
Software Requirements Specification

for

Automated Leave Management System

Version 1.0 approved

Abhishek

Abhijeet M Baloji

Adithya Anant

A.Nithin

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Table of Contents

Table of Contents	ii
1. Introduction	1
1.1 Purpose	1
1.2 Document Conventions.....	1
1.3 Intended Audience and Reading Suggestions	1
1.4 Product Scope	1
2. Overall Description	2
2.1 Product Perspective.....	2
2.2 Product Functions	3
2.3 User Classes and Characteristics	4
2.4 Operating Environment.....	4
2.5 Design and Implementation Constraints	5
2.6 User Documentation	5
2.7 Assumptions and Dependencies	6
3. External Interface Requirements	6
3.1 User Interfaces	6
3.2 Hardware Interfaces	7
3.3 Software Interfaces	7
3.4 Communications Interfaces	7
4. System Features	8
4.1 System Feature 1	8
4.2 System Feature 2 (and so on)	8
5. Other Nonfunctional Requirements	8
5.1 Performance Requirements	12
5.2 Safety Requirements	12
5.3 Security Requirements	13
5.4 Software Quality Attributes	13
5.5 Business Rules	13
Appendix B: Analysis Models	

1. Introduction

The following subsections of the Software Requirements Specifications (SRS) document provide an overview of the entire SRS.

1.1 Purpose

The purpose of this document is to show the software requirements of the Automated Leave Management System (ALMS). The functionality and scope of this ALMS software are described in this SRS document release 1.0. This project is aimed at developing public key interface (PKI) based work flow for online/internet and mobile based ALMS. This system can be used to automate the work flow of leave applications and their approvals and there are features like email notification, cancellation of leave, automatic approval of leave, report generators, tracking etc in this ALMS.

1.2 Document Conventions

The format of this document is referred from the standard IEEE guidelines:

- Font style/face : Arial and Times New Roman
- Font size
 - Heading :32
 - Subheading :18
 - Content/Description :12
- Bold face and indentation is used on general topics and or specific points of interest including the heading and sub-heading.

1.3 Intended Audience and Reading Suggestions

This SRS document is intended for developers, professors, students for reading. The rest of the document contains the functional and non-functional requirements of Automated Leave Management System(ALMS).

1.4 Product Scope

The ALMS aims at helping the user to address issues from multi-disciplinary angles related to Automated Leave management System and Services.

The major benefits of this system / software are : –

- The ALMS software which helps to organize event without any paperwork.
- It has a wide variety of Modules.
By just few clicks users can check the leave status, leave balance, notices and apply for grant leave accordingly.
- The target user is the HR Manager, Project Manager, Technical staffs and Non Technical staff.
- This system automatically calculates leave balance from a fix amount of annual leave and show to the user.
- Improve the mechanism of receiving, approving and rejecting leave application through system.

2. Overall Description

2.1 Product Perspective

It is aimed at replacing the paper works that the companies or colleges currently use.

Automated Leave Management System facilitates the effective and smooth management of personal leave. The System Collect data and store it for fast reference(web base applications). The System will provide users with complete record of the attendance and leaves. It will also provide information about the leave balance (availability). The system is Thus helpful to reduce the times and complexity of maintaining the records.

Administrative Settings

- Choose the **types of leave** allowed – Sick, Annual, Family Responsibility, Maternity, Study, Unpaid, etc.
- Choose the **number of days** allowed for each of the types. A **default** is set for all the employees, but admin can also modify it per employee.
- Leave can be **allocated** annually or monthly depending on your company policies.
- Choose the persons to be **notified** when leave requests are received.

Employees

- A leave **summary** shows the employee, how many leaves are available , how many they have taken and the status of their leave applications.

- Easily **apply** for leave choosing the required leave type and amount of hours or days.
- Employees can upload **supporting documentation**, such as university documents or sick notes when they apply for leave.
- The **ALMS** is completely secure, thus employees can't view each other's leave statuses.

Leave processing and reporting

- A **notification** is received by relevant managers / HOD when a leave application is submitted by an employee.
- The relevant manager can then log in choose to **approve or reject an application**. Reasons can also be provided. The employee will be notified once the leave application is approved or rejected.
- A **summary** can be selected whereby management, HR or the persons tasked with mapping the employees leave can **search** via an employee and leave year, to get a summary of the employees current leave application as well as his outstanding leave days per category such as sick leave, maternity leave, yearly leave etc.
- We make **reports** on ALMS. Simply select data to include in your reports such as department, employee name, leave year, leave status, dates and the output format for example HTML, **PDF**, **Excel**, **XML** and **DOC** etc...

2.2 Product Functions

Some major product functionalities of the system are as follows:

- Online application for leave without the need for paperwork.
- Information about the employee / student / staff attendance.
- Check for Leave availability.
- Display notices.
- Apply for Leave.
- Approve or reject Leave application.
- Email notification to approving officer and applicants.
- Leave records are updated automatically once application are approved.
- Leave records are may be printed out or generated into reports.
- Leave records may be exported to any back-end system.

2.3 User Classes and Characteristics

Primary users of the system will be employees working in company / students / staff, manager, HOD, Admin. Very little technical expertise is required for reading the outputted data since it is in graphical / tabular form.

Type Of USER	Privilege Level	Experience Level	Technical Expertise
Admin	High (can access the entire database)	High (should have the knowledge DBMS and system management)	High (should be proficient with MYSQL and java application Servers)
HR Manager / HOD	Medium (can register and access the employee records under his department)	Medium (should have the knowledge of the rules related to organization and the functions of HR or HOD)	Medium (Should know the system rules and well trained / skilled to handle the system effectively)
Employee / Student	Low (will be able to access data pertaining to himself only)	Low (No prior experience required)	Low (No technical expertise required)

2.4 Operating Environment

Open source , HTML, Windows, Ubuntu, etc

2.5 Design and Implementation Constraints

High performance, User-friendly, Security based system, validation of users, very fast response time.

For Web Interface:

1. Browser must be allowed to access file system.
2. System must allow JVM to run the applet under the browser memory.

3. User must have his private key available on the local file system.

Mobile Interface:

1. User must have his private key available on the local file system.
2. CDAC Leave App should be installed on the mobile.

2.6 User Documentation

Documents	Description	Format
User Manual	This document describes the how to use the ALMS features.	PDF
Online Help	Online help will contain the information about system controls.	Web pages
Tutorials	A document with / video that describes major function of the system.	PDF, Online videos

2.7 Assumptions and Dependencies

Assume that all the information entered by the user will be correct. If any wrong information found then system will notify an alert. The system is required to save the generated reports.

1. User has the basic knowledge of computer.
2. Internet connectivity is intermittent in both system and mobile.

3. External Interface Requirements

3.1 User Interfaces

UI-1:The Leave Management System screen displays shall conform to the Process Impact Internet Application User Interface Standard.

UI-2:The system shall provide a help link from each displayed HTML page to explain how to use that page.

UI-3:The Web pages shall permit complete navigation and function selection using the keyboard alone, in addition to using mouse and keyboard combinations.

UI-4: Main Menu, Header, Footer will be common in all the pages.

Header: Header contains **logo** and the search box.

Footer : Footer contains the legal links and copyright information and footer menu that contains links like **contact information about us** and **site map** etc.

Screen Name	Description
Login	Log into system.
Employee	Display attendance of employee, no of leaves, leave balance. Add or update employee records.
Apply for leave	Display leave availability, application for leave, cancel application. Add or update leave allotment records.
Leave records	Display Leave history.
Approve / reject leave application	Display leave availability and application form. Add or update records.
Staff	Add or update staff records Create, modify, and delete staff member.
Reports	Select, View, save, Delete reports

3.2 Hardware Interfaces

The system shall run on :

Operating system : Any Windows OS, MAC,UBUNTU. **SCRIPTS** which supports CGI, HTML and JavaScript. **Web Browser:** Google chrome, Mozilla firefox .

3.3 Software Interfaces

The system shall interface with an Oracle or Access database. To implement the project we have chosen PHP (serverside scripting language) for its more interactive and easy to understand support.

Operating System :	Windows, Ubuntu.
Software Tools :	Andriod studio (mobile interface) HTML(web interface) PHP.
Database :	MYSQL 8.1

3.4 Communications Interfaces

- CI-1 A web based interface where user can interact with the system to perform various functions.
- CI-2 The System supports Google chrome other web engines or browsers.
- CI-3 Involves FAQ forms for the requesting information, queries and problems etc.

4. System Features

System features are organized by use cases and functional hierarchy so that the main functions of the system will be understandable.

4.1 Login

4.1.1 Description and Priority

Users of the system can use the system features only after the login. Login is used for identify the user is authenticated or not.

Priority: High

4.1.2 Stimulus/Response Sequences

4.1.2.1 Basic Flow:

1. Open the login Page.
2. Enter Login credential (user-Id and password).
3. Click on Login button.
4. Validate the user.
5. User Homepage is Shown.

4.1.2.2 Alternative Flow :

1. If user and password does not match then it show error message.
2. Again same page is opened and asking for correct login credential.

4.1.3 Functional Requirements

REQ-1: User-Id and password is required.

- System will keep Employee records.
- System provides Information about the leave approval and leave availability.
- Keep staff records.
- Keep notices record.
- Display leave history.

4.2 Employee Registration

4.2.1 Description and Priority

Employee registration is done by HR Manager or HOD. It requires all details related to that employee. It is necessary for all the employee.

Priority: High.

4.2.2 Stimulus /Response Sequences

4.2.2.1 Basic Flow:

- 1.Login to the system as HR Manager.
- 2.Open the Employee Registration page.
- 3.Fill all the details of employee.
- 4.Click on the Register button.
- 5.Validate all the fields and ask for Confirmation.
- 6.Confirmation Message shown for Successfully Registered.

4.2.2.2 Alternate Flow:

- 1.If any detail is missing or wrong then it show error message.
- 2.Again same page is opened and asking for correct input.

4.2.3 Functional Requirements

REQ-2: Details of the employee

4.3 Recover Forgot Password

4.3.1 Description and Priority

If user forgot the password then he can ask for reset of password.

Priority: High.

4.3.2 Stimulus/Response Sequences

4.3.2.1 Basic Flow:

- 1.Open the login page.

2. Click on the Forgot Password button.
3. Fill the User-Id for recovery of password.
4. Click on the Reset password button.
5. New password is sent on his/her email.
6. Confirmation message is shown to user.

4.3.2.2 Alternate Flow:

1. If user-Id does not exist in system then it show error message.
2. Again same page is opened and asking for correct User-Id.

4.3.3 Functional Requirements

REQ-3: User-Id of the user.

4.4 View Profile

4.4.1 Description and Priority

A user profile is collection of his/her personal details, leave application and leave information. In profile user can also view the available notifications. Priority: Medium

4.4.2 Stimulus/Response Sequences

4.4.2.1 Basic Flow:

1. Login into the system.
2. Click on View Profile Button.
3. User profile is shown to user.

4.4.3 Functional Requirements

REQ-4: User has to login.

4.5 Apply for Leave

4.5.1 Description and Priority

Leave application is submitted by user for taking leave. User can select the type of the leave and also submit a document related to leave reason or any other document. Priority: High.

4.5.2 Stimulus/Response Sequences

4.5.2.1 Basic Flow:

1. Login into system.
2. Click on Apply Leave button.
3. Select the leave type.
4. Fill all the required details.
5. Click on Apply button.
6. Validate the form and ask for Confirmation.
7. Confirmation message is shown to user.

4.5.2.2 Alternate Flow:

- 1.If any field is missing or incorrect then it shows error message. 2.Again same page is opened that asks for correct Data.

4.5.3 Functional Requirements

REQ-5: Leave type is required.

4.6 Approve/Reject Leave

4.6.1 Description and Priority

Leave application submitted by employee can be viewed by HR Manager. After that checking all the details of application Hr manager can approve or reject the leave application.

Priority: High.

4.6.2 Stimulus/Response Sequences

4.6.2.1 Basic Flow:

- 1.Login into system.
- 2.Click on Apply Leave button.
- 3.Select the leave type.
- 4.Fill all the required details.
- 5.Click on Apply button.
- 6.Validate the form and ask for Confirmation.
- 7.Confirmation message is shown to user.

4.6.2.2 Alternate Flow:

- 1.If any field is missing or incorrect then it show error message.
- 2.Again same page is opened and asking for correct Data

4.6.3 Functional Requirements

REQ-6: Leave History is required.

4.7 View Notification

4.7.1 Description and Priority

Notification about leave application will sent to related authority. And Notification about status of the application is also sent to employee.

Priority: High.

4.7.2 Stimulus/Response Sequences

4.7.2.1 Basic Flow:

- 1.Login into system.
- 2.Click on Notification button.
- 3.List of notification is shown.

4.7.3 Functional Requirements

REQ-7: Notification is available for the user.

4.8 View Leave History of Employees:

4.8.1 Description and Priority

Leave history contains the details of all the Leave Application History and available Leaves for that user.

Priority: High.

4.8.2 Stimulus/Response Sequences

4.8.2.1 Basic Flow:

- 1.Login into system.
- 2.Click on Leave History button.
- 3.History of leaves applications is shown to the user.

4.8.2.2 Alternate Flow:

- 1.If any field is missing or incorrect then it show error message.
- 2.Again same page is opened and asking for correct Data.

4.8.3 Functional Requirements

REQ-8: Leave History is required

4.9 Set Rules

4.9.1Description and Priority

Administrator will set the leave rules. Administrator can also add new rules and modify existing rules.

4.9.2Stim ulus/Response Sequences

4.9.2.1 Basic Flow:

1. Open the administrator login page.
2. Login as administrator.
3. Add, Modify rules for employee.

4.9.3 Functional Requirements

REQ-9: User must have administrator privilege.

5. Other Nonfunctional Requirements

5.1 Performance Requirements

As this is a web application hence it is not a resource hog and will run on almost every computer. Its functions and features are not computationally intensive. It does not require a powerful processor or graphics card, much RAM, or disk space. It only requires a latest Browser.

5.2 Safety Requirements

This application as all the other web application requires the Internet availability, and is also requires that the user should keep his private keys safe and secure and the same should not be shared with any one

5.3 Security Requirements

User should keep his key safe. The system or the place where the key is stored should not be public. In the case if the user loses his key then he/she should immediately inform the system admin.

5.4 Software Quality Attributes Client

Side Quality Attributes:

The application provides a quite user-friendly interface with its operations accessible from the menu bar and the main toolbar. An average or casual user should not find any problem using the program to perform at least its main functions. Interoperability is guaranteed since this program runs on both Mac and PC (Linux, Windows or other operating system).

Server side Quality Attributes:

Along with that our system provides the server which is scalable so that it can meet up any future requirements and is easily upgradeable. Admin can take a backup on a regular interval so in case of any failure or damage system can be restored easily.

5.5 Business Rules

Administrative Tasks:

- 1.Can approve or deny the leave applications of the employees working under his hierarchy.
- 2.Can see the leave history of a particular employee.
- 3.Can define the custom rules in the system.

4.Can generate the report.

User tasks:

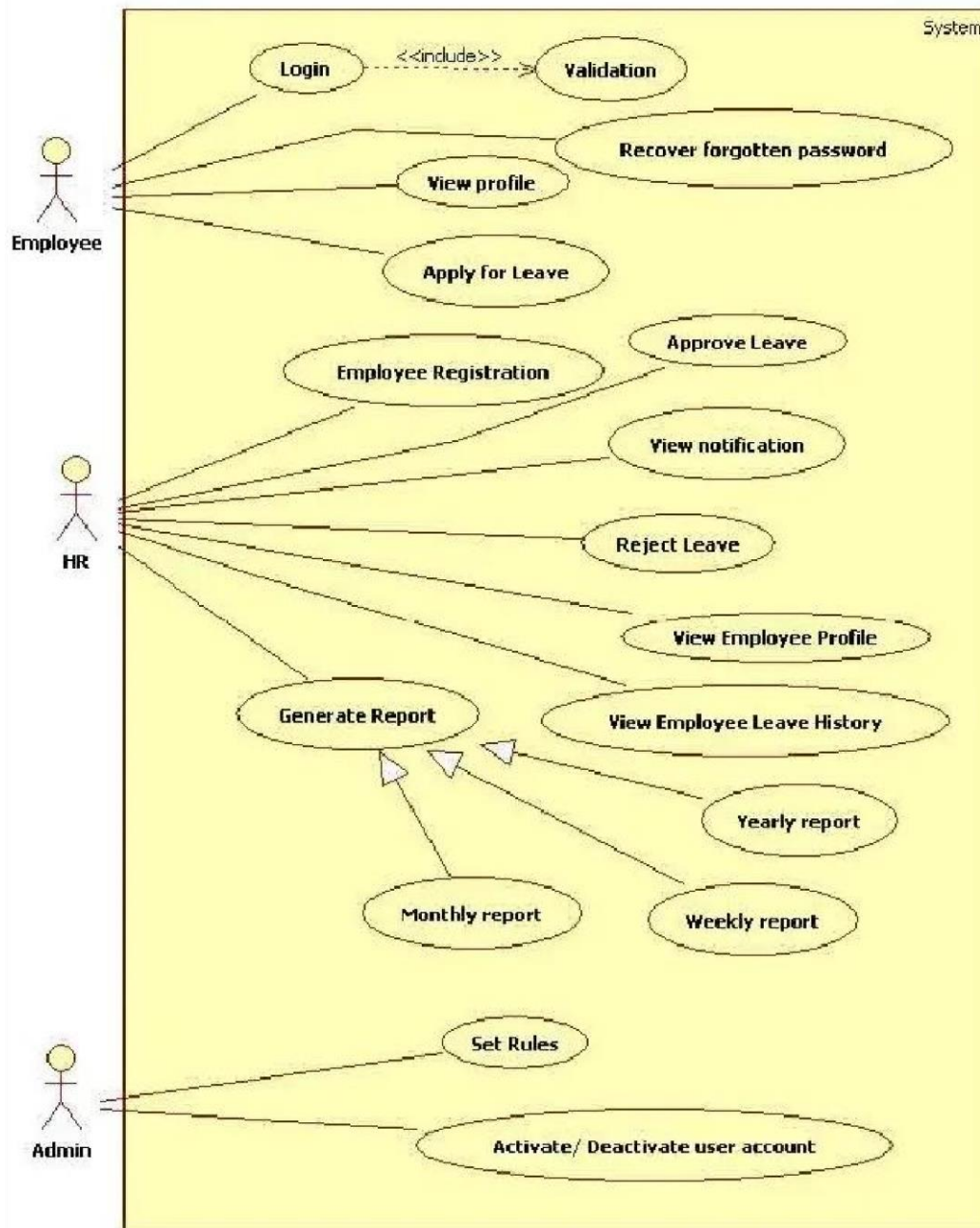
1. Can view his leave balance.
2. Can apply for new leave and check the status of the application(s).

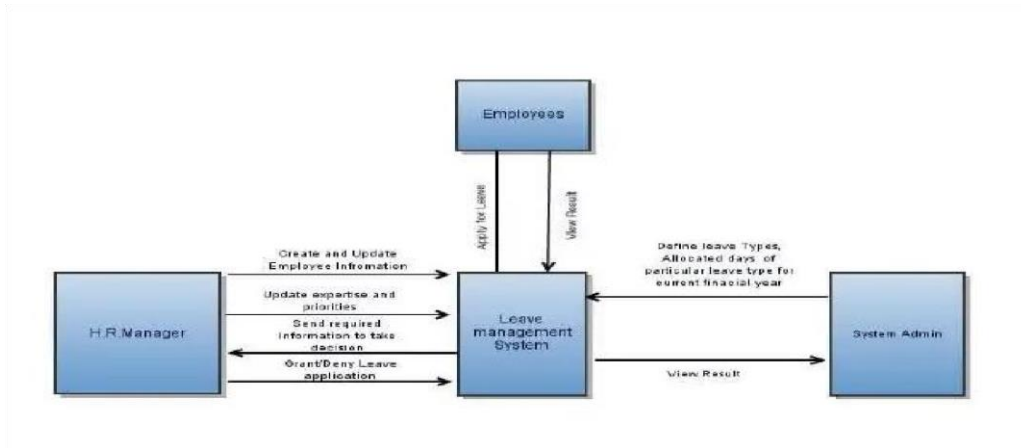
6. Other Requirements

No other requirements.

Appendix B: Analysis Models

Use Case Diagram:



Context Diagram:**System Flow:**