

Software Requirements Specification

for

Online Leave Management System

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Revision History

Revision	Date	Author(s)	Description
1.0	16.01.2020	All	Base Revision
2.0	23.01.2020	All	Functional Requirements Revised Added Non-Functional Requirements

Chapter 1

Introduction

1.1 Purpose

This project is aimed at developing an online application for leave management. The Leave management system is an internet-based application that can be accessed throughout the institution used for automating the workflow of leave application and their approvals.

1.2 Document Conventions

- Font face : Arial
- Font size :
 - Heading : 18
 - Sub-heading : 14
 - Description : 11
- 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 document is mainly intended for developers as a walk-through of the project. The sequence for reading the document begins with the overview sections and proceeding through the sections that are most about each reader type.

1.4 Product Scope

The Leave management software aims at helping the user to address issues from multi-disciplinary angles related to leave administration and management. The main benefit of this software are

- To decrease the paperwork and enable the process with efficient, reliable record maintenance by using centralized database, thereby reducing chances of data loss.

- Can easily be extended for further feature.
- Easy on implementation.

By just few clicks user can check for leave status, leave balance if applicable, apply for it. Whereas the validating party can grant leave easily in a similar fashion.

1.5 Constraints

- The Leave status cannot be cleared until and unless the HOD approves/rejects the applications
- Document physical verification is required for authenticity, but the documents will be maintained in the server for future references.
- Document Size should not be greater than 5MB.

1.6 Limitations

- The system will fail if the server fails, but the data will remain stored in the database.
- The system is available on the intranet only.

Chapter 2

Overall Description

2.1 Product Perspective

Leave Management Software facilitates the effective and smooth management of personnel leave. The Administrative Department can always be up to date with their leave management. With comprehensive reporting and Web based applications. This system facilitates the total leave process, from completing leave applications by personnel and leave application approval by management. The main objective of the proposed system is to reduce the paperwork and help in easier record maintenance by having a particular centralized Database System, where Leaves and Notices are maintained. The proposed system modernizes and automates the existing system.

Administrator

- 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 and student, but admin can also modify it per employee and students.
- Leave can be allocated annually or monthly depending on your institute policies.
- Choose the persons to be notified when leave requests are received.
- Choose the approver for the leave requests.
- Assign different roles.

Faculty

- Can approve the leave of the student.
- Can review and comment on the documents.
- Can check the students leave history.
- Can recommend application further in the chain and give remarks.
- Easily apply for leave choosing the required leave type and amount of hours or days.
- Faculty can upload supporting documentation, such as university documents or sick notes when they apply for leave.

Student

- A leave summary shows the student, 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.
- Student can upload supporting documentation, such as university documents or sick notes when they apply for leave.
- The Leave Management Software is completely secure, thus student can't view each other's leave statuses.
- Mess waiver application can also be sent to the concerned parties.

2.2 Product Functions

The software supports the following functionalities

- On-line application for leave without the need for paperwork.
- Email notifications to approving authority and applicants.
- Applicant and Approving party can see complete leave records and approval history respectively.
- Leave records are updated automatically once applications are approved.
- Leave records may be printed out or generated into reports.
- Leave records may be exported to any back-end system.
- Choose the types of leave allowed - Sick, Annual, Family Responsibility, Maternity, Study, Unpaid, etc.
- The concerned faculty are notified on students leave.
- Available leave balance is shown if applicable.
- All leave policies are configurable.

2.3 User Classes and Characteristics

TYPE OF ACCOUNT	PRIVILEGES
ADMIN	Can access the entire database and assign roles, policies
NORMAL USER	Can access the database assigned to the respective roles

TYPE OF ROLES	FUNCTIONALITY
FACULTY	Can Approve Leave Applications, Apply for Leave, See the leave balance and Review other students leave
P.H.D STUDENT	Can Apply for Leave, See the leave balance and Check Status
STUDENT	Can Apply for Leave and Check Status

2.4 Operating Environment

TYPE	SPECIFICATION
Operating System	Windows XP and Later , MAC OS, Linux
Hardware Platform	Pentium IV and Later
Software(Web Browsers)	Mozilla 2.0 and Later,Google Chrome,IE 7.0 or Later

2.5 Design and Implementation Constraints

The following are the concerns regarding the imlementation designed.

- Browser must be allowed to access file system.
- System must allow incoming connection to the web-server.

2.6 User Documentation

Documents	Description	FORMAT
User Manual	This Document describes the how to use system features.	PDF,EPUB
On-Line Help	Online help will contain the information about system controls.	Web pages
Tutorials	A document with snap-shots that describe each function of the system in detail and how to perform them	PDF

2.7 Assumptions and Dependencies

The following assumptions were made while designing the solution.

- User has the basic knowledge of computer.
- Internet connectivity is intermittent in system.

Chapter 3

External Interface Requirements

3.1 User Interfaces

- A simple profile page with all the detailed information of the user will be there.
- The system shall provide a help link from each displayed HTML page to explain how to use that page.
- The Web pages shall permit complete navigation and function selection using the keyboard alone, in addition to using mouse and keyboard combinations.
- Form for applying for the leave and submitting the required information.
- Main Menu, Footer will be common in all the pages.
- Footer contains the legal links and copyright information and footer menu that contains links like contact information, about us.
- Header has the institute logo and name.

3.2 Hardware Interfaces

No hardware interfaces have been identified.

3.3 Software Interfaces

TYPE	SOFTWARE
Operating System	Windows XP and Later , MAC OS, Linux
Softwares Tools	PyCharm IDE, VsCode
Database	MySql
Application Server	Nginx, Django v3.0
Opensource tools	VueJS, Ajax, Bootstrap

3.4 Communications Interfaces

- A web based interface where user can interact with the system to perform various functions.
- The Leave Management System shall send notifications (via e-mail and Push notification) to the applicant and managers related to various events like approval/deny of application.
- A report for the validated leave to the concerned parties.
- A Browser based interface for mobile users
 - Student: Applying and viewing the status of the application.
 - Faculty: Approving and denying application.

Chapter 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

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

Basic Flow:

- Open the login page.
- Enter login credential (user-Id and password).
- Click on the Login button.
- Validate the user.
- User Homepage is shown.

Functional Requirements

- User-id and Password is required.

Priority: High

4.2 User Registration

Personnel registration is done by admin. It requires all the details related to that Personnel. It is necessary for all the Personnel.

Basic Flow:

- Login to the system as admin.
- Open the Registration page.

- Fill all the details of users.
- Click on the Register button.
- Validate all the fields and ask for Confirmation.
- Confirmation Message shown for Successfully Registered.

Functional Requirements

- Details of the employee.

Priority: High

4.3 Recover Forgot Password

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

Basic Flow:

- Open the login page.
- Click on the Forgot Password button.
- Fill the User-Id for recovery of password.
- Click on the Reset password button.
- New password is sent on his/her email.
- Confirmation message is shown to user.

Functional Requirements

- User-Id of the user.

Priority: High

4.4 View Profile

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

Basic Flow:

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

Functional Requirements

- User has to login..

Priority: Medium

4.5 Apply for Leave

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.

Basic Flow:

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

Functional Requirements

- Leave type is required.

Priority: High.

4.6 Approve/Reject Leave

Leave application submitted by user can be viewed by respective leave approver. After that checking all the details of application ,he can approve or reject the leave application.

Basic Flow:

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

Functional Requirements:

- Leave History is required.

Priority: High.

4.7 View Notification

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

Basic Flow:

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

Functional Requirements:

- Notification is available for the user.

Priority: High.

4.8 View Leave History

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

Basic Flow:

- Login into system.
- Click on Leave History button.
- History of leaves applications is shown to the use

Functional Requirements:

- Leave History is required.

Priority: High.

4.9 Set Permission

Administrator will set the permission for who can approve the leave. Administrator can also add new rules and modify existing rule.

Basic Flow:

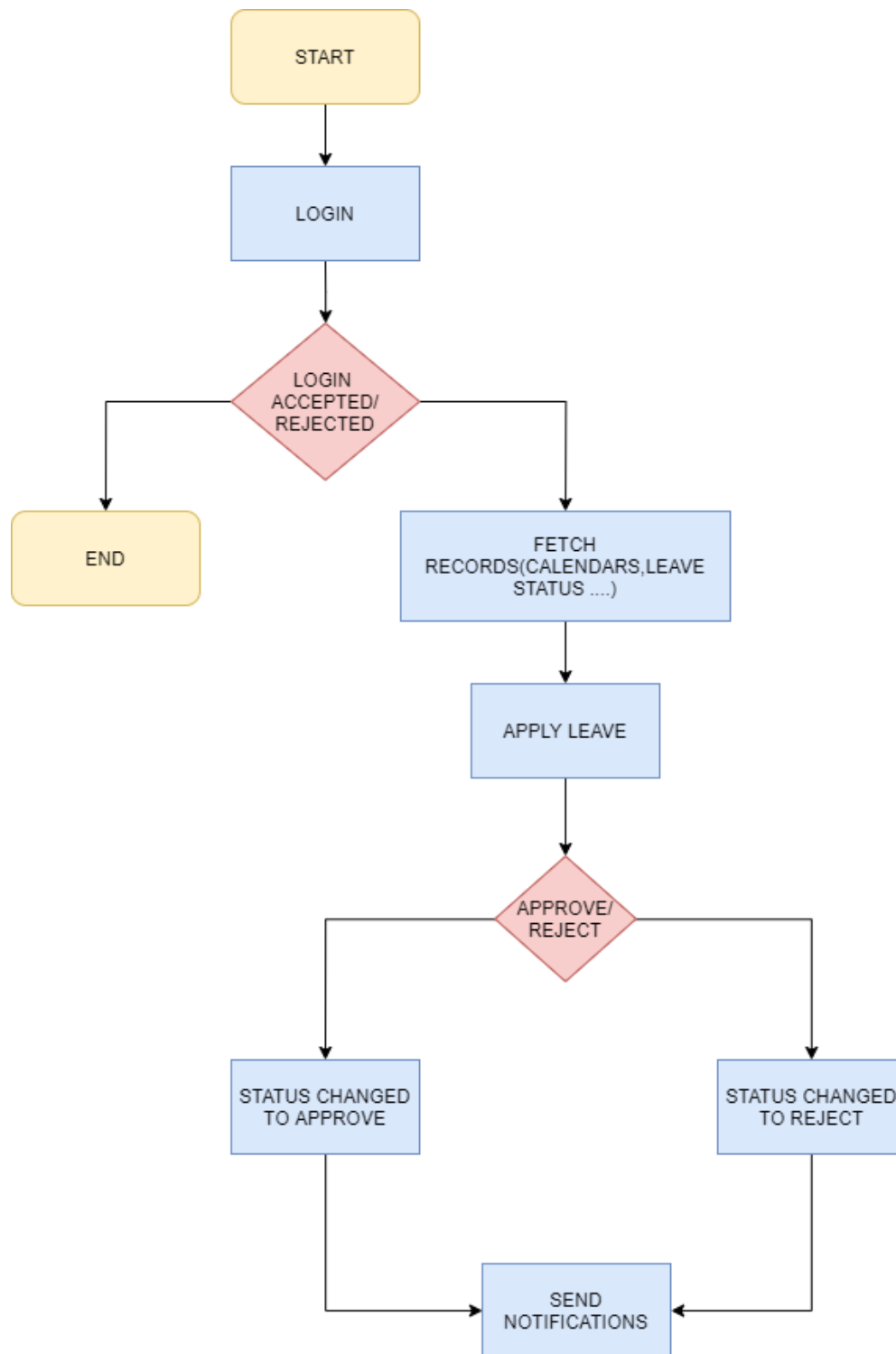
- Open the administrator login page.
- Login as administrator.
- Add, Modify rules for users.

Functional Requirements:

- User must have admin privilege.

Priority: High.

4.10 System Flow



Chapter 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. Inter-operability 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 upgrade-able. 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

Faculty Tasks

- Can approve or deny the leave applications of the P.h.d student working under his hierarchy.
- Can see the leave history of a particular student.
- Can generate the report.

Student tasks

- Can view his leave balance if applicable.
- Can apply for new leave and check the status of the application(s)
- Can submit additional documents.
- Can generate reports.

Chapter 6

Outcome

6.1 Outcome

The Leave management software aims at helping the user to address issues from multi-disciplinary angles related to leave administration and management. The main benefit of this software are

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- Can easily be extended for further feature.
- Easy on implementation.

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