**SOFTWARE REQUIREMENT ANALYSIS**

System Analysis is a detailed study of the various operations performed by a system and their relationship within and outside the system .It is a systematic technique that defines goals and objectives the goal of the development is to deliver the system in the line with the user’s requirements, and analysis is this process.

System study has been conducted with the following objectives in mind: -

* + - Identify the client’s need.
    - Evaluate the system concept for feasibility.
    - Perform economical and technical analysis.
    - Allocate functional to hardware, software, people, database and other system elements
    - Establish cost and schedule constraints.
    - Both hardware and software expertise is required to successfully attain the objectives.

## Requirement Analysis

Information gathering is usually the first phase of the software development project. The purpose of this phase is to identify and document the exact requirements for the system. The user’s request identifies the need for a new information system and on investigation re-defined the new problem to be based on MIS, which supports management. The objective is to determine whether the request is valid and feasible before a recommendation is made to build a new or existing manual system continue

The major steps are –

* + - Defining the user requirements.
    - Studying the present system to verify the problem.
    - Defining the performance expected by the candidate to use requirement

#### Hardware Requirements

Processor : Intel Dual Core or More Processor Speed : 2 GHZ

RAM : 1 GB

Hard Disk : N/A

#### Tools and Technology Tools:

* + - * Windows-10
      * Python IDE/IDLE
      * Pycharm

#### Technology:

**Python** is an interpreter, high-level, general-purpose programming language. Created by Guido van Rossum and first released in 1991, Python has a design philosophy that emphasizes code readability, notably using significant whitespace. It provides constructs that enable clear programming on both small and large scales.

## Feasibility Study

Feasibility study is the process of determination of whether or not a project is worth doing. Feasibility studies are undertaken within tight time constraints and normally culminate in a written and oral feasibility report. I have taken a fixed time in feasibility study with my co-developer. The contents and recommendations of this feasibility study helped us as a sound basis for deciding how to precede the project. It helped in taking decisions such as which software to use, hardware combinations, etc.

#### Technical feasibility:

This is concerned with specifying equipment of software and hardware that will successfully satisfy the user requirements. The technical needs of the system may vary considerably, but might include:

* The facility to produce output in a given time.
* Response time under certain condition.
* Ability to produce a certain volume of transaction at a particular speed.
* In examining technical feasibility, configuration of the system is given more importance than the actual make of hardware. The configuration should give the complete picture about the system requirements. What speeds of input and output should be achieved at particular quality of printing.

According to the definition of technical feasibility the compatibility between front-end and back-end is very important. In our project the compatibility of both is very good. The speed of output is very good when we enter the data and click button then the response time is very fast and give result very quick. I never find difficulty when we use complex expression.

We use Python 3.6. The designing of GUI as well for internal working of the application:

* + Easy implementation of code.
  + Well define interface and Modules.
  + User friendly UI

At present scenario the no of Python versions are available but we have selected Python 3.6 because of the following number of reasons.

* + - It supports Google’s Speech Recognition System.
    - Easy to implement.
    - Vast collection of APIs

With the help of above support we remove defect of existing software. In future we can easily switch over any platform. To ensure that system does not halt in case of undesired situation or events. Problem effect of any module does not affect any module of the system. A change of hardware does not produce problem.

#### Operational Feasibility:

It is mainly related to human organizational and political aspects. The points to be considered are:

* + - * What changes will be brought with the system?
      * What organization structures are distributed structures are distributed.
      * What new skills will be required? Do the existing staff members have these skills? If not, can they be trained in due course of time?

At present stage all the work is done manually. So, throughput and response time is too much. Major problem is lack of security check that should have been applied. Finding out the detail regarding user’s request was very difficult, because data store was in different registers and different places. In case of any problem, no one can solve the problem until the person responsible is not present.

Current communication is entirely on telephonic conversation or personal meetings. Post computerization staff can interact using internet.

Now, we will explain the last point of operational feasibility i.e. handling and keeping of software , at every point of designing I will take care that menu options are not too complex and can be easily learned and required least amount of technical skills as operators are going to be from non-computers back ground.

#### Economic feasibility:

Economic analysis is the most frequently used technique for evaluating the effectiveness of a proposed system. More commonly known as cost/benefit analysis: the procedure is to determine the benefits and saving that are expected from a proposed system and compare them with cost. If benefits outweigh cost, a decision is taken to design and implement the system. Otherwise, further justification or alternative in the proposed system will have to be made if it is to have a chance of being approved. This is an ongoing effort that improves in accuracy at each phase of the system life cycle.

At present Company have ten systems with following configuration:

* + - * Ram 4 GB or above for fast execution and reliability
      * MOTHER Board x64 based PC
      * Color Monitor 14” and 17”
      * Hard Disk 100 GB
      * Hence the economic feasibility is very good.

## Analysis

System analysis is the first step towards the software building process. The purpose of system analysis is to understand the system requirements, identify the data, functional and behavioral requirements and building the models of the system for better understanding of the system.

In the process of system analysis one should first understand that, what the present system is how it works (i.e. processes). After analyzing these points we become able to identify the problems in the present system. Upon evaluating current problems and desired information (input and output to the system), the analyst looks towards one or more solutions. To begin with, the data objects, processing functions, and behavior of the system are defined in detail.

After this models, from three different aspects of the system-data, function and behavior. The models created during the system analysis process helps in better understanding of data and control flow, functional processing, operational behavioral and information content.