# CHAPTER 3

# SOFTWARE REQUIREMENT ANALYSIS

Software Requirement Analysis in the field of systems engineering and software engineering, encompasses those tasks that are used for determining the needs or conditions to meet for a new or altered product or project, taking account of the possibly conflicting requirements of the various stakeholders, analysing, documenting, validating and managing software or system requirements.

## 3.1 Feasibility Study

The main objective of the feasibility study is to treat the technical, operational and economic feasibility of developing the application. Feasibility is the determination of whether or not project is worth doing. The process followed in making this determination is called feasibility study. All systems are feasible, given unlimited resources and infinite time. The feasibility study to be conducted for this project involves:

- Technical Feasibility
- Operational Feasibility
- Economic Feasibility

## 3.1.1 Technical Feasibility

It is the measure of the specific technical solution and the availability of the technical resources and expertise. It is one of the first studies that must be conducted after a project has been identified. A technical study of feasibility is an assessment of the logistical aspects of business operation. This is considered with specifying equipment and software that will successful satisfy the user requirement. The technical needs of the system may vary considerably but should include the facility to produce outputs in a given time, response time under certain conditions and the ability to process a certain amount of transaction at a certain speed.

The proposed system is developed by using Juypter Notebook software. The Jupyter Notebook is an open-source web application that allows you to create and share documents that contain live code, equations, visualizations and narrative text. Uses include: data cleaning and transformation, numerical simulation, statistical modelling, data visualization, machine learning, and much more. The "notebook" term can

colloquially make reference to many different entities, mainly the Jupyter web application, Jupyter Python web server, or Jupyter document format depending on context. A Jupyter Notebook document is a JSON document, following a versioned schema, containing an ordered list of input/output cells which can contain code, text, mathematics, plots and rich media.

## 3.1.2 Operational Feasibility

Operational feasibility is mainly concerned with issues like whether the system will be used if it is developed and implemented, whether there will be resistance from the users which will affect the possible application benefits. It is the ability to utilize, support and perform the necessary tasks of a system or program. It includes everyone who creates, operates or uses the system. It is the measure of how well a proposed system solves the problem and takes advantages of the opportunities identified during the scope definition and problem analysis phases. This system helps in many ways. It reduces the burden of maintaining bulk of records of all the rainfall data. Maintenance of the project is also easy and understandable and no major training and new skills are required.

## 3.1.3 Economic Feasibility

Economic feasibility is the most frequently used method for evaluating the effectiveness of the new system. Economic feasibility is the measure of the cost effectiveness of an information system solution. Without a doubt, this measure is most often and important one of the three. Information systems are often viewed as capital investments for the business, and, as such, should be subjected to the same type of investment analyses as other capital investments.

Economic analysis is used for evaluating the effectiveness of the proposed system. In economic feasibility, the most important is cost-benefit analysis. This project is economical as it mainly depends on the software components which are freely available.