initial design phase of the project where elements of knowledge is gathered to see if the project is possible or not. Some of the types of feasibility study are:-

**Technical Feasibility Study**

It is a study done to find out whether the organization have the technological resources and people working on the project have the capabilities to undertake the project. It covers the important aspects of engineering which is required for the project’s design.

**Schedule Feasibility Study**

It is a study done to find out whether the project can be completed in given time and if the time specified for certain objectives are viable.

**Economic Feasibility Study**

It is a study done to find out if the project can be undertaken with the given financial resources and if the project is financially viable. This study also can be called as cost/benefit analysis.

**Cultural Feasibility Study**

It is a study done to find out both the general and local cultural impact. The project that is being developed should be appropriate with the cultural environment. Cultural beliefs and practices should be taken into account while carrying out project development. This will decrease any tension between cultural beliefs and practices of the people.

**Political Feasibility Study**

It is a study done to find out if the project being developed will be effected by political factors. Political factors may also represent legal/ethical viability for the project being developed. So, it important to consider political factors while developing a project.

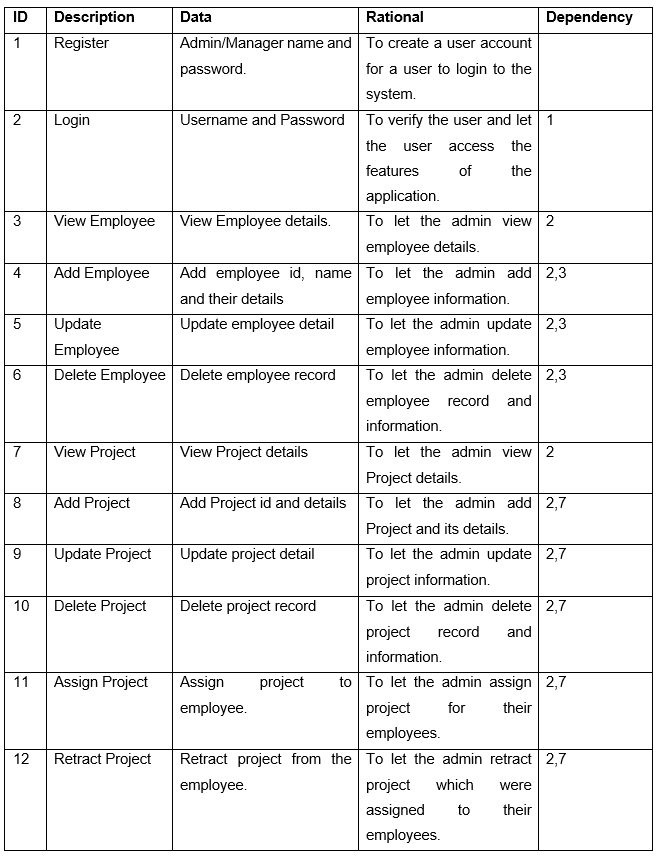
**Safety Feasibility Study**

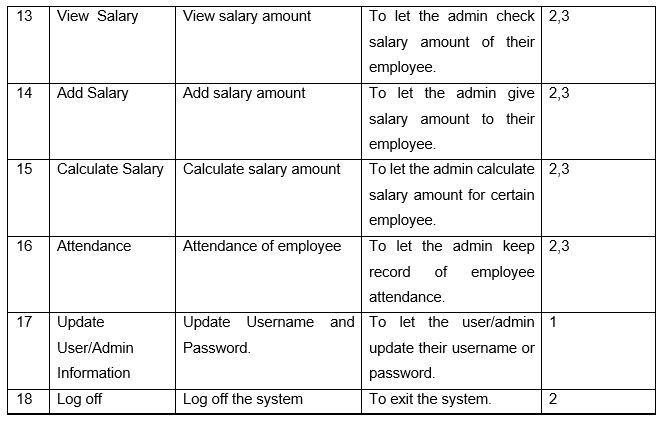
It is a study done to find out whether the project being developed can be developed without major obstruction or having negative impact on the stakeholders and environment.

# **Requirement Analysis**

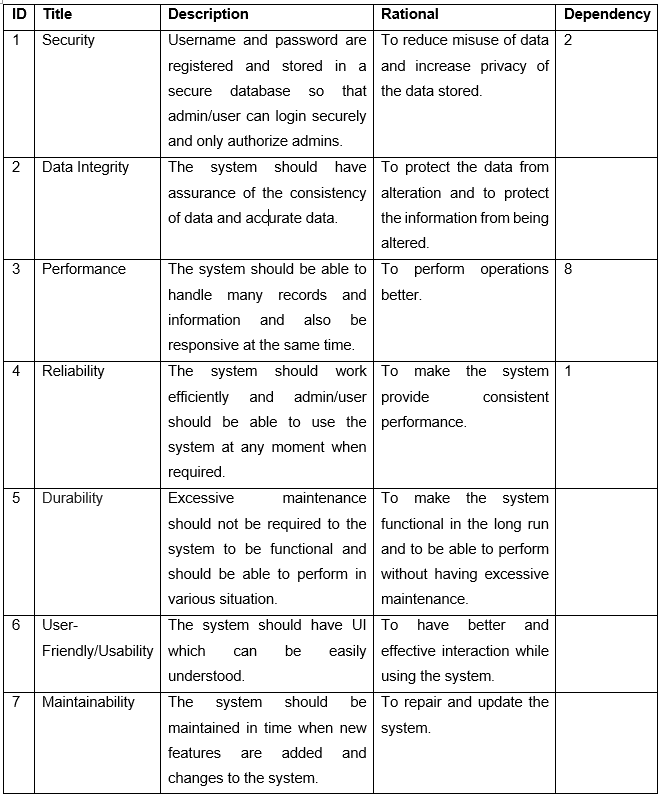
One of the most important part of analysis in project management is requirement analysis. Requirement analysis can be defined as the processes of determining needed and relevant requirements to meet the user expectation and the requirements should be detailed and specified. The two important types of requirements are Functional Requirements and Non-Functional Requirements.

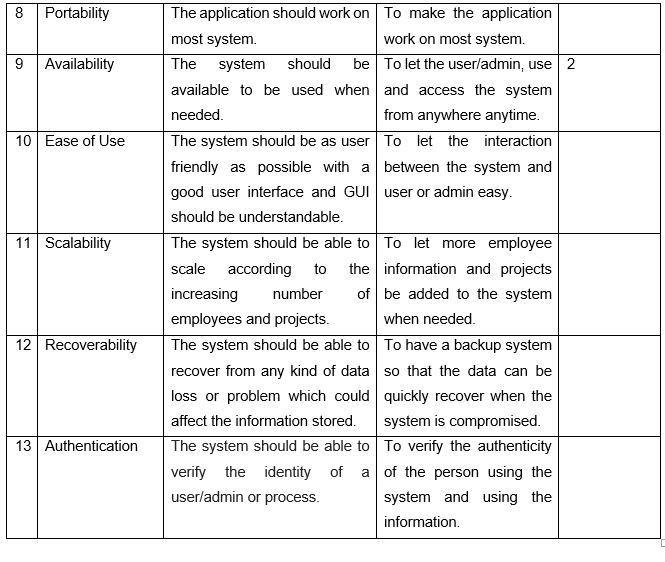
Functional Requirements.





Non-functional Requirements





### **Prioritization**

Prioritization is the process of arranging items or activities according to their importance. Projects can have multiple requirements which may not be fulfilled. Therefore, requirements should be prioritized according to their importance to fulfill the important requirements first.

**MoSCoW Prioritization**

It is a technique for managing and analyzing software development and also business processes to meet necessary functions and importance of each requirement where both the clients and stakeholders agree upon can be defined as MoSCoW Prioritization.

The four MoSCoW prioritization categories are:

* Must Have: The requirements that must be in the system or project and also should be fully functional.
* Should Have: The requirements that should be in the system or project which can be introduced as a new and updated feature.
* Could Have: The requirements that are desired but aren’t necessary to the system.
* Won’t Have: The requirements that are currently not important to the system.

Prioritization for Functional Requirements:

|  |  |  |
| --- | --- | --- |
| **ID** | **Functional Requirement** | **MoSCoW** |
| 1 | Register | Must Have |
| 2 | Login | Must Have |
| 3 | View Employee | Must Have |
| 4 | Add Employee | Must Have |
| 5 | Update Employee | Must Have |
| 6 | Delete Employee | Must Have |
| 7 | View Project | Must Have |
| 8 | Add Project | Must Have |
| 9 | Update Project | Must Have |
| 10 | Delete Project | Must Have |
| 11 | Assign Project | Should Have |
| 12 | Retract Project | Should Have |
| 13 | View Salary | Should Have |
| 14 | Add Salary | Must Have |
| 15 | Calculate Salary | Could Have |
| 16 | Attendance | Could Have |
| 17 | Update User/Admin Information | Must Have |
| 18 | Log off | Could Have |

Prioritization for Non-Functional Requirements:

|  |  |  |
| --- | --- | --- |
| **ID** | **Non-Functional Requirement** | **MoSCoW** |
| 1 | Security | Should Have |
| 2 | Data Integrity | Should Have |
| 3 | Performance | Must Have |
| 4 | Reliability | Could Have |
| 5 | Usability | Must Have |
| 6 | User-Friendly | Must Have |
| 7 | Maintainability | Should Have |
| 8 | Portability | Won’t Have |
| 9 | Availability | Won’t Have |
| 10 | Ease of Use | Should Have |
| 11 | Scalability | Could Have |
| 12 | Recoverability | Could Have |
| 13 | Authentication | Could Have |

# **SRS**

Specification is the act of describing or stating precise information about hardware or software products or requirements.

The recommended specifications for the web application to function properly are:

|  |  |  |  |
| --- | --- | --- | --- |
| **S.N.** | **Title** | **Minimum** | **Recommended** |
| 1 | Operating Systems | Windows XP/vista | Windows 7, Windows 7, Windows 10(32/64-bit) |
| 2 | Integrated Development Environment (IDE) | Visual Studio 2013 (2.0-4.5.2.NET Framework version) | Visual Studio 2017 (3.5-4.7.NET Framework version) |
| 3 | Relational Database Management System (RDBMS) | SQL Server 2014 | SQL Server 2017 |
| 4 | Processors | i5 1.6 GHz or better | AMD Phenom, Intel Core 2, Core i3 or better. |
| 5 | RAM | 4 GB | 8 GB |
| 6 | Storage | 3 GB | 5 GB |

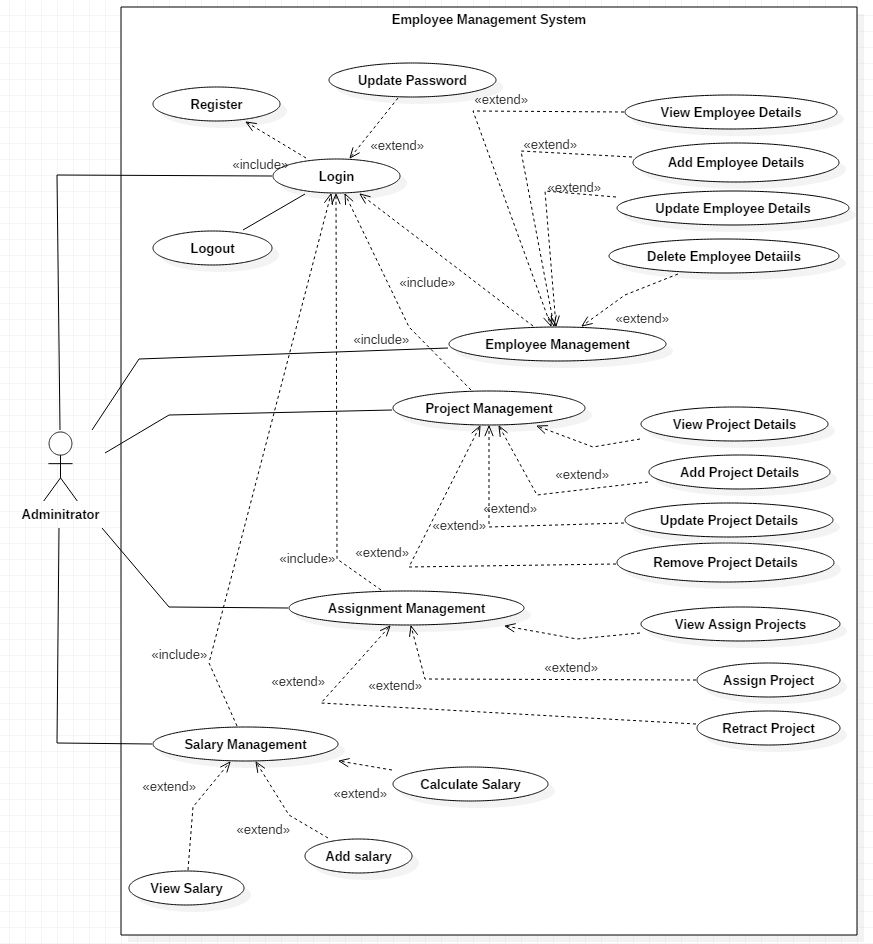
## **Natural Language Analysis**

NLA (Natural Language Analysis) is the process of using a system’s ability to process sentences in natural languages such as English. This process helps to understand the system better. This process involves identifying nouns, verbs and adjectives.

WELINK consultancy is a small organization. The company is in need of proper and better employee management system. The company follows hardcopy management of employee information and records. The company wants to make a better management system so that the information about employees can be securely stored and management of those information will be more effective. The organization expects the system to have a certain features that will make it effective while making the use of it. The system should consist a feature to add employee information and details such as employee name, gender, age, employee ID, Address etc. They also want the system to have features where projects can be added and for the projects to be assigned for specific employees. The system should also have some sort of feature for keeping track of salaries that must be provided to the employees and amount that should be provided. The system could have attendance but this feature is not mandatory.

|  |  |  |
| --- | --- | --- |
| **Nouns** | **Verbs** | **Adjectives** |
| Admin | Register |  |
| User | View |  |
| Manager | Add |  |
| Employee | Update |  |
| Project | Delete |  |
| Assignment | Detail |  |
| Salary |  |  |
|  |  |  |

# **Use Case**



# **Initial Class Diagram**

