# Software Requirements Specification

## for

# <Bill management system>

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# INTRODUCTION

## 1.1. OVERVIEW:

Our project entitled "Bill Management System" aims is to generate electricity bill with all the charges. Manual system that is employed is extremely laborious and quite inadequate. It only makes the process more difficult and hard.

The aim of our project is to develop a system that is meant to partially computerize the work performed in the EBoard like generating monthly electricity bill, record of consuming unit of energy, store record of the customer and previous unpaid record.

### OBJECTIVE:

❖      Easy maintenance of database and overall project.

❖ Adopting security measures, by maintaining the login of username and password.

❖ Reducing data redundancy.

❖ Reduce workload of staff.

❖ Reduce the delay in processing time.

❖ Provide user-friendliness in all possible ways.

❖ Store data in a centralized location to reduce redundancy and increase consistency.

❖ Digitalization of bill management

❖ Digital management of customers records

❖ Reduce dependency on papers

## PURPOSE AND SCOPE:

The manual work processes was time consuming and hence slow. Following are the main drawbacks of the existing system:

❖ The basic and major drawbacks in the existing system are the speed of retrieval of data from files, which leads to delay.

❖ Maintenance of voluminous data is very cumbersome and laborious job.

❖ There are plenty of chances of duplicity of data and information.

❖ Updating is very tedious job.

❖ There is no central database from where one can get different statistical data at one place.

❖ Dependency on papers

The purpose of this project is to overcome these problems by automating the system. Automation of the data maintenance would reduce the manpower and will result in accurate data & above all increase the efficiency of the system.

# TECHNOLOGIES

- **React-js**

  React provides developers with a powerful tool for building dynamic and interactive user interfaces for web applications. It has a large and active community, extensive documentation, and a rich ecosystem of libraries and tools to support development.

- **Node.js**

  Node.js is an open-source, cross-platform JavaScript runtime environment that allows developers to run JavaScript code outside of a web browser. It uses the V8 JavaScript engine, which is the same engine used by Google Chrome. Node.js is commonly used for building server-side applications, but it can also be used for scripting and building command-line tools.

# SYSTEM ANALYSIS

## 3.1. SYSTEM ANALYSIS

System analysis is a process of gathering and interpreting facts, diagnosing problems and the information to recommend improvements on the system. It is a problem solving activity that requires intensive communication between the system users and system developers. System analysis or study is an important phase of any system development process. The system is studied to the minutest detail and analysed. The system analyst plays the role of the interrogator and dwells deep into the working of the present system. The system is viewed as a whole and the input to the system are identified. The outputs from the organizations are traced to the various processes. System analysis is concerned with becoming aware of the problem, identifying the relevant and decisional variables, analysing and synthesizing the various factors and determining an optimal or at least a satisfactory solution or program of action. A detailed study of the process must be made by various techniques like interviews, questionnaires etc. The data collected by these sources must be scrutinized to arrive to a conclusion. The conclusion is an understanding of how the system functions. This system is called the existing system. Now the existing system is subjected to close study and problem areas are identified. The designer now functions as a problem solver and tries to sort out the difficulties that the enterprise faces. The solutions are given as proposals. The proposal is then weighed with the existing system analytically and the best one is selected. The proposal is presented to the user for an endorsement by the user. The proposal is reviewed on user request and suitable changes are made. This is loop that ends as soon as the user is satisfied with proposal. Preliminary study is the process of gathering and interpreting facts, using the information for further studies on the system. Preliminary study is problem solving activity that requires intensive communication between the system users and system developers. It does various feasibility studies. In these studies a rough figure of the system activities can be obtained, from which the decision about the strategies to be followed for effective system study and analysis can be taken.

## 3.2. EXIXTING SYSTEM

In the existing system the bills are manages manually but in proposed system we have to computerize the bill management using this application.

- ❖ Lack of security of data.

- ❖ More man power.

- ❖ Time consuming.

- ❖ Consumes large volume of pare work.

- ❖ Needs manual calculations.

- ❖ No direct role for the higher officials

- ❖ Dependency on papers.

## 3.2 Proposed System

The aim of proposed system is to develop a system of improved facilities. The proposed system can overcome all the limitations of the existing system. The system provides proper security and reduces the manual work.

❖ Security of data.

❖ Ensure data accuracy's.

❖ Proper control of the higher officials.

❖ Minimize manual data entry.

❖ Minimum time needed for the various processing.

❖ Greater efficiency.

❖ Better service.

❖ User friendliness and interactive.

## 3.3. FEASIBILITY STUDY

Feasibility study is made to see if the project on completion will serve the purpose of the organization for the amount of work, effort and the time that spend on it. Feasibility study lets the developer foresee the future of the project and the usefulness. A feasibility study of a system proposal is according to its workability, which is the impact on the organization, ability to meet their user needs and effective use of resources. Thus when a new application is proposed it normally goes through a feasibility study .The document provide the feasibility of the project that is being designed and lists various areas that were considered very carefully during the feasibility study of this project such as Technical, Economic and Operational feasibilities. The following are its features:

### 3.3.1. Technical Feasibility

The system must be evaluated from the technical point of view first. The assessment of this feasibility must be based on an outline design of the system requirement in the terms of input, output, programs and procedures. Having identified an outline system, the investigation must go on to suggest the type of equipment, required method developing the system, of running the system once it has been designed.

### 3.3.2. Economic Feasibility

The developing system must be justified by cost and benefit. Criteria to ensure that effort is concentrated on project, which will give best, return at the earliest. One of the factors, which affect the development of a new system, is the cost it would require.

The following are some of the important financial questions asked during preliminary investigation:

❖ The costs conduct a full system investigation.

❖ The cost of the hardware and software.

❖ The benefits in the form of reduced costs or fewer costly errors.

**3.1.1 Operational Feasibility**

In this feasibility study it is determined whether there is need of well qualified operator or simple user. Is there need to train the operator or not? This project is supporting the Graphical User Interface; hence operating this project is so simple. Even a person who has a little knowledge of computer can easily handle this well. There is no need of trained operator.

## 3.1. Hardware Requirements

| Name of Component | Specification |
|---|---|
| Processor | 1.6 GHz or faster processor |
| RAM | 2 GB of RAM (2.5 GB if running on a virtual machine) |
| Required hard disk drive | 5400 RPM hard disk drive |
| Required hard disk space | 10 GB of available hard disk space |

## 3.1. Software Requirements

| Name of Component | Specification |
|---|---|
| Operating System | Windows 7 and above |
| Front End | html,react.js |
| Back End | Node js |
| Database | My SQL Server 2021 |
| Web Server | IIS Server |

## 3.7 Conceptual Models

Conceptual models differ in the degrees of freedom given to the user in accomplishing tasks and achieving goals. In some cases, the task flow is highly structured and linear, thus giving the user less degrees of freedom in terms of alternative ways of the interaction. In other cases, the task flow is unstructured, thus giving the user more degree of freedom in terms of alternatives in how to perform the interaction.

# SYSTEM DESIGN

It is a process of planning a new business system or replacing an existing system by defining its components or modules to satisfy the specific requirements. Before planning, you need to understand the old system thoroughly and determine how computers can best be used in order to operate efficiently.

System Design focuses on how to accomplish the objective of the system. It

mainly focuses on:

❖ Systems

❖ Processes

❖ Technology

## 4.1. Basic Modules:

In this society helping system there are two types of user one is **Admin and department employee**.

**Functionality of Admin:**

Admin can manage all the system by login with his username and password.
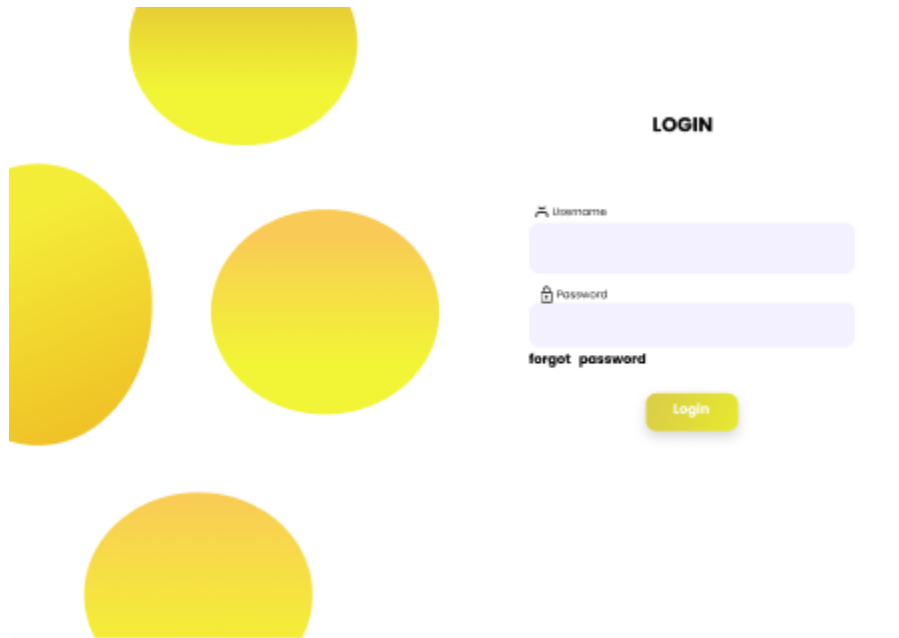
Admin manages all the functionalities for managing tariff rates etc. Admin can also add other department users, delete department users, and can view department users. Admin can also add customers, delete customers or can view customers. Admin can also generate bill.

**Functionality of Department Users of the Discoms:**

In our Electricity Bill Management System admin can add department user. Department users can login into their system by using valid credentials. After logging in they can perform various activities like adding customers, viewing customer's records or generating electricity bill.

## 3.11. Ui Design

### Login page:
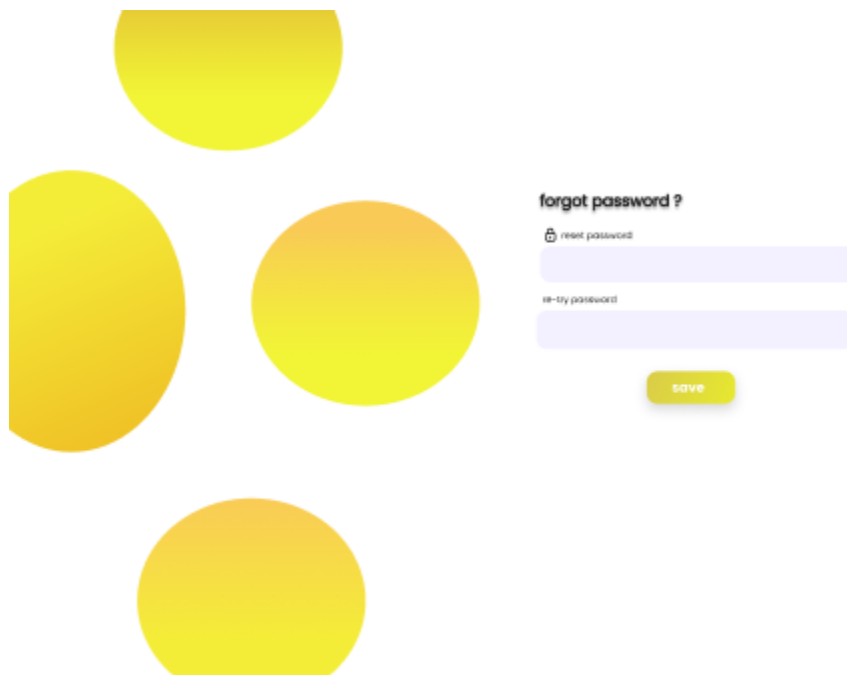
**LOGIN**

👤 Username

🔒 Password

**forgot password**

Login

### Forgot password

forgot password ?

🔒 reset password

re-try password

save

**Add bill**

## Bill management system

Name

Total amount

mobile number

Add

**Bill Book**

## Bill book

| name | Total amount | mobile number | | |
|------|--------------|---------------|--------|--------|
| | | | update | Delete |
| | | | update | Delete |
| | | | update | Delete |
| | | | update | Delete |
| | | | update | Delete |
| | | | update | Delete |