# Introduction

Analysis is an important phase in SDLC (System Development Life Cycle). It is an essential aspect in project development. It is about determining the user expectations for the project. A system cannot be developed if its requirements are not clear. There has to be a view or concept of what to be included in our system that will benefit the clients, in order to succeed. So these are some of the importance of requirement analysis-

* It helps in breaking a huge problem into micro parts.
* It assists the developers in making decisions.
* It is important to clearly understand what the purpose of a project is.

So, the system requirement analysis have-

* Functional requirement and
* Non-functional requirement

We are going to discuss the analysis methodology for this project. The functional and non-functional requirements of the system. MoSCow prioritization and the diagrammatical explanation of the system functions.

# Analysis Methodology

Planning, Analysis, Design, Implementation and maintenance are the stages of System Development Life Cycle (SDLC) that are followed while developing a system. Among them analysis is an important phase where all the requirements, methodologies and studies are done about how the system should be.

This is a very important phase. Among many analysis methodologies, here is the thorough explanation about what SSADM (Structured Systems Analysis & Design Method) is.

The SSADM methodology is based on the waterfall model. It divides the project development into modules, stages, steps, and tasks. These are some advantages of SSADM:

* Better quality product
* Focuses on timelines
* Effective use of skills

Some important characteristics of SSADM are:

* Dividing a project into small modules with well-defined objectives
* Useful during requirements specification and system design stage
* Diagrammatic representation and other useful modeling techniques
* Simple and easily understood by clients and developers
* Performing activities in a sequence

Rich picture

Rich picture is a drawing of any situation that is going on in a system. It is a way to explore a situation through a diagrammatical representation.

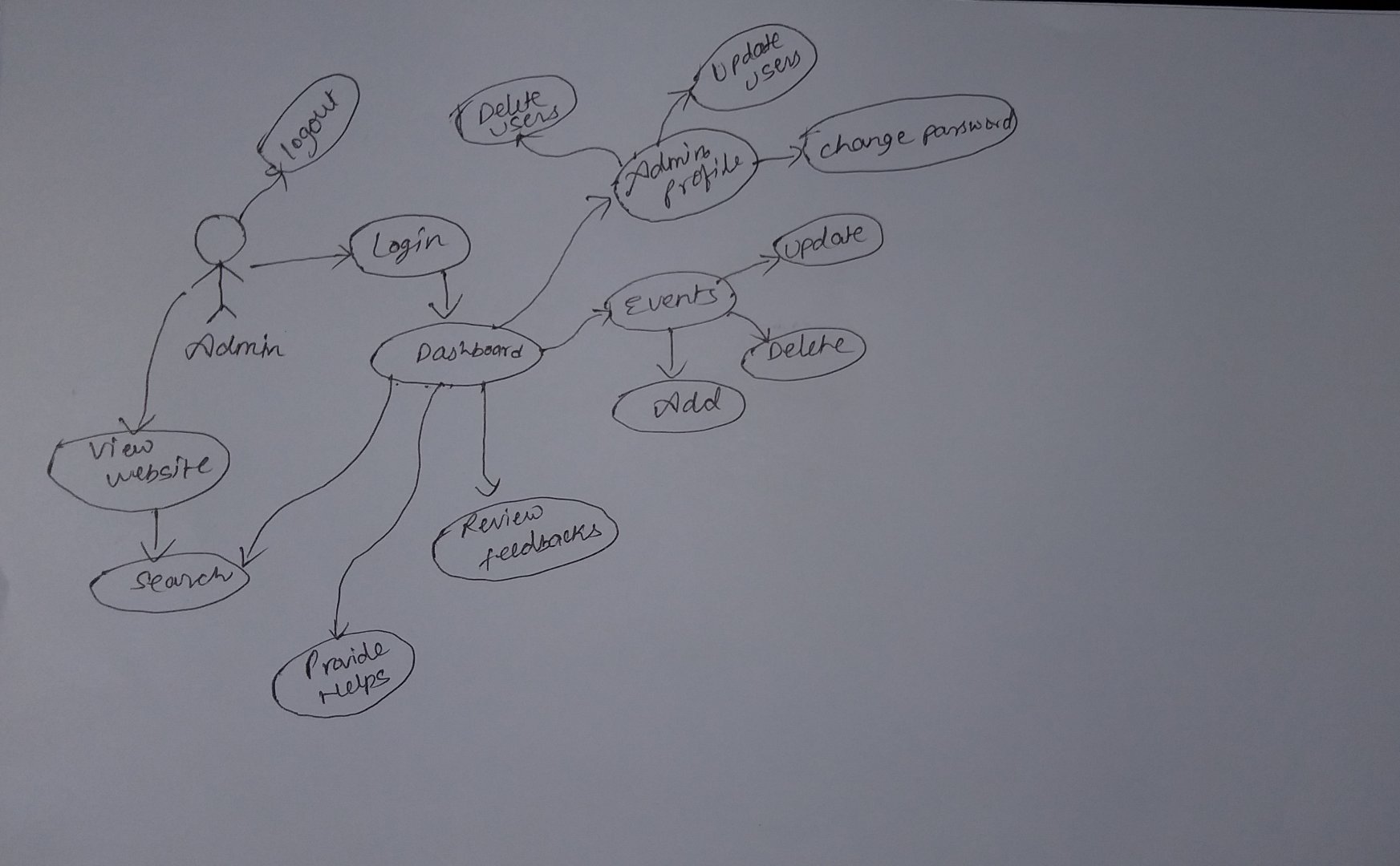


Figure 1 Rich picture: Admin

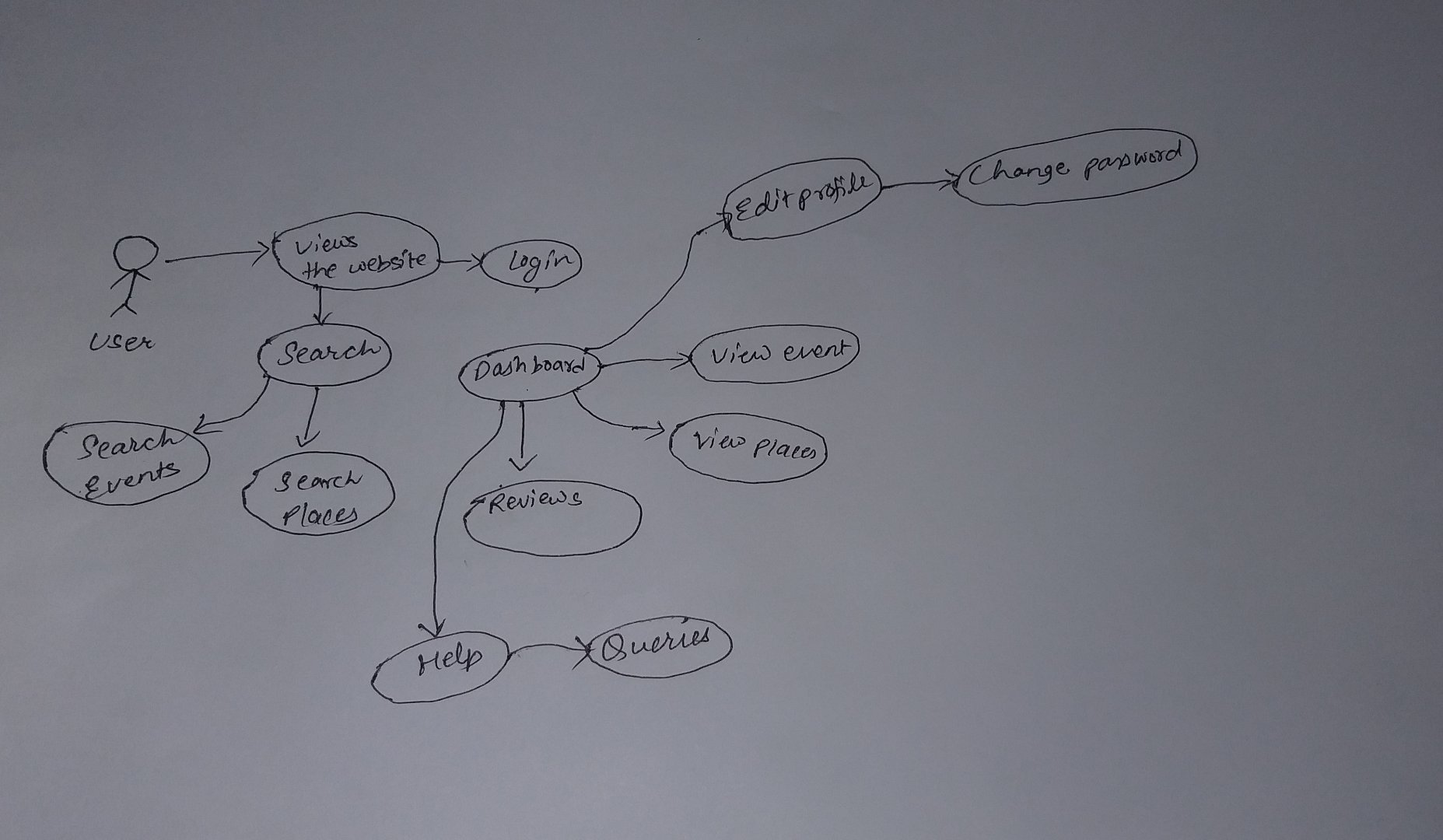


Figure 2 Rich picture: User

CATWOE

CATWOE stands for: Customers, actors, Transformation process, Worldview, Owners and environmental constraints. CATWOE Analysis is a method of problem solving that asks you to look at an issue from six unique perspectives. This approach requires that we think about any given problem in various ways, to find a better understanding and appreciation for the issue.

Why use CATWOE analysis?

* It helps to look at all the perspective from different angles.
* It is a way to look deeper into the surface to to reach an effective solution

Conceptual diagram

A conceptual diagram provides a graphical view of the conceptual structure of an information system that helps us understand the relation between the key attributes in a system.

1. User

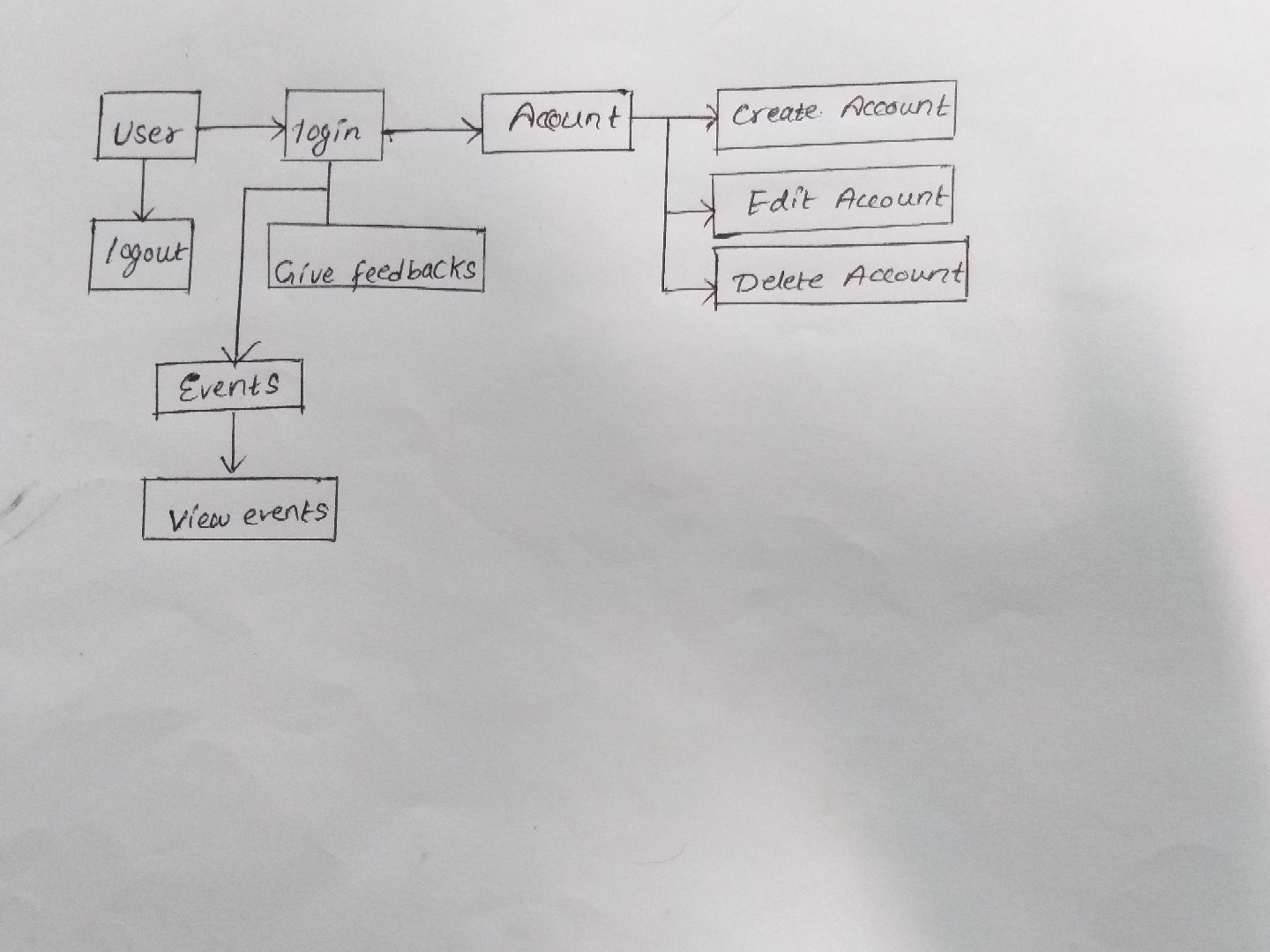


Figure 3 Conceptual diagram: user

1. Admin

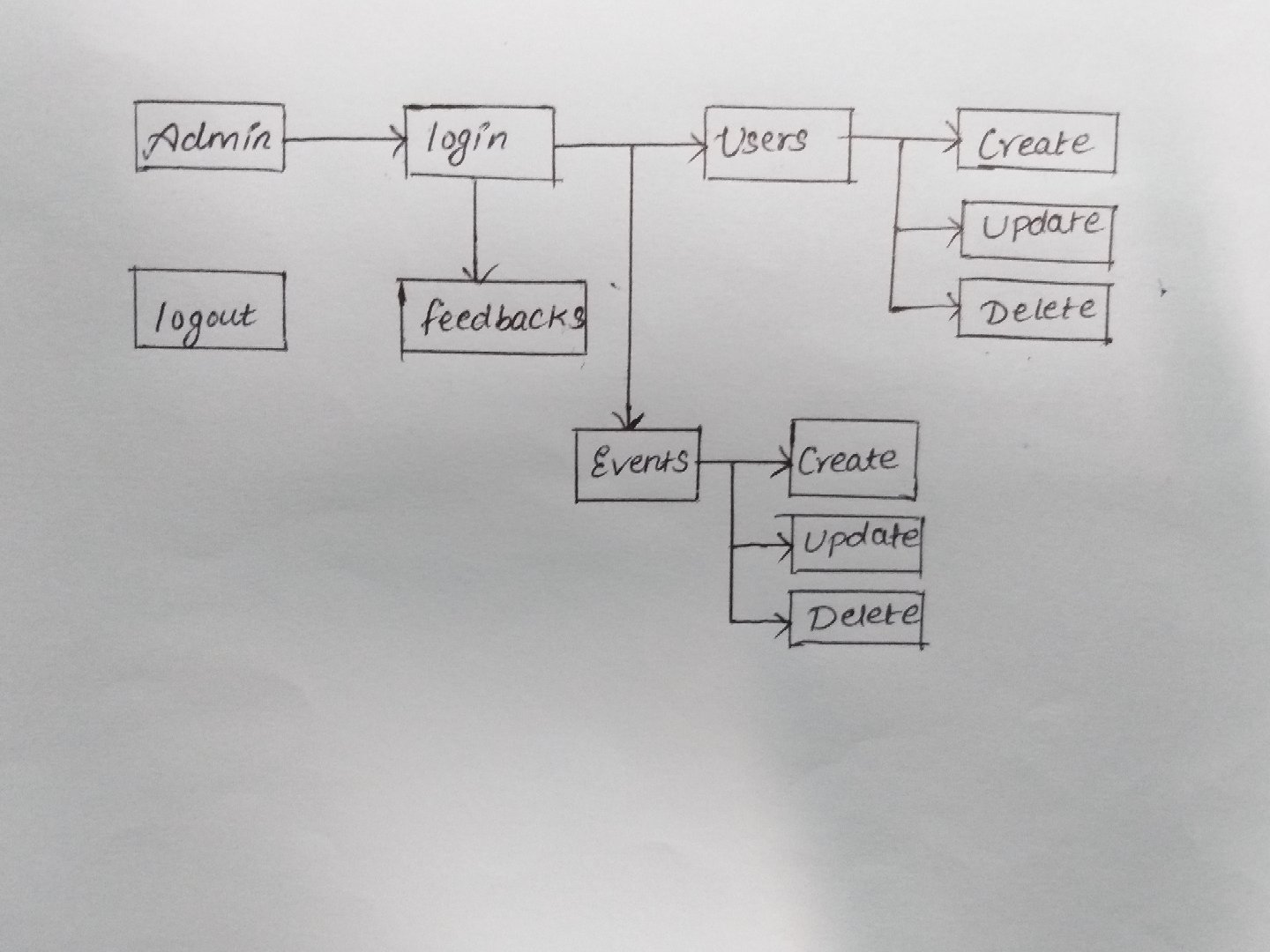


Figure 4 conceptual diagram: admin

# Feasibility Study

It is an analysis and evaluation of a project if it is feasible on the basis of time, resources, technology, marketing and so on. It helps determine how profitable the project might be or would it be good idea to conduct it or not.

Here we have listed the seven areas of feasibility study-

**Time feasibility**- We are focusing on the amount of time we have, to finish this project. It is the most important one for the success of any project. If it is not completed on time there is no reason for the project to succeed.

**Social feasibility**- We are focusing on the impact this project can have in society. This project doesn’t have any bad impact on the society.

**Operational feasibility**- This focuses on the operational side of the project. Whether it can operate well and take on the new opportunities or not.

**Technological feasibility-** We focus onthe basis of technologythat we have and whether it is enough to work with this project or not.

**Marketing feasibility-** This assessment is all about the stability or the market competency of a project. Whether or not this project has a marketing feasibility or not.

**Resources-** This assessment involves the resources available for the project.

Importance of feasibility study-

* To identify the new opportunities
* Identifies a valid reason to proceed the project
* Helps in identifying the weakness and strength
* Helps in decision-making on the project
* To identify if there are any reason not to proceed

In the table below, we are discussing on the types of feasibility study, the questions answered by it and its relation with the project.

|  |  |  |  |
| --- | --- | --- | --- |
| **S.N** | **Types of feasibility study** | **Questions answered by the study** | **Relation with the project** |
| 1 | Time feasibility | Will the time allocated be enough for this project? | Since, the project is scheduled with Gantt chart and work breakdown structure, it is expected to be finished on time |
| 2 | Social feasibility | What kind of impact does it make on society regarding the cultures? | It helps prevent Nepali culture and tourism development |
| 3 | Operational feasibility | Will the project be able operate well and take on the opportunities? | Being a tourism country, this project is a great opportunity. |
| 4 | Technological feasibility | Will the current technology be enough for creating this project? | I have an internet facility and a reliable device |
| 5 | Marketing feasibility | Will this project have an impact of market? Can it survive? | It is assumed that this project can do very well in market as Nepal is a tourism country and most he the travelers are always seeking for a little help |
| 7 | Resources | Are the resources available for this project enough? | The resources are enough with the fast internet and a reliable device |

# Requirement Analysis

Requirement Analysis, also known as Requirement Engineering, is the process of defining user expectations for a new software to be built. This is a process of determining the requirements and conditions for a new product or project. They define the functionality of the software, which the system to be developed so that the users could easily perform their tasks up to the business requirements. Here, it is sub divided into Functional and non-functional requirement.

**Objectives of Requirement Analysis**

* To introduce the concepts of user and system requirements.
* To describe the system on the basis of functional and non-functional requirements.
* To visualize the idea of the finished product.
* To describe the functionality of the system.

## Functional requirement

They are the product features or functions that must be implemented to enable users to accomplish their tasks. It generally defines the system behavior under certain condition. They are the prioritized requirements for the system.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **ID** | **Title** | **Description** | **Rational** | **Dependencies** |
| FR001 | Create user/admin account | Creating the user for the system or the admin to make the changes | To make users be able to view the contents which can be reviewed by an admin | N/A |
| FR002 | Update function | Updates the viewing contents or users | To update the contents and users | FR001 |
| FR003 | Delete | Deleting the user information | To delete the information | FR001 |
| FR004 | Feedbacks from users | Taking the feedbacks from the user for the functional reviews | To take the audience’s views and thoughts about the content. | N/A |
| FR005 | Map feature | Maps for the different places with their location | To guide the travelers with the location of their destination | N/A |
| FR006 | Admin login | Login for the admin | To make a system admin account | FR001 |
| FR007 | Events details | Details of different kinds of places to visit | To put up the details on ongoing as well as upcoming events | FR001  FR002 |
| FR008 | Search option | Searching the events or the places | To make it easier for people to search any event, places or activities of their liking | N/A |
| FR009 | Admin dashboard | Dashboard regarding admin details | To build the user interface for the admin side of the web application | FR001  FR006 |
| FR010 | Links of social sites | Social site links for better information | To redirect the users into other social sites | N/A |
| FR011 | Event updates | Updates about different events | To keep the users up-to-date about the events | FR001  FR002 |
| FR012 | Database | Keeps the records of events as well as the users | To keep the user and event information | FR001  FR002 |
| FR013 | User Login | Makes the user able to login to the system | To let users login to the system to view the content | FR001 |
| FR014 | Logout | Makes the user be able to log out | To log out from the logged in system | FR013 |
| FR015 | Photo gallery | Photos related to the events | Photos for users to view and take the idea | FR001 |
| FR016 | Plan the trip | Ideas regarding the trip plans | To help the users with the places they want to travel to | FR001  FR005 |

## Non-functional requirement

They are the requirements related to the technical functionality of the system. It describes how the system works.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **ID** | **Title** | **Description** | **Rational** | **Dependencies** |
| NF001 | Responsive website | Is easy to use on any device | To make is responsive on any kind of device | N/A |
| NF002 | User friendly site | Easier to use, not advanced featured | To make is easier for any of user | N/A |
| NF003 | Data integrity | Data integrity facility | Facilitate the users with data integrity | N/A |
| NF004 | Portability | Portable website, can be viewed on any device | To facilitate the users with the ability to use the system on any device | N/A |
| NF005 | Good performance | Does the work it is specified to do | To make is easier for the users to get the information of their needs | N/A |
| NF006 | Security function | Data security | Not to leak the information if there are any | FR013 |
| NF007 | Documentation | Process and stages description | To make the documentation of the project | N/A |
| NF008 | Privacy | User privacy to data | To provide privacy to the user data | FR013 |
| NF009 | Reliability | Reliable stuff for the users |  | N/A |
| NF010 | Quality | A quality product |  |  |
| NF011 | Responsive time | Response time to users | To response to use requests on time |  |
| NF012 | Maintainability |  |  |  |

## MOSCOW prioritization

MoSCoW prioritization, also known as the MoSCoW method or MoSCoW analysis, is a popular prioritization technique for managing requirements. The acronym, MoSCoW, stands for 4 different categories of initiatives: must-haves, should-haves, could-haves, and will not have at this time. Sometimes, the “W” in MoSCoW is used to stand for “wish” instead of “will not have right now.”

**Must have**

These are the must have functions in the system. The system cannot or may not be able to function without them. They are the must have for the project which needs to be given a quite more amount of time.

**Should have**

They are the ‘should have’ functionality of the system are a little less important than must have initiatives but they are not vital.

**Could have**

These are not the necessary stuff to the function but just an alternative idea of what could have been in the system for the additional feature.

**Will not have**

This is about defining what will not be included in the release. They are not a priority for the certain time frame.

|  |  |  |
| --- | --- | --- |
| **ID** | **Title** | **MOSCOW** |
| FR001 | Create | Should have |
| FR002 | Update function | Should have |
| FR003 | Delete | Should have |
| FR004 | Feedbacks from users | Should have |
| FR005 | Map feature | Must have |
| FR006 | Admin login | Must have |
| FR007 | Events details | Must have |
| FR008 | Search option | Should have |
| FR009 | Admin dashboard | Must have |
| FR010 | Links of social sites | Should have |
| FR011 | Event updates | Should have |
| FR012 | Database | Must have |
| FR013 | Login | Must have |
| FR014 | Logout | Must have |
| FR015 | Photo gallery | Should have |
| FR016 | Plan the trip | Could have |
| NF001 | Responsive website | Must have |
| NF002 | User friendly site | Must have |
| NF003 | Data integrity | Must have |
| NF004 | Portability | Must have |
| NF005 | Good performance | Must have |
| NF006 | Security function | Must have |
| NF007 | Documentation | Should have |
| NF008 | Privacy | Must have |
| NF009 | Reliability | Must have |
| NF010 | Quality | Should have |
| NF011 | Responsive time | Must have |
| NF012 | Maintainability | Should have |

## SRS (System Requirement Specification)

Pre SRS

|  |  |
| --- | --- |
| **Hardware Requirements** | **Software Requirements** |
| 1 GB RAM | Operating system- Windows 10 |
| Processor- Core i5 | Database- MySQL |
| Hard disk- 1 TB | Browser- google chrome, Mozilla Firefox, Microsoft edge |

Post SRS

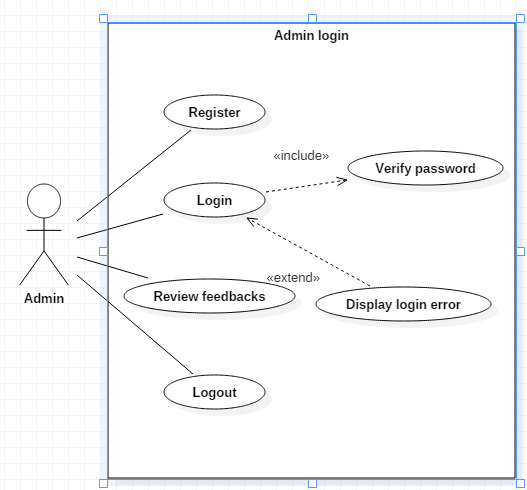
|  |  |
| --- | --- |
| **Hardware Requirements** | **Software Requirements** |
| Minimum 1 GB RAM | Operating system- Windows Xp and above |
| Hard disk- 300 GB | Browser- google chrome, Mozilla Firefox, Microsoft edge |

# Use case diagram

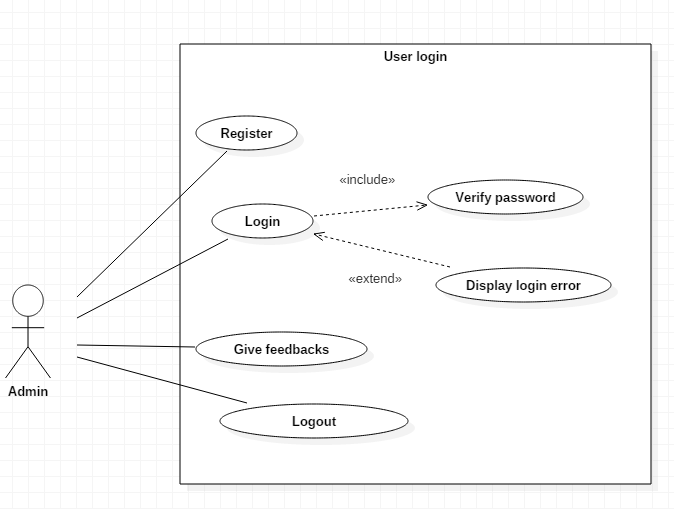
A use case diagram is a graphic representation of the interactions between the elements in system. A use case is a methodology used to identify, clarify, and organize the system requirements.

1. Admin login

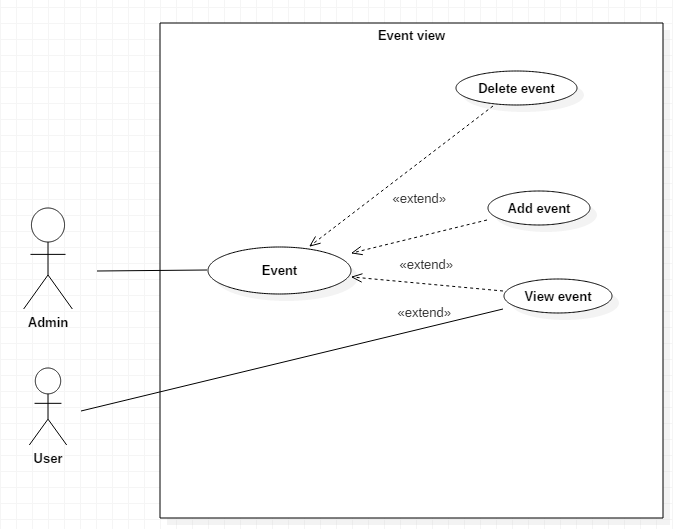
Admin being the system administrator has to first



1. User login



1. Event view use-case



# NLA and Initial class diagram

Culturally Nepal is a website that provides the information of cultures in Nepal. This is a web based system and it aims to work as a tourist guide and help them travel the different places in Nepal including the adventures and the cultural event sites.

There are two main users for the system: Admin and users. Admin has to login in to the system as well. The admin and user’s information have following data- Username, Password and email-id. Admin can create, update and delete events. Normal users can only view the content, add an account and delete their own account.

The normal users can also provide feedbacks regarding their thoughts whereas the admin can review the feedbacks. Users can also look for different kinds of adventurous activities.

Regarding the above scenario, Natural Language Analysis (NLA) has been done by separating the noun for **candidate class**, adjectives for **attributes** and verbs for **operations**.

|  |  |  |
| --- | --- | --- |
| Candidate class(Noun) | Attributes(Adjective) | Operations(Verbs) |
| User, website, system, data, event, content, account, cultural event sites, activities | Username, email-id, password | Create, update, delete, view, travel |

**Initial class diagram**