**SOFTWARE**

**REQUIREMENTS SPECIFICATION**

**For**

**Employee Leave Management System**

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## 1. Introduction

### 1.1 Purpose

The project aims to revolutionize the leave management system within our organization. By creating a centralized platform, the goal is to streamline the entire process of requesting, approving, and managing employee leave. This initiative is driven by the need to enhance operational efficiency, optimize resource allocation, and establish transparency in leave policies and balances.

### 1.2 Document Conventions

* Entire document should be justified.
* Convention for Main title
* Font face: Times New Roman
* Font style: Bold
* Font Size: 14
* Convention for Sub title
* Font face: Times New Roman
* Font style: Bold
* Font Size: 12
* Convention for body
* Font face: Times New Roman
* Font Size: 12

### 1.3 Scope of Development Project

The project encompasses the development of a user-friendly system enabling employees to easily submit leave requests while providing managers with an efficient interface to review and approve/reject these requests. This involves creating a secure database to store essential employee data, leave requests, approval history, and balances. Furthermore, the project includes implementing reporting tools to offer insights into leave trends, usage patterns, and balance tracking. Ensuring proper access controls, security measures, and scalability for future enhancements are also within the project's scope.

### 1.4 Definitions, Acronyms and Abbreviations

JAVA -> platform independence

SQL-> Structured query Language

ER-> Entity Relationship

UML -> Unified Modeling Language

IDE-> Integrated Development Environment

SRS-> Software Requirement Specification

### 1.5 References

### Books

* + “Effective HR Policies and Procedures: A Comprehensive Guide” by Janis Fisher Chan
  + “Human Resource Management” by Gary Dessler
  + “The Absence Management Handbook: A Guide to Managing Absence” by Health & Safety Executive (HSE)
* **Websites**
* <https://www.youtube.com/watch?v=qMGrp23MgQQ&t=50s>
* <https://codeastro.com/employee-leave-management-system-in-php-with-source-code/>

## 2. Overall Descriptions

### 2.1 Product Prescriptive

The employee leave management system simplifies leave tracking and approvals with an intuitive interface allowing for personalized leave types and policies. This system automates workflows, provides comprehensive reporting, and ensures seamless integration with existing HR systems, prioritizing data security and compliance. It empowers employees to request leaves effortlessly while aiding HR teams in efficient leave management.

### 2.2 Product Function

The employee leave management system efficiently tracks, records, and manages all aspects of employee leave, including different types such as sick leave, vacation, and personal time off. It automates leave request processes, manages approval workflows, maintains accurate leave balances, generates insightful reports on leave trends, and seamlessly integrates with HR, ensuring compliance with company policies and legal regulations while providing a user-friendly experience for both employees and administrators.

### 2.3 User Classes and Characteristics

The system provides different types of services based on the type of users [Manager/Employee]. The Manager will be acting as the controller and he will have all the privileges of an administrator. The employee is the one who will be accessing the application for Leave online.

The features that are available to the Manager are:-

 Grant/revoke leave requests

* View all employee leave history
* Manage leave policies and configurations
* Add/edit/delete employee records
* Generate reports on leave usage and trends
* Modify system settings and permissions
* Handle escalated leave-related issues

The features that are available to the Employees are:-

* Submit leave requests
* View own leave history and balances
* Check the status of submitted leave requests
* View company leave policies and entitlements
* Update personal information if needed

### 2.4 Operating System Environment

The Employee Leave Management System is designed to operate within a Windows environment and accessible through popular web browsers such as Microsoft Internet Explorer (6.0), Google Chrome, Mozilla Firefox, and Opera (7.0 or higher). The system is optimized for compatibility across these browsers, ensuring smooth functionality and accessibility.

All that's needed to utilize this online tool is an internet connection, allowing seamless access to its features and functionalities. As for hardware requirements, the system is adaptable to a variety of configurations: a minimum 40 GB hard disk space, support for a 15” color monitor, and a standard 122-key keyboard serve as the basic hardware needs. Input devices, including a keyboard and mouse, along with output devices such as a monitor and printer for document printing, complete the necessary setup for efficient system operation.

### 2.5 Assumptions and Dependencies

The assumptions are:-

* The coding should be error-free to ensure accurate tracking and management of employee leaves.
* The system should offer user-friendly interfaces for easy navigation and utilization by employees and administrators.
* All employee information, leave records, and management data should be stored in an accessible database linked to the system.
* The system should prioritize ample storage capacity and rapid database access for efficient handling of leave-related information.
* Seamless search functionality and swift transaction support should be integrated for quick leave processing.
* The system operates continuously, allowing leave requests and management 24/7.
* Users (employees and admin) can access the system from any computer with internet browsing capabilities and an internet connection.
* Proper authentication via correct usernames and passwords is necessary for access and actions within individual online accounts.

The dependencies are:-

* Specific hardware and software configurations required for the smooth functioning of the system.
* Development and implementation based on listed requirements and specifications.
* The administrators (end users) should have a comprehensive understanding of the system's functionalities.
* The system should generate and store general reports related to employee leaves.
* All employee information and leave data must be stored in a database accessible by the Management System.
* Any updates or modifications regarding employee leaves should be accurately recorded in the system's database.

### 2.6 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

### 2.7 Data Requirement

The data requirements for an employee leave management system encompass employee details like IDs, departments, and contact information, coupled with leave-related specifics such as various leave types, policies governing accrual rates, and maximum limits. It needs to store leave balances, individual leave requests detailing types, dates, durations, and reasons, along with a log of approval workflows, timestamps, and comments. Additionally, maintaining a calendar view, historical leave data, reporting analytics, integration information, and security measures for compliance and privacy ensures the system's accuracy, efficiency, and alignment with legal standards.

## 3. External Interface Requirement

### 3.1 GUI

The software offers a robust graphical interface allowing both users and administrators to execute necessary tasks, including leave request creation, updates, and detailed viewing. It enables quick report generation for leaves issued or returned within specified timeframes. Additionally, the system facilitates stock verification and diverse search options based on various criteria. Administrators have the ability to customize the user interface, ensuring all software modules align with defined standards within the graphical user interface. The design emphasizes simplicity, adhering to a standardized template across different interfaces. The user interface seamlessly integrates with the user management module, with a dedicated section for the login/logout module.

Login Interface:-

New users can register by entering their details to create an account. Upon account creation, users can 'Login' by entering their username and password. Incorrect login details prompt an error message.

Search:-

Employees or administrators can search for specific leave types or durations by entering relevant criteria, streamlining the search process.

Categories View:-

The system showcases various leave categories and empowers administrators to add, edit, or delete categories as needed.

Administrator Control Panel::-

This control panel grants administrators the ability to add/remove users, manage leave resources, and oversee leave-related settings and options.

## 4. System Features

The system ensures user account security through several measures:

* Authentication and validation of employees using their unique employee ID for accessing the leave management system.
* Continuous monitoring by administrators involving updates to account statuses. Alerts notify users if leave requests exceed policy limits and enable the imposition of fines for missed return dates.
* Strict accountability measures prohibit employees from accessing or viewing other employees' leave accounts. Only administrators have access to and manage all employee leave accounts, ensuring confidentiality and accountability.

## 5. Other Non-functional Requirements

### 5.1 Performance Requirement

The proposed Employee Leave Management System will serve as the primary platform across the organization, interacting with employees. Thus, it must align with the organization's specific requirements:

* The system's performance should ensure both speed and accuracy in processing leave requests and managing employee records.
* Handling expected and unexpected errors is crucial. The system should incorporate error testing to prevent data loss or extended downtime, particularly concerning login credentials.
* Robust scalability is essential to accommodate a high volume of leave requests and employee data without compromising functionality.

### 5.2 Safety Requirement

To mitigate potential database crashes due to viruses or operating system failures, regular backups are imperative. Additionally, provision for uninterrupted power supply through UPS or inverters in case of power failures is necessary to safeguard the system's continuity.

### 5.3 Security Requirement

* The system should utilize a secure database framework ensuring data integrity and confidentiality.
* Users will have restricted access, allowing only reading privileges except for their personal information.
* Access constraints will be set for different user types, enforcing proper user authentication to prevent unauthorized access or password breaches.
* Stringent measures will be in place to prevent password hacking.
* Distinct admin and member accounts will segregate access rights, ensuring only admins can modify the database.

### 5.4 Requirement attributes

* Multiple admin accounts will have the authority to make system changes, whereas members or regular users will have restricted access for modifications.
* The system should adhere to an open-source model.
* Quality assurance will ensure the database is user-friendly for all users.
* A straightforward download and installation process will be provided for user convenience.

### 5.5 Business Rules

The Employee Leave Management System enforces business policies and practices that regulate system users' conduct. This encompasses project costs, offered discounts, and adherence to legal protocols. Both administrators and employees are expected to comply with these rules and regulations.

### 5.6 User Requirement

The system users consist of employees and administrators responsible for managing the leave system. Employees are presumed to possess basic computer and internet browsing skills. Administrators, however, require more in-depth knowledge to address system-related issues such as disk crashes or power failures. Adequate user support including a user-friendly interface, comprehensive user manual, online assistance, installation guidelines, and system maintenance instructions should be provided for seamless system utilization.

Admin Facilities for Employees:

* Backup and Recovery services for leave-related data.
* "Forgot Password" functionality for user convenience.
* Data migration, ensuring user data registration is securely stored on the server.
* Data replication to prevent loss across branches by maintaining a centralized server.
* Auto Recovery through frequent automatic data saving.
* File Organization to maintain structured leave records.
* Regular server maintenance and updates to ensure system integrity and efficiency.

## 6. Other Requirements

### 6.1 Data and Category Requirement

Various user categories, including teaching staff, administrators, librarians, and students, dictate specific access rights within the system. Administrators have full data modification privileges, while all other users, excluding librarians, possess solely retrieval rights. Similarly, the system will classify leave types or categories, and relevant data pertaining to each leave category will be presented in a structured format.

### 6.2 Appendix

A: Admin, Access Rights, Assumptions; B: Books, Business Rules; C: Categories, Clients, Conventions; D: Data Requirement, Dependencies; G: GUI; K: Key; L: Leave, Librarian; M: Member; N: Non-functional Requirement; O: Operating Environment; P: Performance, Perspective, Purpose; R: Requirement, Requirement Attributes; S: Safety, Scope, Security, System Features; U: User, User Classifications, User Requirements.

### 6.3 Glossary

The following are the list of conventions and acronyms used in this document and the project as well:

* Administrator: A login ID assigned to a user with administrative privileges within the leave management system.
* User: A general login ID typically assigned to most system users.
* Client: Refers to the intended users of the leave management system.
* SQL: Abbreviation for Structured Query Language, utilized for retrieving information from the database.
* SQL Server: A server framework employed for storing data systematically.
* Layer: Represents distinct segments or divisions within the project structure.
* User Interface Layer: Pertains to the segment involving direct user interaction within the leave management system.
* Application Logic Layer: Refers to the web server section where all computational processes occur.
* Data Storage Layer: Represents the segment responsible for recording and storing all leave-related data.
* Use Case: A high-level diagram depicting an overview of functionalities within the leave management system.
* Class Diagram: A static structure diagram describing the system's structure, showcasing classes, attributes, and their relationships.
* Interface: Refers to a communication medium facilitating interaction across different components.
* Unique Key: Identifier used to differentiate entries within the database of the leave management system.

### 6.4 Class Diagram