Analysis is the initial step in building a system to understand what that system should be. In this process nature of something is studied or the determination of its essential features as well as their relation also. Here in analysis we break more complex compounds simply saying the project into the simpler or basic ones. It helps us to do and complete the project in time and aids to gather the requirements and develop the software in the different stage.

For the development of my project, Online Laundry. I have gathered some related information by the help of questionnaire, interviews, observing the market, etc. which allows me to glean the requirement to complete the project.

Feasibility study

Feasibility study is the initial design stage of any project, which brings together the elements of knowledge that indicate if a project or conditions is possible or not to begin. Generally, feasibility study is done to check whether the new hardware and software are practicable or not focusing on the project and outline the changes.

In my project, I have considered three components of the feasibility study which are listed below

Economical

The project I am going to complete may be economical as it may help to replace the old paper-based billing system into electrical printing billing system. This system is quite time saving and less effort is used. Similarly, it is good in terms of money. We do not have spend money on paper bills and the environment can be saved also.

Financial

The amount of the investment for my project is very low and can be considered as one-time investment project depending upon the client who uses it, whether or not they want to upgrade/maintenance which leads to investment of some amount. Clients can have maximum return investing on my project as it will save time and effort, especially to those people who have busy schedules.

Legal

This project can maintain security aiding clients and users to rely on it. This project does not have any sort of privacy issues and can be used by all types of users to book a suitable time for laundry. They can legalize it by verifying from the higher authorities.

Analysis methodology

For this project, I have preferred the Soft System Methodology (SSM) analysis since it is more people-focused analysis which will be easier to gather requirements and general problem solving. Tries to foster learning and appreciation of the problem situation between a group of stakeholders rather than set out to solve pre-defined problem.

I have chosen Soft System Methodology because it supports to emphasis on peoples view rather than system so that requirement would be gathered according the needs of the general user, since they are the one who will be using the system all along. I have followed the three steps of this methodology along with it CATWOE analysis is done, which are listed below:

1. Rich picture

A rich picture is a drawing of a situation that illustrates the main elements and relationships that need to be considered in trying to intervene in order to create some improvement. It consists of pictures, text, symbol and icons which are all used to illustrate graphically the situation.

1. Root definition

Here the main purpose of the projects to help the replace the old phone call-pick-up laundry system to the online system. It is a web-based application so all the order will be placed through online with the transparency of the prices of the services they want. These will reduce the fluctuation of the prices in the market.

1. Conceptual model

A conceptual model is a representation of a system made of the composition of concepts which are used to help people know, understand or simulate a subject the model represents. I have followed triple E of the conceptual model to know the systems performance.

1. Efficacy
2. Efficiency
3. Effectiveness
4. Use case diagram

A use case diagram is a dynamic or behavior diagram in UML. Use case diagrams model the functionality of a system using actors and use cases. Use cases are a set of actions, services, and functions that the system needs to perform.

1. Initial class diagram

Initial class diagram shows the classed within a model thus, class diagram provides a static view of the system, defining the static relationships between classes. The initial class diagram can be produced using the result of the CRC process.

Architecture

It defines and structures solution that meets technical and operational requirement aiding to optimize attributes involving a series of decisions, such as security, performance and manageability. These decisions ultimately impact application quality, maintenance, performance and overall success

A three-tier architecture is a client-server architecture in which the functional process logic, data access, computer data storage and user interface are developed and maintained as independent module on separate platforms.

Functional requirements

It refers to declaration of the intended function of a system and its components. Output (behavior) that a system is expected to exhibit in the case of a certain input is determined based on functional requirements.

Below is the function requirement which of my project

ID: FUN1

Title: Login

Description: User can login with the right username and password

Rational: It helps the user to enter the system.

Dependencies: N/A

ID: FUN2

Title: Forgot Password

Description: User can change password.

Rational: It helps user to change password when they forget it.

Dependencies: N/A

ID: FUN3

Title: Add, update, delete data

Description: User can use the CRUD function

Rational: It helps the to manipulate the data.

Dependencies: FUN1

ID: FUN4

Title: View services

Description: User can view the different services with prices

Rational: It helps the user to know the price of the service that they want.

Dependencies: FUN1

ID: FUN5

Title: Order Placement

Description: Users are able to place order.

Rational: It helps the user to place order and pick-up destination.

Dependencies: FUN1

ID: FUN6

Title: Admin login

Description: Have more authority than normal user.

Rational: user with admin authorities can view the number of orders and later make reports.

Dependencies: FUN1

ID: FUN7

Title: Logout

Description: User can logout from the system.

Rational: It helps to user to logout when they have used the system and helps in the security reason.

Dependencies: FUN1

## Non-Functional Requirements

In **non-functional testing** the quality characteristics of the component or system is tested. Non-functional refers to aspects of the software that may not be related to a specific function or user action such as scalability or security. Eg. How many people can log in at once? Non-functional testing is also performed at all levels like [functionaltesting](http://istqbexamcertification.com/what-is-functional-testing-testing-of-functions-in-software/).

ID: NFUN1

Title: Performance

Description: The system should run fast without any lag.

Rational: Productivity maintained

Dependencies: N/A

ID: NFUN2

Title: Usability

Title: The software should be user friendly.

Rational: User will not feel monotous.

Dependencies: N/A

ID: NFUN3

Title: Response time

Description: The software should be quick to response to user.

Rational: rapid respondind.

Dependencies: N/A

ID: NFUN4

Title: Security

Description: User with the right password and username can access data.

Rational; Data confidentiality

Dependencies: N/A

ID: NFUN5

Title: Reliability

Description: The system should be accurate and reliable.

Rational: Maintenance of reliability:

Dependencies: N/A

ID: NFUN6

Title: Availability

Description: Software should run whenever the user wants.

Rational; Upholding the availability

Dependencies: N/A

ID: NFUN7

Title: Maintainability

Description: the software can be maintaining in the future.

Rational: upgrading the system will have better experience

Dependencies: N/A

ID: NFUN8

Title: Recoverability

Description: There should be backup plan to recover the data incase there is any problem.

Rational: Data availability

Dependencies: N/A

Prioritization

Functional Requirement

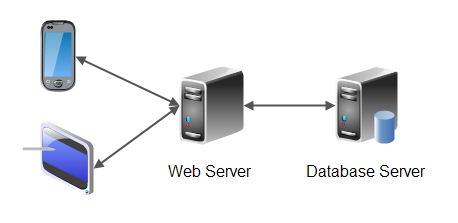
|  |  |  |
| --- | --- | --- |
| ID | Functional Requirement | MoSCoW |
| FUN1 | Login | Must Have |
| FUN2 | Forgot Password | Could Have |
| FUN3 | Add, Update, Delete | Must Have |
| FUN4 | View services | Should have |
| FUN5 | Order placement | Must Have |
| FUN6 | Admin login | Must Have |
| FUN7 | Logout | Must Have |

Non-Functional Requirements

|  |  |  |
| --- | --- | --- |
| ID | Non-Functional requirements | MoSCoW |
| NFUN1 | Performance | Could Have |
| NFUN2 | Usability | Could Have |
| NFUN3 | Response Time | Could Have |
| NFUN4 | Security | Should have |
| NFUN5 | Relaibility | Should have |
| NFUN6 | Availabiliyty | Could have |
| NFUN7 | Maintainability | Could have |
| NFUN8 | Recoverability | Could Have |

## Architecture

Software architecture is the defining and structuring of a solution that meets technical and operational requirements. Software architecture optimizes attributes involving a series of decisions, such as security, performance and manageability. These decisions ultimately impact application quality, maintenance, performance and overall success [(Anon., 2017)](file:///C:\Users\Ditri\Downloads\00168552_ANEESH_SHAHI_CP%20(1).docx#_Chapter_10_-).



It is a **client-server** architecture in which the functional process logic, data access, computer data storage and user interface are developed and maintained as independent modules on separate platforms.”

## Use Case Diagram

A use case is a software and system engineering term that describes how a user uses a system to accomplish a particular goal. A use case acts as a software modeling technique that defines the features to be implemented and the resolution of any errors that may be encountered.

The above picture indicates the use case diagram of the system. The system is a single user program. The user is indicated as actor in the diagram. The actor after the login is directed towards the dashboard where it have access to all the features that are available. The bill can be printed as per the need of the client and they are VAT bill and non-VAT bill. The report shows the overall sales as well as net loss and net profit. In the employees’ data, the actor can have the access of the employees’ data who are working in that particular organization. And in the debit and credit section the actor can manage the credit and debit through out the use of the system. All the case is inherited to dashboard except for login and actor.

## Natural Language Analysis

Natural language processing (NLP) is a method to translate between computer and human languages. It is a method of getting a computer to understandably read a line of text without the computer being fed some sort of clue or calculation. In other words, NLP automates the translation process between computers and humans.

## Class Diagram