# Chapter 2: Analysis

## 2.1 Introduction to analysis

Analysis is the initial stage in building a system is to understand what that system should be. Better analysis leads us to the better understanding is the system and help to know the limitations of the system. Analysis works as the bridge between the information we have and the way the system should actually work. During analysis phase, requirement analysis is the most important step to be followed carefully.

In requirement analysis phase, requirements are gathered. The process of gathering the requirement is perform by interviews, focus group, questionnaires etc. Requirement analysis provides the user requirements, system requirements, how the system functions so on. A software requirements specificationis also provided, which includes details of the functional requirements of the system, such as the interactions between the users and the software and the non-functional requirements, e.g. the quality standards. Analysis are of different types such as PEST analysis, SWOT analysis, CATWOE analysis, etc.

For my project I have used PEST analysis. PEST stands for Political, Economic, Social and Technological. This analysis help to understand how external forces can affect the business. It is the tactical tool used for understanding market growth or market downfall, knowledge management and strategic planning.

PEST analysis mainly work for following factors:

1. Political

Political factor relates with the government interferes in the economy. Political factors includes tax policy, environmental policy, political instability, safety regulations, etc.

Political factors that can affect my projects are:

* Tax law
* Environmental policy as liquor business can affect the environment of the society so our online liquor shop will supply only in limited hours.
* As government changes policies will may be change.
* safety regulations

1. Economic

Economic factorsassess local, national and global influence on the organization. It includes following factors:

* economic growth of the organization
* maintaining tax rates
* Maintaining exchange rates
* Organizations progress rate.

1. Social

Social factor assess ways in which a society can influence an organisation. It includes following factors:

* cultural aspects and health awareness
* High trends in social factors affect the demand for organization products
* career approaches and prominence on safety

1. Technological

Technological factors assess the impact of new and emerging technology on an organisation. It has the huge impact on the organization as technology of increasing day by day, which is leading to automation. With increasing technology it is difficult to maintain upgrade the as technology increases.

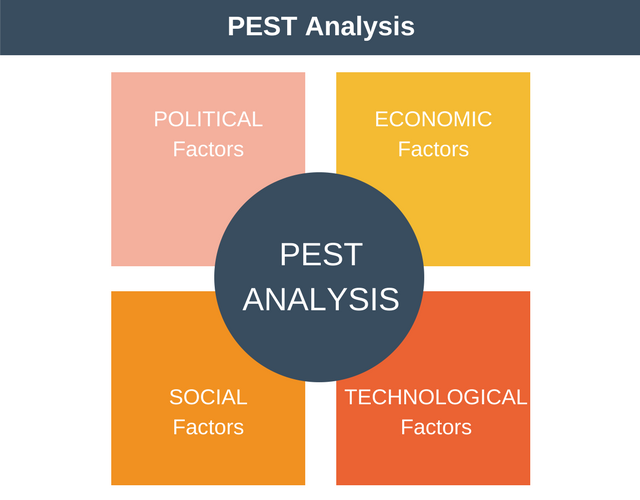


Figure: PEST analysis

## 2.2 Feasibility study

A feasibility study is an analysis that is done for gathering the project's important factors to determine the likelihood of completing the project successfully. This is done to understand thoroughly all the aspects of the project and potential problems may arise in the future.

It provides the information about the project that is going to develop is economically, socially, legally, technologically and politically feasible or not.

Types of feasibility study:

1. Economic feasibility

Economic feasibility provide the information about the product is going to develop is within the budget or not. It also tells about project that is going to develop is economically beneficial or not.

1. Technical feasibility

It tells about the technological resources that are used for the development of the project are sufficient or not. In addition, tells about the processes and procedures undertaken are beneficial to project success.

1. Schedule feasibility

It provides the knowledge about the time calculated for project is enough or not means that, “Does currently I have the time resources to undertake the project?” This project is aimed to be completed in time successfully.

1. Operational feasibility

This measures how well the user can interact with the system. This also measures how well developer able to solve the problems in mean time. This Online Liquor store website is easy to interact.

1. Legal feasibility

This measure the project is able to meet the legal requirements. By help of this feasible study, we can make sure that the project undertaken will meet all legal requirements before the project is on the table.

## 2.3 Requirement analysis

1. Functional requirements

Functional requirement describes about what the system or website should do also tells about the behavior of the system. It describe what type of system user expect. It describe about the data processing of the system.

Following are the functional requirements of the website:

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **F.ID** | **Functions** | **Data** | **Rational** | **Dependency** | **Remarks** |
| F01 | Registration | Users will be register with required information. | User information | F01 | Create new account |
| F02 | Login | Username and password. | Security | F01 | Open dashboard |
| F03 | Reset Password | Email/username | Reset password | F02 | Set new password |
| F04 | Post items | Login first | To post new products | F02 | Products will be post for all users. |
| F05 | Make order | - | To select the items needed. | N/A | Users can order they want. |
| F06 | Manage order | Order details | To view the orders details  Lately. | F02 | Admin can manage the orders. |
| F07 | Delete items | Item details | Admin | F02 | Admin can delete the items. |
| F08 | Payment | User can pay after order delivered. | To pay for the item. | N/A | User should pay with hand cash. |
| F09 | Add categories | It is easy to find the items in related category. | Admin can categories the items | F02 | Admin can categories. |
| F010 | Logout | - | To maintain session | F02 | Admin or user can logout |

1. Non-functional requirements

Non-functional requirements illustrate system qualities, for example, security, reliability, maintainability, robustness, usability, etc. They ensure to get best result from the system.

Non-functional requirements are listed below:

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **N:ID** | **Functions** | **Data** | **Rational** | **Dependency** | **Remarks** |
| N01 | Reusability | - | For future use | N01 | Codes can be reused |
| N02 | Responsive | - | System should be responsive | N02 | Fit in any screen resolution |
| N03 | Maintainability | - | Easy to maintain | N03,N01 | Easy Maintenance |
| N04 | Reliable | - | Maintain Accuracy | N02 | Provide accurate result |
| N05 | Robust | - | Support different device | N05 | Should work in different devices. |
| N06 | Multi-Browser support | - | Tested in different browsers | N02 | Should run in at least two browsers |
| N07 | Performance | - | To maintain systems accuracy | N01,N04 | Test should be done in regular interval |

1. MoSCoW Priotization

MoSCoW Priotization is the method to maintain requirements. This method is used to help key stakeholders understand the important of activities in a certain release.

This letters stand for:

1. **M**ust have

* Project won’t be complete without this
* Cannot provide a workable solution without it

1. **S**hould have

* Important but if not project still work
* If added project will provide worth able solution

1. **C**ould have

* Nice to have
* If left out will not affect the processing

1. **W**on’t Have this time

* This time not possible to add

For functional requirements

|  |  |  |
| --- | --- | --- |
| **F.ID** | **Functions** | **Priority** |
| F01 | Registration | Must have |
| F02 | Login | Must have |
| F03 | Reset Password | Should have |
| F04 | Post items | Must have |
| F05 | Make order | Must have |
| F06 | Manage order | Could have |
| F07 | Delete items | Should have |
| F08 | Payment | Must have |
| F09 | Add categories | Could have |
| F10 | Logout | Should have |
| F11 | Online payment | Won’t have this time |

Table: table of functional requirements priotization

For non-functional requirements

|  |  |  |
| --- | --- | --- |
| **N:ID** | **Functions** | **Priority** |
| N01 | Reusability | Must have |
| N02 | Responsive | Must have |
| N03 | Maintainability | Must have |
| N04 | Reliable | Could have |
| N05 | Robust | Must have |
| N06 | Multi-Browser support | Must have |
| N07 | Performance | Could have |

Table: table for non-functional requirements priotization.

1. Software Requirement Specification(SRS)

A software requirements specification (SRS) is a document that help to list out the detail information about how the software is likely to execute. It is generally listed at the last of requirements gathering phase completed. Some qualities of SRS are Correct, ambiguous, complete, consistent, modifiable, etc.



Figure: some type of requirements that SRS can list.

## Use case

Use case diagram is a significant tool in handling the abstractions. It allows representing the broad interactions between parts of a system. It is used to represent the set of functionality that must be supported for each part. Those parts are called actors. They may be users or may be subsystems.

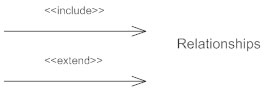
* + Actors are represented by stick figures.

****

* + Actions are represented by ovals in which a broad description of the process is placed.



* + A relationship between the actors and use cases are maintained by a line which connects the actor and the action they can perform.



Now, I have designed a Use-case diagram for my project.

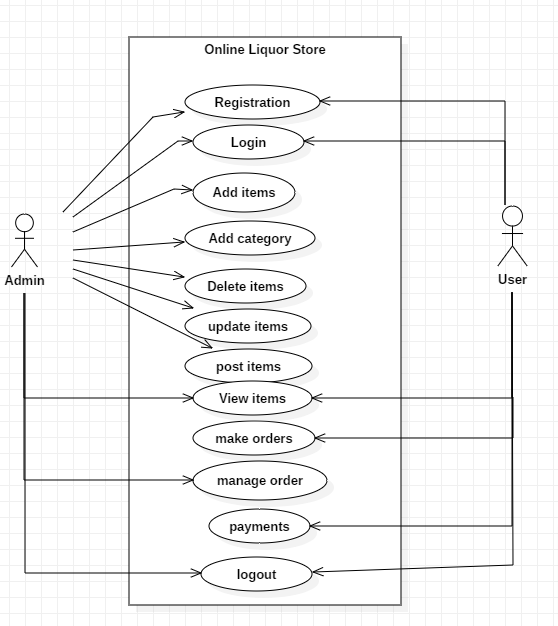


Figure: Use-case diagram.

## Initial class diagram (NLA)

Natural Language Analysis (NLA) is the process of identifying nouns, adjectives and verbs in a part of descriptive text. It is used to obtain a list of candidate classes, their relationships and their attributes.

* + - Nouns relate to potential classes
    - Adjectives relate to potential attributes
    - Verbs relate to potential functionality that must be represented.

**Background of the project**

Online liquor store is the online business, which is going to sell every possible wines, beers, or other types of liquors. Online liquor market will be the big project to complete as their possibly will be the large demand of the product. For this project, there will be the web application that will provide the details about the liquor available and their price. This web site will be the user friendly as people can easily order their products. By the use of this site people need not to visit stores to buy liquors, they can order to their place. Now anyone can track everything about liquors, price of liquor just clicking it of web app on online. I have used PHP for programming and My SQL for manage database of liquors. Features of this website are

* User can Register and Login to the system.
* User can order products from nearby places.
* User can rate products and service of the organisation.
* User also can see the reviews in each products.
* Admin can add new products.
* User can see lists of Upcoming products with prices.
* Database will be designed to keep the details of the products and customers.

Natural language analysis

|  |  |
| --- | --- |
| **Nouns** | **Verbs** |
| User, admin, login, registration, items, category, Job, System, Data, , Name, Email, Plan, Day, Space, Code, Size, Type, Title, Time, Date, Size | Add, Remove, delete, update, manage, registered, order, Done, Allow, Save, Accessing, Complete, Submit |

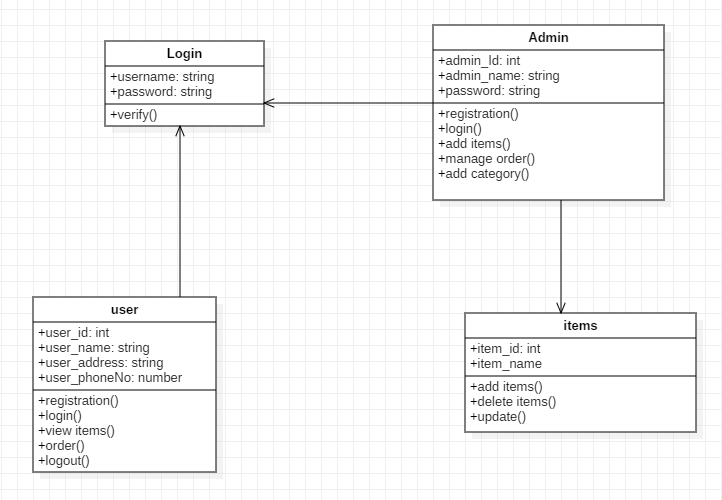


Figure: initial class diagram

## Conclusion: -

During analysis phase I have done feasibility study in oeder to find important factors of the project. Than I have gather requirements of the project which I have divided into two parts functional and non-functional. Later I have used MoSCoW priotization to divide most important feature to least important. I have designed use case diagram which help to understand the roles of user and admin and designed initial class diagram for the project. I have done PEST analysis to handle the different factors of the analysis.