Employee Management System

Software Requirement Specification

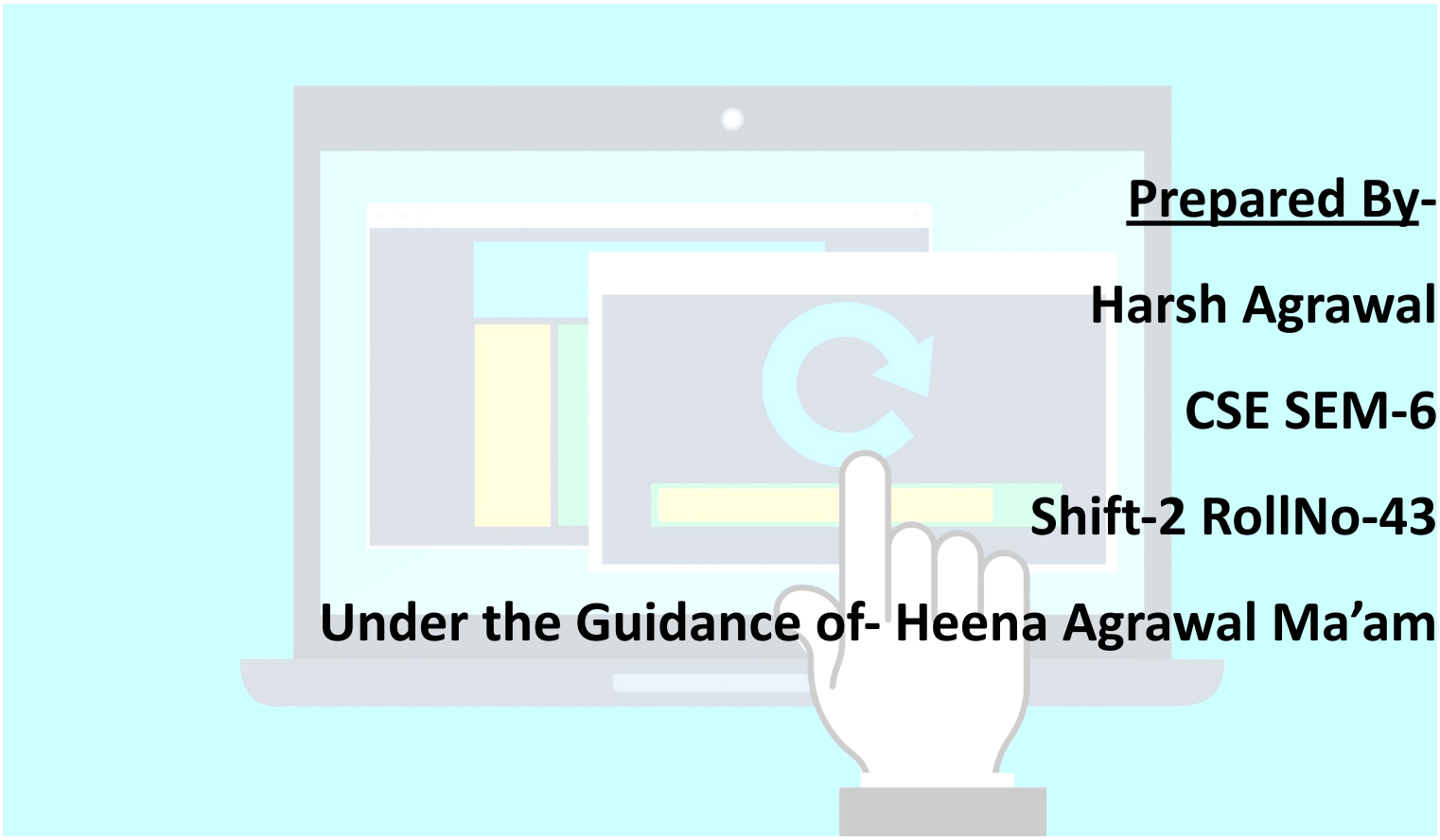

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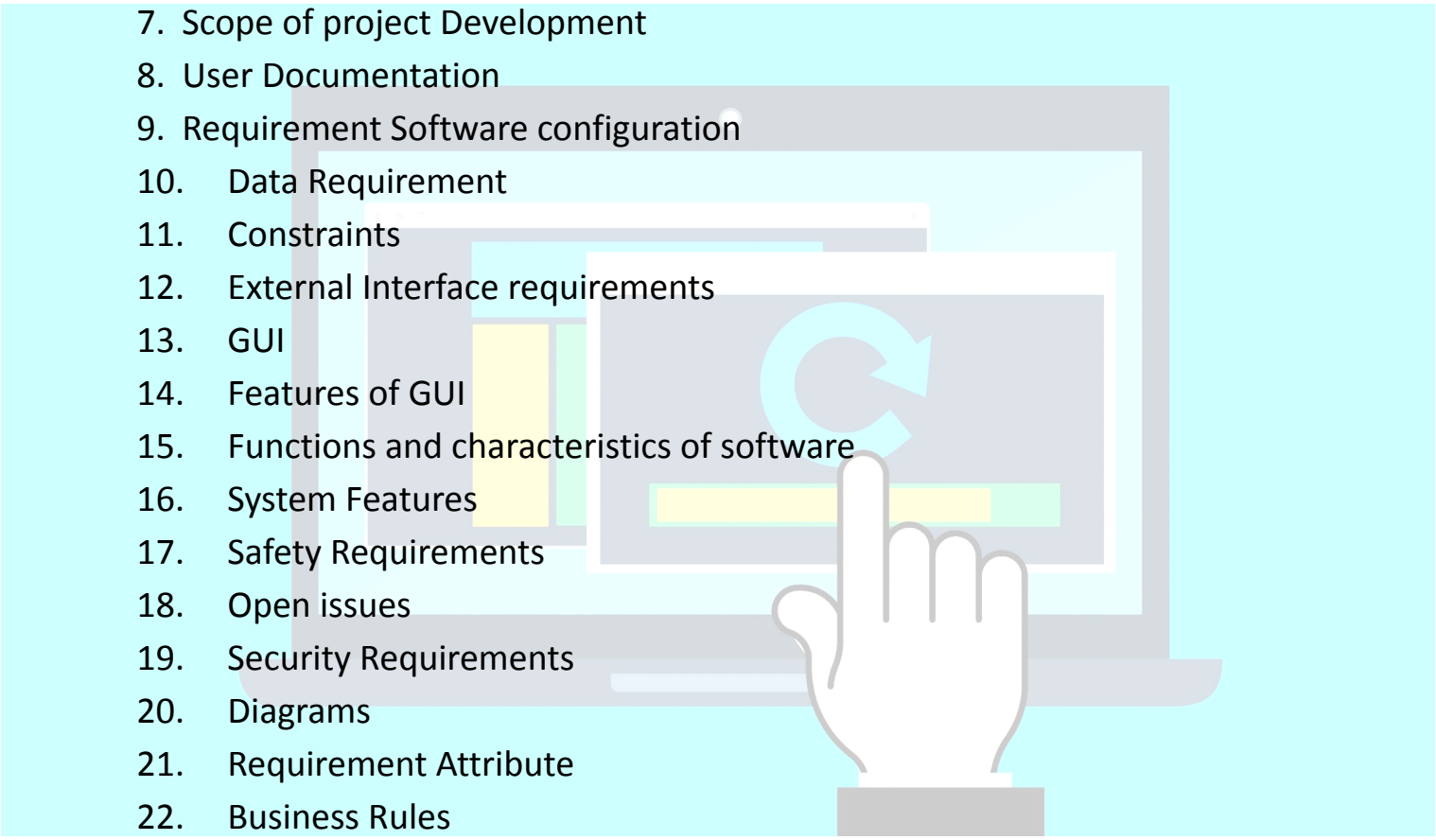
Table of Contents



Software requirement Specification for Employee Management System

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Introduction → Purpose The main objective of this document is to illustrate the requirements of the project Employee Management system. The document gives the detailed description of the both functional and non-functional requirements proposed by the client. The purpose of this project is to provide a friendly environment to maintain the details of the Employees and manage the complete working of the organization. The application is created for the smooth working and functioning of a company where there are a lot of people working and managing people and different tasks is a major work. The main purpose of this project is to maintain an easy circulation system using computers and to provide different reports. This project describes the hardware and software interface requirements using ER diagrams and UML diagrams.

- Employee management is **a process that helps your workers perform at their best and achieve your business goals**. It's a holistic process that covers almost everything related to human resources such as new employee recruitment, payroll management, performance management and more.
- An employee management system is **a software that helps your employees to give their best efforts every day to achieve the goals of your organization**. It guides and manages employees' efforts in the right direction. It also securely stores and manages personal and other work-related details for your employees.
- EMS **helps to eliminate the manual process and saves a lot of time and money**. This system maintains the professional and personal details of the employees and the company in a safe manner. The employee management system lowers the burden and the pressure on HRs and the business managers.
- An employee management system is a software that **helps your employees to give their best efforts every day to achieve the goals of your organization**. It guides and manages employees' efforts in the right direction. It also securely stores and manages personal and other work-related details for your employees.
- The major limitations of the project are as follows: **Due to the constraint of resources and time, the size of the project could not be increased**. The project has been developed through utilizing the records of the employees and other information available at certain organizations.

Features→

1. Encourage Learning Opportunities. ...
2. Provide Employees with Technology. ...
3. Emphasize Company Culture. ...

4. Strengthen Communication Protocols. ...
5. Identify and Align Goals with Performance.

General Description⟶ The project is created for smooth functioning of the employee management system in any organization. There are three levels of users in the organization that are Super Admin, Manager, Employee. There is one more user of the application which is called System user. He ensures the application is working smoothly and takes care of all the technical aspects of the software. The group of users control each other and have features based on a certain level according to their priority.

System interfaces⟶ The Scheduler system is a self contained system, relying on very little in the way of external software interfaces. However, the system will require interfaces with the installed computer's hardware. The system is to be a web-enabled system, meaning that all user interaction is done through a web browser. The System interfaces required on the system server are the following:

- Network interface to a network with an internet connection
- Database connection to the mySQL database containing user and schedule data

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User interfaces

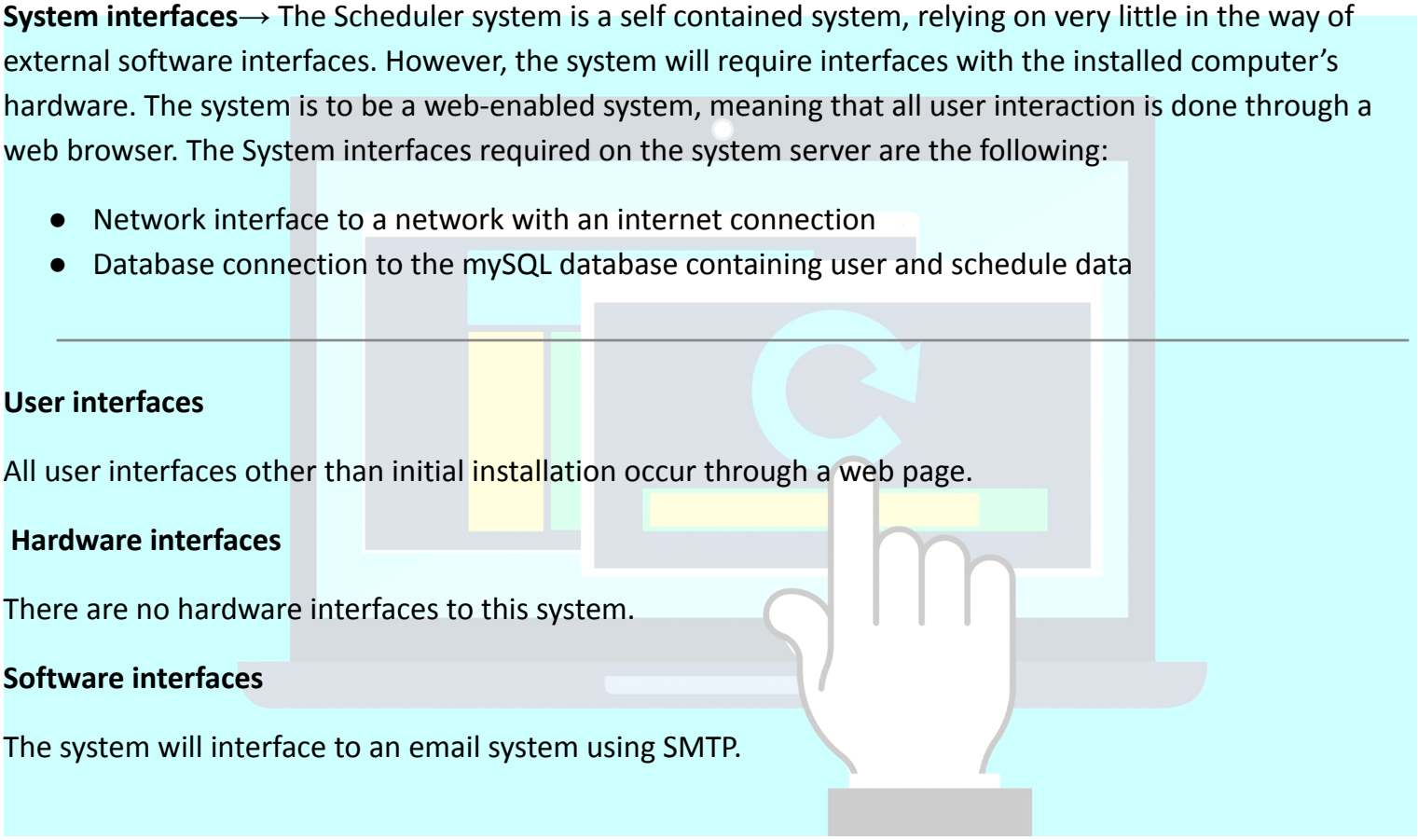
All user interfaces other than initial installation occur through a web page.

Hardware interfaces

There are no hardware interfaces to this system.

Software interfaces

The system will interface to an email system using SMTP.



Scope of project development

Employee Management System is basically updating the manual system (Application) into an internet-based application so that the users can create their account, update their profile, track attendance, and apply for leave and many more. The project is specifically designed for the use of Employees, Managers and Super Admin.

In the organization the hierarchy is maintained as Super Admin who manage the managers and the employees. Managers can manage the employees and a simple employee is the lowest position.

The product will work as a complete user interface for Employee management. The Application could be proven very useful for several organizations in terms of both the management and technical aspect. Security rules and requirements are always followed in terms of both where one has to keep his/her individual details and when certain features require certain privileges.

The project can be easily implemented under various situations. We can add new features as and when we require, making reusability possible as there is flexibility in all the modules. The language used for developing the project is Java as it is quite advantageous than other languages in terms of performance, tools available, cross platform compatibility, libraries, cost (freely available), and development process.

The project works in the long run and modifications can be done as per the demand and need of the time. It is easy to use, manage and maintain.

User Documentation→ Users of the software would be provided with the documentation of the software explaining each and every functionality of the software in complete detail. There would be several tutorials and user manuals also provided for understanding. Tutorials would be in the form of demo video. One can go through all this provided material for complete reference.

Requirement Software Configuration:-

This software package is developed using java as front end which is supported by sun micro system. Microsoft SQL Server as the back end to store the database.

Operating System: Windows NT, Windows 98, Windows XP.

Language: Java Runtime Environment, Net beans 7.0.1 (front end) Database: MS SQL Server (back end)

Hardware Configuration:- Processor: Pentium(R)Dual-core CPU Hard Disk: 40GB RAM: 256 MB or more

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Data Requirement

The input requirement is creating the account and adding the profile details by the user. The inputs consist of the query to the database and the output consists of the solutions for the query. The output also includes the user receiving the details of their accounts. The database would be updated as per the changes done by the respective user. The queries are fired by the user like updating their account, adding

their attendance, applying for the leave, creating, joining and leaving groups, managing tasks etc. Now the output will be visible when the user requests the server to get details of their account in the form of time, date and status updated etc.

Constraints→ There are a number of constraints which the system must abide by during development. The system must be developed within their bounds. These constraints dictate a number of the functional and nonfunctional requirements specified by this document. Others are because of a requirement specified to us by our customer. All are important to be aware of during the implementation of the software system.

- System is to be developed for distributed use as a web application. This will limit the ability for real time updates to the system.
- System is to be developed in Java through Servelets and JSP pages.
- Data must be stored in a relational database for quick queries and storage.
- Passwords must be sent and stored in encrypted form.
- Some users are authorized users while some are non-authorized users. Non-authorized users can not see other user's preference and exclusion sets.
- System must be robust enough to handle virtual meetings through teleconferencing, etc.
- System must handle rescheduling meetings with no outside input from initiator unless conflict arises
- System must be able to send email notifications to any common email server promptly and correctly
- Keep user overhead to an absolute minimum. Anywhere the system can handle a decision itself, it must do so.
- Server-Client communication must be done over TCP connections
- Meetings can be rescheduled up to 24hrs prior to their current start time.

External Interface Requirement

GUI

The software provides a good graphical interface for the user and the administrator can operate on the system, performing the required task such as create, update, etc. It allows users to view quick reports like

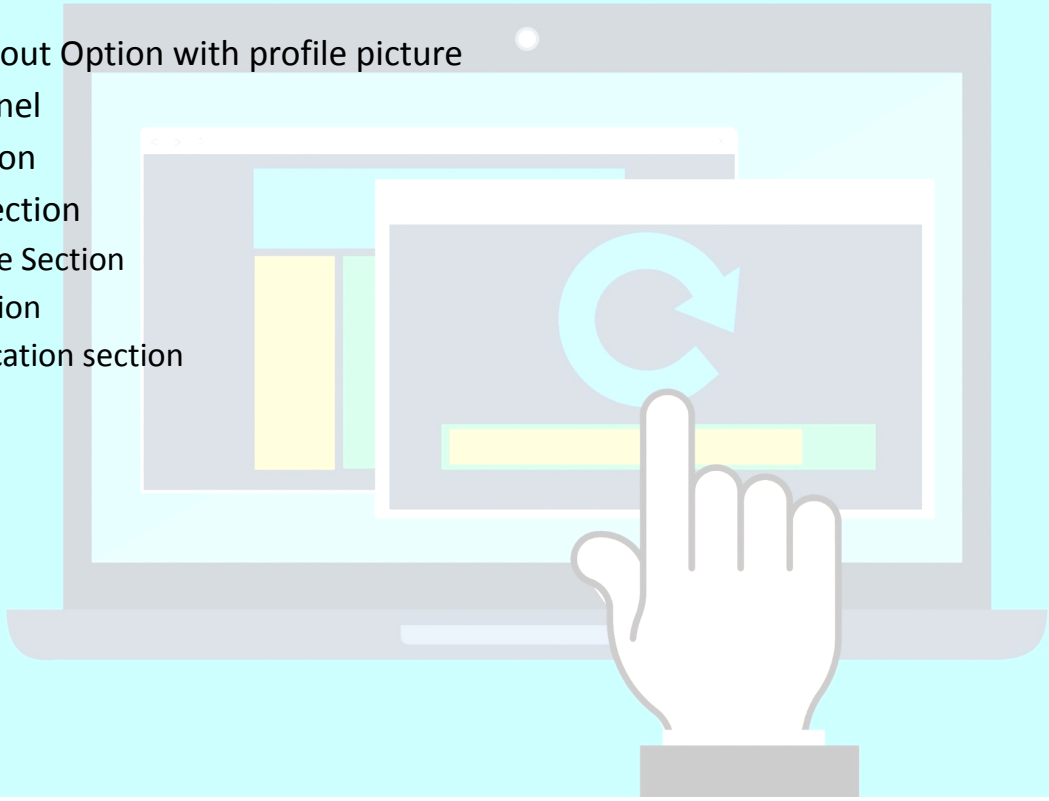
tasks completed/pending in between particular times. It provides stock verification and search facility based on different criteria.

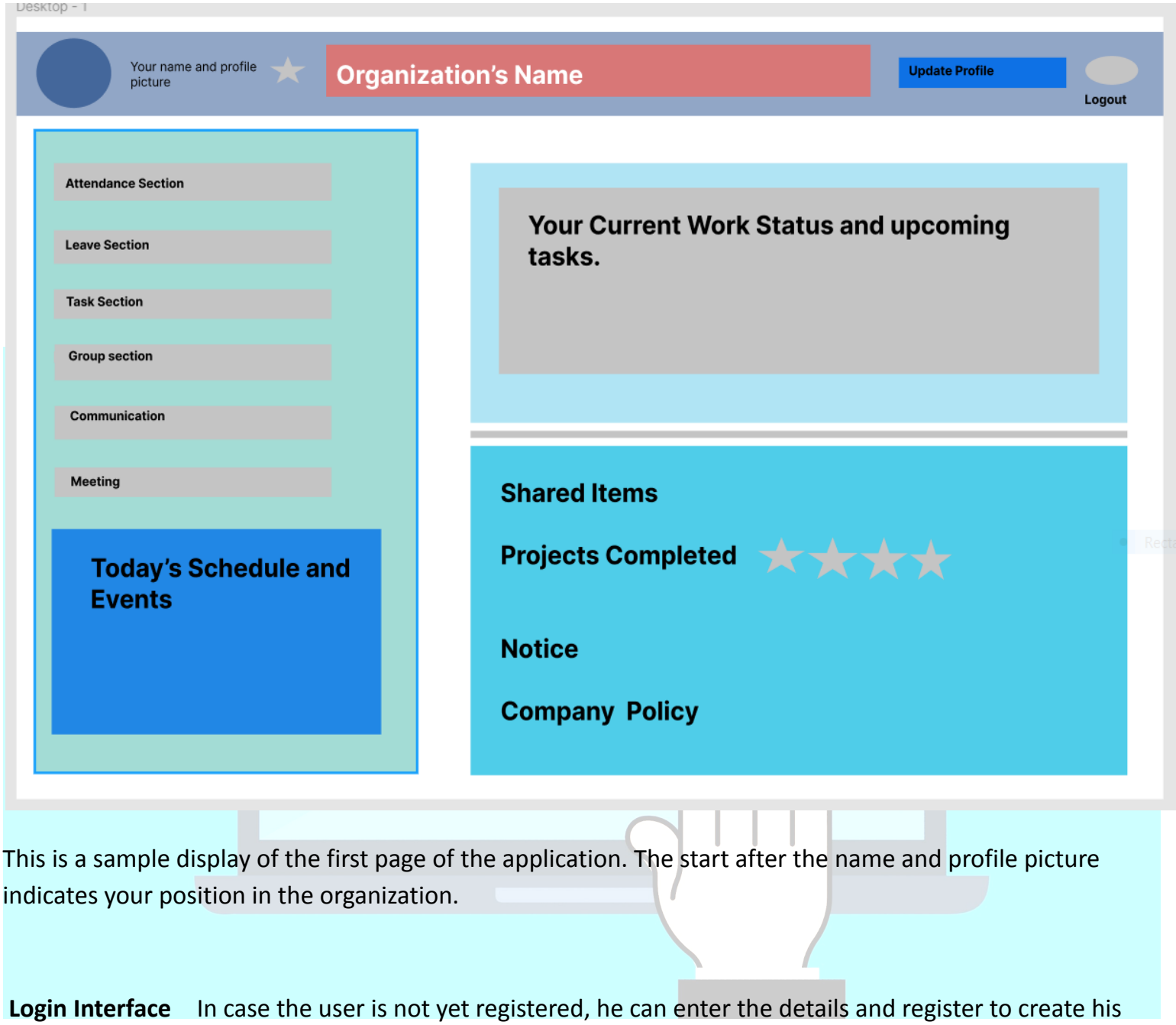
The user interface is customizable by the administrator. All the modules provided with the software fit into this graphical user interface and accomplish the standard defined. The design is simple and all the different interfaces follow a standard.

The user interface is able to interact with the user management module and a part of the interface must be dedicated to the login/logout module.

On the GUL we have several features

- Login/Logout Option with profile picture
- Profile Panel
- Task Section
- Groups Section
- Attendance Section
- Leave section
- Communication section





This is a sample display of the first page of the application. The start after the name and profile picture indicates your position in the organization.

Login Interface In case the user is not yet registered, he can enter the details and register to create his account. Once his account is created he can 'Login' which asks the user to type his username and password. If the user entered either his username or password incorrectly then an error message appears.

Updating Every user of the application can update his profile but before updating the profile the user has to enter the current details of the account and has to verify it. Now the user can set up a new username, password and profile picture. Updating profile picture has two options i.e select from camera and upload from the device.

Adding attendance Employees can only view their attendance and can give a remark if there is any. Managers can track the attendance of the employee and can update it.

Creating groups Super Admin and managers can create groups of their juniors assign them tasks and deadline. Employees will receive group joining notification and they can join and leave the group anytime.

Applying and managing Leave Employees can just apply for leave and can wait for any response if added. Managers and system admin can view for all the applied leaves they can by themselves approve or reject the leave and the concerned user would be notified accordingly.

Communication All the users of the application can communicate with an7y person in the organization. They can share messages and data with each other by using the application itself.

Schedule and Update tasks Managers and super admin can schedule tasks for their juniors. They can schedule a task with a definition and a deadline. After this they can add the required people. Employees would be notified accordingly. Employees can view the task and update their status of the task accomplished.

The system should be customizable to professional as well as private meetings - these two modes of use are characterized by different restrictions on the time periods that may be allocated (e.g., meetings during office hours, private activities during leisure time). The system shall allow the initiator to set a time of day range that is allowed for the meeting start time. The default shall be 9am - 5pm. Traces from System Non-functional Requirements lines: 82-84 Functional Dependency Diagram: Initiate Meeting.

There shall be an administrative user account, which shall be authorized to add and remove and modify user accounts, rooms, equipment, and virtual meeting characteristics from the system.

After consultation with the domain rep we decided these are the functions that should be performed by an administrator.

Functions and Characteristics of the Software⟶ There are several characteristics and features of software which are applicable to certain actors based on their priority level and use. Here each and every feature is directly or indirectly related to every actor in the software or we can say that the activity of any actor affects or influences the activity of another actor.

Use case 1-> Login to the application and update the profile.

Goal in Context⟶ This use case is applicable to each and every user of the application irrespective of priority. Every actor can successfully login to the system once he is registered with the organization, to add

to this he has the option to update his own profile details. Updating a profile includes changing the username and Password and also updating the profile picture.

Level → Primary Task.

Preconditions→ The user should be successfully registered with the organization. For updating the profile details the user has to enter first the current details and verify it. If the entered details are verified successfully then the user can update his profile.

For setting and saving up the password the user has to enter the password for two times. If both the passwords match then the password would be set up successfully. For updating the profile picture the user has two options to choose the picture from, the user can choose the picture from his device or else he can open his system camera and capture the image at runtime and would be updated further.

Success end condition→ Profile updated successfully.

Primary Actor→ All Users

Trigger→ User clicks on update profile button.

Use case 2→ Enter the attendance/Verify the Attendance

Goal in Context→All the users of the applications can verify their attendance and check if it is entered correctly. If they feel they can put any remark there. Managers and Super Admin can mark the attendance of their juniors. They can mark the attendance as present or absent as per their choice but the corresponding changes would be reflected to the particular user.

Success End Condition→ Attendance Marked Successfully/ Review Entered

Primary Actor→ Managers and super Admin for marking the attendance and all actors for viewing attendance and entering their review.

Trigger→ User clicks to the attendance section and selects the respective available option.

Use case 3→ Applying for leave/Managing the Leave

Goal in context→ All the users in the application can apply for leave and wait till the response comes from a higher level. Employees can only apply for leave and check whether the leave is approved or rejected. Managers can manage leave. They can approve or reject any leave if they want and the corresponding changes would be reflected to the respective user.

Success End Condition→ Successfully applied for leave/Leave Approved/Leave rejected

Primary Actor→ All the users for applying leave/ Managers and Super Admin for approving or rejecting the leave.

Trigger→ User clicks to the leave section and then selects the most appropriate option among the available options.

Use case 4→Creating and joining groups.

Goal in Context→ Managers and the Super Admin of the applications can create several groups of different users, assign them a definition and send the invitation to the respective people for joining the group. Employees receive the invitation and they can join and leave the group as per their choice.

Success End Condition→ Group Created Successfully/Invitation Sent/ Group Joined/ Group left

Primary Actor→ Manager and Super Admin for creating and adding people to the group and employees and all users for joining and leaving the group

Trigger→ Selecting the group section.

Use case 5→Managing and updating the tasks

Goal in context→Managers and super admin of the system can set up the tasks in the application to be done for several employees. Employees receive the tasks. They have to complete the tasks and update the status of the task in the respective task section.

Success end condition→ Task Updated/ Task Created/ Task Scheduled

Primary Actor→ Managers and Super admin can Schedule the task and Employees can update the task and save their status on a regular basis

Trigger→ Selecting The task section→

There are still several more use cases like communication, Scheduling meetings, share data etc.

System Features

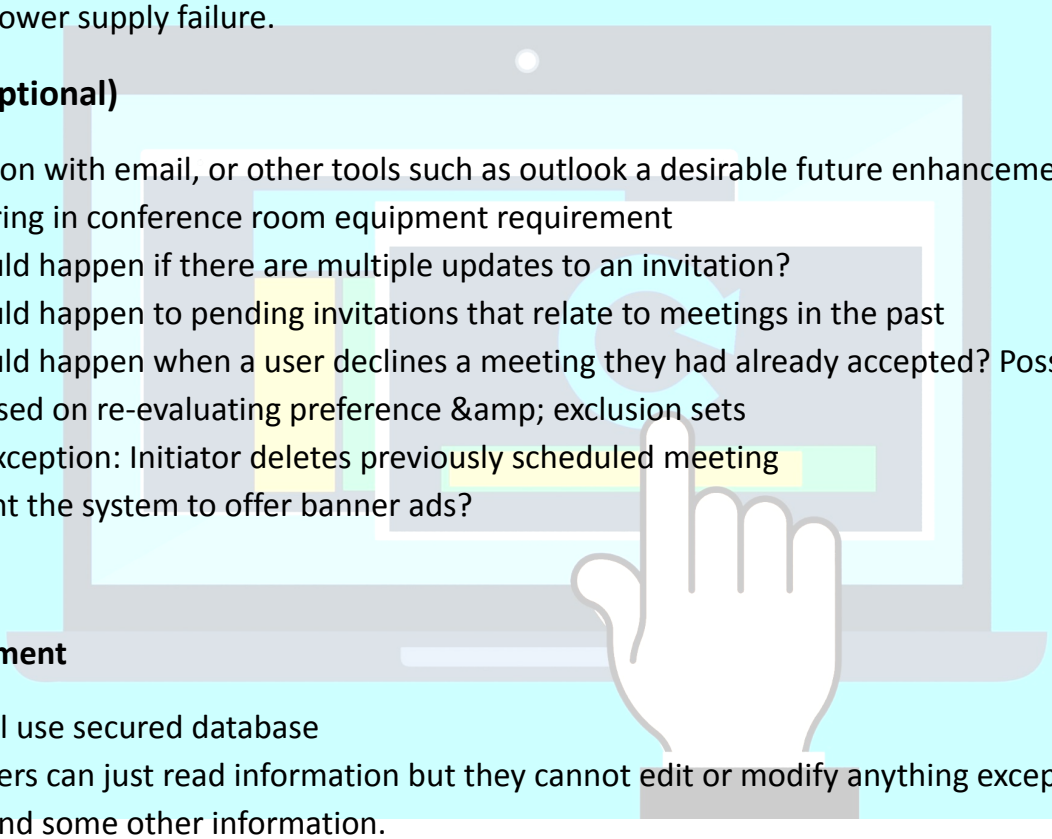
- The users of the system should be provided the surety that their account is secure. This is possible by providing user authentication and validation of members using their unique member ID Proper monitoring by the administrator which includes updating account status, showing a popup if the member attempts to access any feature disabled for a certain id.
- Verification is always enabled and monitored if a certain feature is available with the particular id.

Safety requirement

The database may get crashed at any certain time due to virus or operating system failure. Therefore, it is required to take the database backup so that the database is not lost. Proper UPS/inverter facility should be there in case of power supply failure.

OPEN ISSUES (optional)

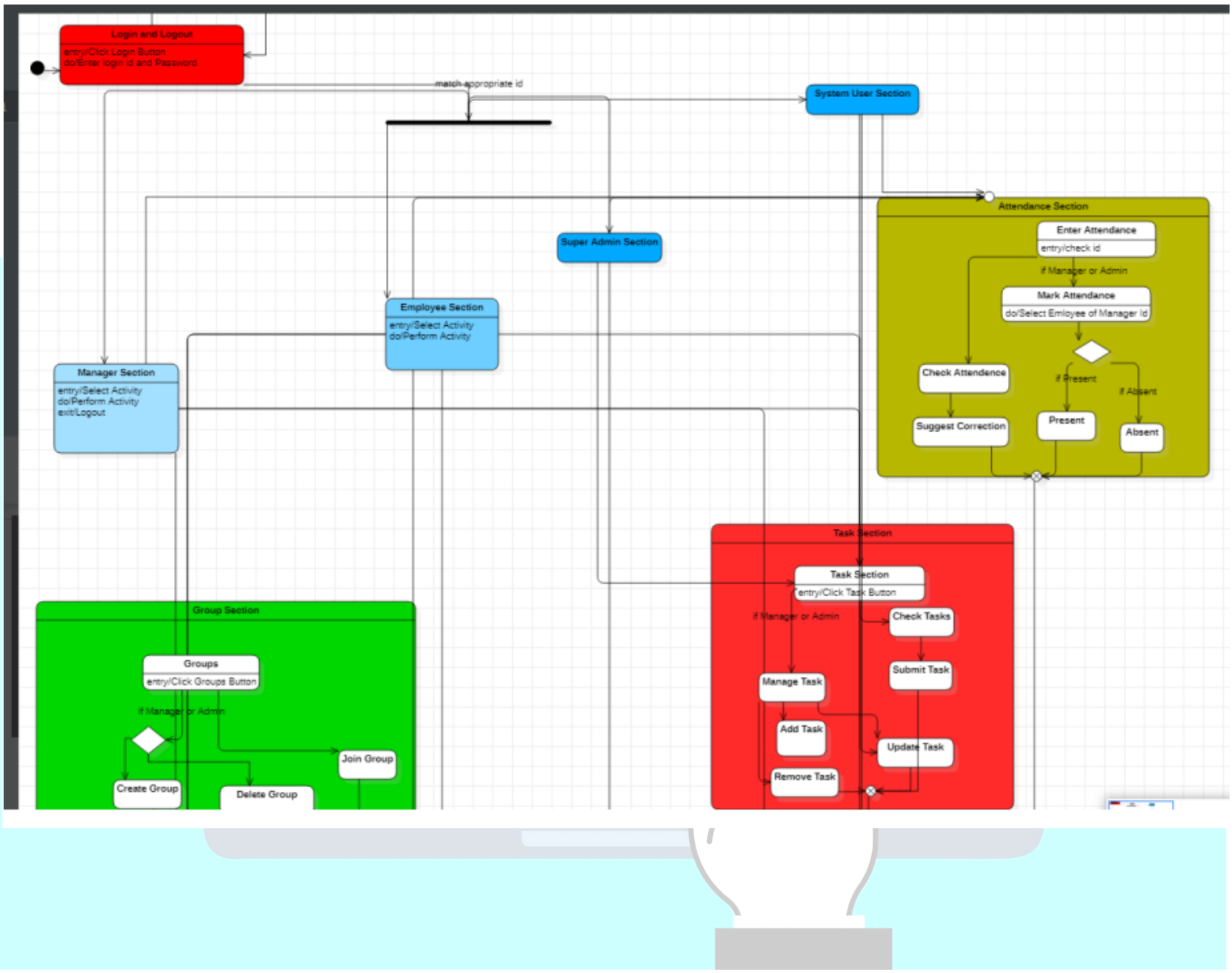
- Is integration with email, or other tools such as outlook a desirable future enhancement?
- Need to bring in conference room equipment requirement
- What should happen if there are multiple updates to an invitation?
- What should happen to pending invitations that relate to meetings in the past
- What should happen when a user declines a meeting they had already accepted? Possible approach: resolve based on re-evaluating preference & exclusion sets
- Another exception: Initiator deletes previously scheduled meeting
- Do we want the system to offer banner ads?

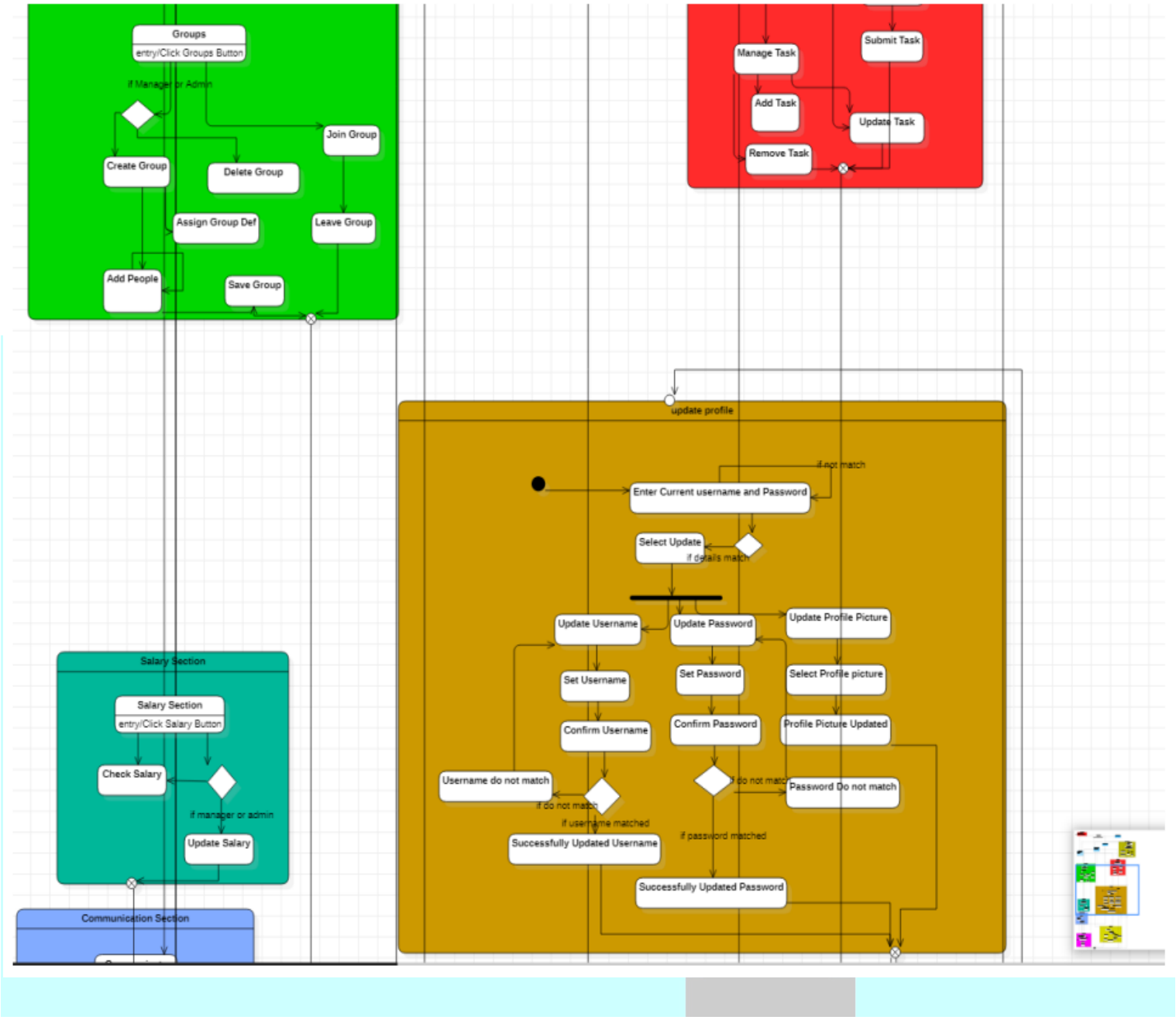


Security Requirement

- System will use secured database
- Normal users can just read information but they cannot edit or modify anything except their personal and some other information.
- System will have different types of users and every user has access constraints
- Proper user authentication should be provided
- No one should be able to hack users' password
- There should be separate accounts for admin and members such that no member can access the database and only admin has the rights to update the database.

Diagrams⟶ Consider the following sequence diagram which demonstrates the steps in a proper sequence of the complete procedure of execution of each feature of the software.





Requirement attributes

The Quality of the database is maintained in such a way so that it can be very user friendly to all the users of the database. The user is able to easily download and install the system.

Business Rules

A business rule is anything that captures and implements business policies and practices. A rule can enforce business policy, make a decision, or infer new data from existing data.This includes the rules and regulations that the System users should abide by. This includes the cost of the project and the discount offers provided. The users should avoid illegal rules and protocols. Neither the admin nor any member should cross the rules and regulations.

User requirements→

There are very few user requirements for using the application. It is assumed that the user has the basic understanding of the computer systems, Internet browsing and knows his purpose in the particular organizations. The user should know the complete working of the application and should ensure that all the working of the application is done in a smooth and easy going way. For the better understanding of the user several tutorial videos and user reference manuals would be provided for guidance.

The admin provides certain facilities to the users in the form of:-

- Backup and Recovery
- Forgot Password
- Data migration i.e. whenever user registers for the first time then the data is stored in the server
- Data replication i.e. if the data is lost in one branch, it is still stored with the server
- Auto Recovery i.e. frequently auto saving the information
- Maintaining files i.e. File Organization The server must be maintained regularly and it has to be updated from time to time

Other Requirements→

Data and Category Requirement→ The Complete data of the organization is stored in the database of the application, where the access to the data has certain limitations and users of the application can access the data based on certain privileges and permissions. There are four categories of the users for the application which are Super Admin , who is the head and the super user of the application. He has the highest level of privileges and can have access to all the features of the application. He can also control all the juniors working under him. Next comes the manager who is controlling all the employees of the department. He has certain privileges and restrictions according to his priority. The last ones are the employees of the

organization who are at the lowest level in the organization with very few features.The categories and the data related to each category should be coded in the particular format.

The End!!