Software Requirement Specification

For

Office management Software

version 1.0

Prepared By

Name	**:**	Md. Ziaul Karim
ID	**:**	171-35-1883
Section	**:**	E

Department of Software Engineering,

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Document Submitted to

Md. Shohel Arman

Lecturer, Department of Software Engineering.

Daffodil International University.

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Signature

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1. Introduction

The SRS provides a sophisticated overview of the system that is developed through the entire course of the time. The idea is to provide a documented version of the development through which it can be defined how the system was developed, how it works and what were the initial ideas and why they were taken out etc. The goal is to gather requirements (functional and non-functional), analyze them in and out, and providing an insight of the **Office Management Software.**

1.1 Purpose

The purpose of the document is to make sure the analyzation of the idea and collecting requirements accordingly. Regarding the Employee's needs and the system of a particular office's system the requirements could be changed and updated through the course of the time. The job is to make sure that they are sorted out and documented. Nonetheless, it helps any designer and developer to assist in software delivery lifecycle (SDLC) processes.

1.2 Project Scope

Primary scope of the project is to establish a network within the employees and the office's management. It focuses mainly on the accounts, projects and employees personal informations, which allows the employees to be connected with the accounts section and project informations directly online, which will be quick responsive so that they can put it to daily use. Other additional features will also be in the system. But the main goal is to provide them a track of their salary and work.

1.3 Glossary

This subsection contains all the acronyms and abbreviation, terms used in the entire document.

- **OMS –** Office Management Software
- **SDLC –** Software Development Lifecycle
- **SRS –** Software Requirement Specification
- **GUI/UI –** Graphical User Interface/ User Interface.
- **OOP –** Object Oriented Programming.

1.4 References

IEEE. *IEEE Std 830-1998 IEEE Recommended Practice for Software Requirements Specifications.* IEEE Computer Society, 1998.

1.5 Overview

The system is designed to a facility for the Employees of the an office, allowing them to be connected with their office's accounting section, project management sector and also some additional facilities such as mailings, messaging and notifications related to their official works. They can also keep track of their work progress, important events, salary information and their holidays and day-offs taken by them. It's almost a social media type facility among the employees of the office, allowing them to establish an internal network. The rest of the SRS examines the specifications of **OMS** in detail. Section 2 of the SRS presents the general factors that affect the **OMS** system user role such as user class and characteristics and section 3 of this SRS presents the overall design and implementation techniques of this system.

2. User cases and Characteristics

There are three types of users in this system. The first two are, executive members (the accountants) and general members (the employees), the only distinction between them is that executive member are allowed to see the preference and exclusion sets of other users, such as they can access a general member's personal informations. It is the third type of user, the administrator, who is able to initially setup the system, delete user's accounts, and set their authorization level and also send out notifications.

Executive Users/Accountants
They are usually the accountants or account sections admins. They usually carry out the instructions and notification sectors related to the employees, such as providing them the informations about their salary, requests about their personal accountings. It is also their job to notify them about their working status, project progression and holiday information. Overall these members handle all the calculative informations.

General Users/Employees
These type of users are usually The Office Employees. They can access the application through the UI and access the systems options such as Mail, Personal Profile, Salary Informations, Holidays, Transportation Informations, Notifications, Messaging, Cloud storage, Notices and Work Progress Graphs or percentage.

Administrator
These type of members are the ones that handles the informative sectors that executive members don't. Such as posting notices, deletion of accounts, handling the office's archive, maintenance of the software and scheduling informations etc. They usually work as the authority's representatives.

3. Design and Implementation Constraints

Design and implementation constraints are those that we have used to implement this project make successful. It also describes the tool that enables developers and testers to view and interact with the user interface (UI) elements of this application.

3.1 User Interface Technology

User interface (UI) is everything designed into a system view that which person's associates with this system may like the interface of this system.

3.1.1. Programming language

For this system development we will use Java. An OOP based language a widely used and is a general purpose programming language and class based. It is designed to run on any platform there is. It's also called **WORA** (Write Once, Run Anywhere). Which is good for the development of any software project, as it is runnable in any platform.

3.1.2. SQL

SQL stands for Structured Query Language. SQL is used to communicate with a database. SQL statements are used to perform tasks such as update data on a database, or retrieve data from a database. We will use MySQL for this project. The reasons behind choosing this database system are-

- Security.
- System Performance diagnostics.
- Data Calculations.
- Data Storage.

3.1.3 Java Swing (JFrame)

A Frame is a top-level window with a title and a border. A frame, implemented as an instance of the **JFrame** class, is a window that has decorations such as a border, a title, and supports button components that close or iconify the window. Applications with a GUI usually include at least one frame. We are going to use this technology from **NetBeans** which is an integrated development environment (IDE) for Java.

3.1.4. Prototyping Tool

Justinmind (usually goes by - Just in Mind) is a prototyping tool that we are going to use to develop a prototype design for the software to better understand the user's experience, expectations and needs from the software. So that when the software is implemented and ready to use, there is less chances of problems to face with it.

4. Use Case Diagram

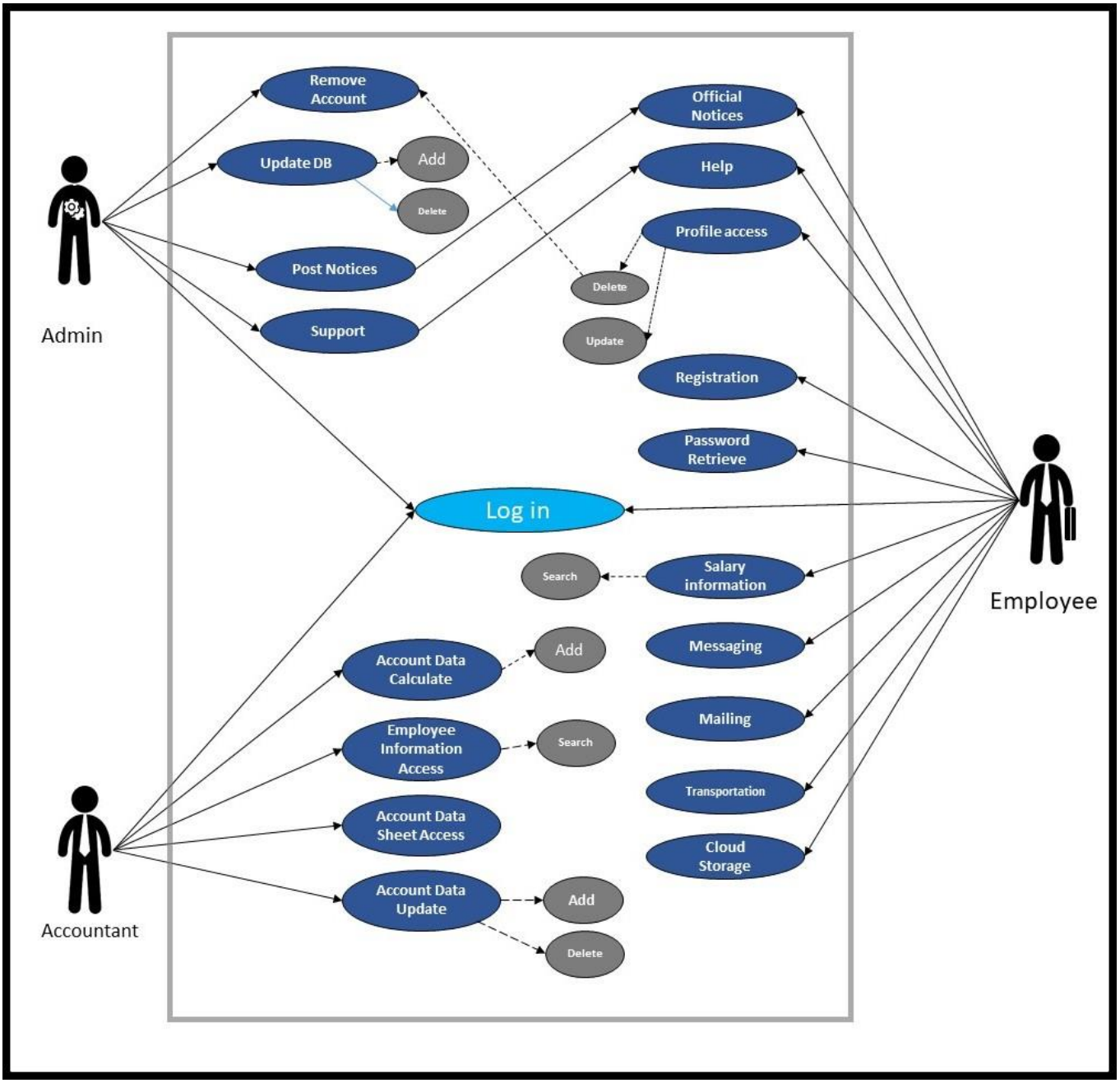

Fig 1.1: *Use case Diagram*

5. Requirement Specification:

A complete requirement specification based on the elicitation process is described in this section.

5.1. Functional Requirements (FR)

The Functional Requirements Specification is designed to be readable to the general audience. Readers should comprehend the systems working process, but no technical knowledge should be required for that.

FR-01	**Registration**
Description	This module helps the employees to sign up for the system software. It requires their details such as Names, IDs, Working department etc. simply adding themselves to the system.
Members	General Users/ Employees.

FR-02	**Salary Information**
Description	This module helps the employees to know about their Salary informations, such as bonuses, increments, overtime salaries and their annual incomes too.
Members	General Members/Employees.

FR-03	**Messaging/Group Messaging**
Description	This module is a simple messenger panel, allowing the users to exchange messages within the system.
Members	General Members/Employees.

FR-04	**Profile Update**
Description	This module is going to allow the users to update their profile informations. For an instance a user could receive promotion or their department could be changed etc. They will be able to update such information.
Members	General Members/Employees

FR-05	**Profile Delete**
Description	This module would allow the users to send a request to the admin to delete/remove their account whenever they leave the company.
Members	General Members/Employee

FR-06	**Password Retrieve**
Description	This module allows the users to retrieve their password in case they forgets it.
Members	All users

FR-07	**Mailing**
Description	This module allows the users to use the official mailbox.
Members	All users.

FR-08	**Transportation**
Description	This module helps the users to choose their official transportation's routs according to their office time.
Members	General Members/Employees.

FR-9	**Cloud Storage Access**
Description	This module helps the users to access the company's cloud storage and put important files safely uploaded and also can download them from there at any time.
Members	General Members/Employees.

FR-10	**Posting Official Notices**
Description	This module is to post official notices.
Members	Admin

FR-11	**Remove Account**
Description	This module deletes the account of a user.
Members	Admin

FR-12	**Account Data Calculate**
Description	This module is a data sheet calculator, allowing the user to calculate several data and put them into respective places.
Members	Executive Members/Accountants.

FR-13	**Account Data Sheet Access**
Description	This module loads Account Data sheets in several categories, they can edit, or delete data using this module.
Members	Executive Members/Accountants.

5.2 Non Functional Requirements

NFR-01	**Login**

Description	This module allows the user to gain access to their accounts, which are password protected and secured.
Members	All users.

5.3 Performance Requirements

A requirement that specifies a performance characteristic that a system or system or system component must possess; for example, speed, accuracy, frequency.

5.3.1. Speed and Latency Requirements

Speed and latency is required especially for the accounting section of the system.

PR-01	The accountants accessibility page should response within seconds
Description	While the user's browsing the system the account access page will show within a second. It also depends on user's internet connection.
Stakeholders	Accountants.

5.3.2. Precision and Accuracy Requirements

The calculation of all the transactions that happens in the accounts section should be accurate.

PR-02	The accounts calculation should be accurate
Description	While the user is calculating data within the system and putting them in their respective positions, it should be accurate and problem free. It depends on the program's accuracy.
Stakeholders	N/A

5.3.3 Capacity Requirements

PR-03	The system will hold up to 300 employee's personal informations.
Description	The information of the employees, their work progress and their salary informations will be stored.

Stakeholders	Accountants, Employees.

PR-04	The system will hold up to 100M $ worth of accounting informations.
Description	All the financial exchanges and all the information of money transection will be recorded and secured.
Stakeholders	Accountants, Company, Employees.

5.4. Dependability Requirements (DR)

The flexibility of current frameworks encourage system architects to enable reconfiguration mechanisms that refocus the available, safe resources to support the most critical services rather than over-provisioning to build failure-proof system. Therefore, these requirements are essentials.

5.4.1. Reliability and Availability

As the program is going to handle a office's accounting informations and also it connects the employees to the office works, it should be available around the clock. The users should have the access to the system 24 hours a day.

DR-01	The system must be available 24x7
Description	• The system must be available 24 hours in a day • The system must be updated regularly • The system must publish the notice, events and update these regularly.
Stakeholders	Admin, Executive members/Accountants.

5.4.2. Quality & Faultlessness

The system will assure 100% quality usage and 0% crashes at any condition and won't give any wrong calculation.

DR-02	The system handles over access and system errors
Description	Sometimes multiple users can over access to this system. The system can handle multiple user access
Stakeholders	N/A

5.4.3. Safety Critical Requirements

This system will provide safety by protecting the employees data and also hide the classified informations from getting acquired by third party.

DR-02	The system must be protected
Description	The system ensures the safety of employee and the accounts data.
Stakeholders	N/A

5.5. Supportability & Maintainability

Supportability is the degree to which system design characteristics and planned logistics resources meet system requirements. Supportability is the capability of a total system design to support operations and readiness needs throughout the life-cycle of a system at an affordable cost.

5.5.1. Maintenance requirements

MS-01	The system helps to update any information in any time
Description	The admin can post any events and can enable to change or update any information in any situation. The accountants can also update their respective department.
Stakeholders	Admin, Accountants.

5.5.2 Supportability requirements

In order to understand the system's behavior on a technical support required by the system operator. The reason for reading them might be

- System malfunction has occurred and the system operator has to find the exact point of time when this happened.
- System produces wrong results and the developers must be able to reproduce the data flow through the system.
- Hacker tried to breach the system's security mechanisms and the system operator must understand what he did.

5.6. Security Requirements

There are no access requirements beside those that have been outlined in the below:

- The software must validate all user input to ensure it does not exceed the size specified for that type of input.
- The system must authenticate every request trying to access it.
- After authenticating the software, the system must determine whether that device or user

is authorized to access the system.
- The system must have security controls to protect against denial-of-service attacks.

To get access to this system or a specific module the system must provide a central authentication mechanism. In order to prevent anyone to exploit stolen all users password must be encrypted in hash process.

5.6.1. Access Requirements

To get access to the system, the system provides authorization/authentication way. This system uses various modules.

SR-01	The system provides security strategies.
Description	The system is designed in way that allows all modules to access a mechanism that provides security services.
Stakeholders	Admin, Employees, Accountants.

5.6.2. Integrity Requirements

To protect credentials of user from being stolen, all passwords are stored in encrypted form. The Requirements significantly reduces the value of stolen user credentials, it's not easy to decrypt the password.

5.6.3. Privacy Requirements

The system provides a protection of the database in the server. However, the system will have to increment this level of protection because of the personal data mode available on the system & the larger share of people that will be having access to it through the system's registration. The user's privacy will be granted by the limited access that the log in process is going to give to the database.

SR-02	All data will be protected
Description	The main requirement in the context is the generation of Employees data for analysis.
Stakeholders	Admin, Employees, Accountants.

5.7. Usability and Human Integrity Requirements

These Requirements define how to meet the physical and subjective needs of the users of the application.

5.7.1. Ease of use requirement

The system is easy to use and can easily be understood.

UH-01	The system must be usable for Employees with all associate stakeholders .
Description	The system indicates the several possibilities that the employees has to go on in using the system. They are allowed to undo any of the operation.
Stakeholders	Admin, Employees, Accountings.

5.7.2. Understandability and Politeness Requirements

This section describes more requirements of **Office Management Software** to add more features in the future.

UH-02	The features of **Office Management Software**
Description	The system is more efficiently ease of use if added more features .The system is understandable for all the users. The system will not use any terms that is not specified in this system.
Stakeholders	Admin

5.7.3. Accessibility Requirements

There are no access requirements beside those that have been outlined in the below:

AR-1: Log in as a Admin
AR-2: Log in as an Employee
AR-3: Log in as an Accountant.
AR-4: Log out as a Admin.
AR-5: Log out as an Employee.
AR-6: Log out as an Accountant.

To get access to this system or a specific module the system must provide a central authentication mechanism. In this process security question system will be used. The user can create their own security questions and input their answers, they will be notified by the system to change it from time to time. It will help to keep their accounts safe. It's like password for another password. In the next version the encryption systems might be available as per needs.

5.8. Operational and Environmental Requirements

This requirement ensures the users how they can operate this system smoothly, including interfaces and interoperability within their system. This system also assures the users about how and which conditions this system can perform well.

5.8.1. Expected Physical Requirements

There are no specific expected physical requirements.

5.8.2. Requirement for interfacing with Adjacent System

There is no specific interfacing with adjacent system requirements.

5.8.3. Release Requirements

There is no specific release requirements.

5.9 Legal Requirements

This requirements maintain the rules and regulations. Like, which rules should be followed to maintain this system.

5.9.1. Compliance Requirements

There are no specific Compliance Requirements.

5.9.2. Standard Requirements

There are no specific Compliance Requirements.

6. Requirement Engineering Process

Requirement Engineering Process refers to the process of defining, documenting and maintaining requirements in the engineering design process. It is a common role n the systems engineering and software engineering.

6.1. Requirement Elicitation Techniques

Requirement elicitation is the practice of collecting the requirements of a system from users, servants and other stakeholders. The practice is also sometimes referred to as requirements gathering.

6.1.1 Hold Elicitation Interviews

We hold interviews that can be performed one-on-one or with a small group of stakeholders. They are an effective way to elicit requirements without taking too much stakeholder time because we meet with people to discuss only the specific requirements that are important to this system. Interviews are helpful to separately elicit requirements from members in preparation for workshops where those member of this system come together to resolve any conflicts.

6.1.2 Perform Document Analysis

Existing documentation can help reveal how systems currently work or what they are supposed

to do. Documentation includes any written information about current systems, business processes, requirements specifications, competitor research. Reviewing and analyzing the documents can help identify functionality that needs to remain, functionality that isn't used.

6.1.3 Distribute Questionnaires

We conduct a survey to collect requirements for this system. Questionnaires are a way to survey large groups of users to determine what they need. Questionnaires are useful with any large user population but are particularly helpful with distributed groups

6.2 Requirement Validation

Validation ensures that the requirements are correct and demonstrate the desired quality that you want from this system. Requirements that seem fine when you read them might turn out to have ambiguities and gaps when to try to work with them.

6.2.1 Review the Requirements

Peer review of requirements, particularly the type of rigorous review called inspection, is one of the highest-value software quality practices available. Assemble a small team of reviewers who represent different perspectives and carefully examine the written requirements, analysis models, and related information for defects.

6.2.2 Test the Requirements

We tests constitute an alternative view of the requirements. We also conduct writing tests about how to tell if the expected functionality was correctly implemented. Derive tests from the user requirements to document the expected behaviour of the product under specified conditions.

6.2.3 Simulate the requirements

To simulate the requirements commercial tools are available that we have used to simulate a proposed system either in place of or to augment written requirements specifications. Simulation takes prototyping to the next level.