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Design Steps of Online Leave Management Application System for Academic Institution

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Abstract
An Online web-based employee's leave management application system integrates various processes and systems to automate and simplify the management of employee data, leave requests, and tracking, as well as the approval of leave. In many organizations, employees are entitled to different types of leave, which are allocated based on institutional policies. However, the manual management and approval of leave requests can be time-critical, time-bound, time-consuming, error-prone, paper-based, and challenging to handle.
To address these issues, an automated leave management system is being developed using technologies such as HTML, PHP, and MySQL. The implemented system will successfully fulfil its intended purpose, demonstrating satisfactory functionality and error-free operation. The system enables employees to request leave in a timely manner, ensuring efficiency and accuracy. This automated solution is suitable for both academic staff and the administrative department of an institution, facilitating effective and efficient management of employee leave. It reduces paperwork, streamlines processes, and provides a reliable platform for leave management.
Keywords: Leave Request, Leave Tracking, Approval, HTML, PHP, and MySQL.

Introduction

The employee's leave management system is a user-friendly web-based application accessible to both staff and administration within an institution. This system simplifies the process of requesting and tracking leave for employees. Additionally, the administrative department can efficiently allocate, grant, and manage all leave requests using this system. The application also ensures that relevant staff members are notified about approved leaves, enabling the administrative department to effectively coordinate leave schedules and manage employee absences. When an employee's leave approves, the system automatically deducts the approved leave from their total entitlement. Furthermore, the system provides comprehensive information to all involved parties, including the total leave taken, the remaining leave balance, and the day and date of the leave, load adjustment in compliance with the institution's policies. This automated approach enhances transparency and streamlines the

overall leave management process, benefiting both employees and the administrative department.

Problem Statement

Manual management of employee records presents numerous challenges. For example, in processes like leave management, employees often encounter delays as their leave forms can take considerable time to be approved. Additionally, many organizations store employee records in physical in the files/ rooms located within administrative blocks, creating difficulties in accessing information remotely or retrieving accurate leave records.

To overcome these challenges, the implementation of a web-based employee's leave management application system is recommended. This system securely stores and manages employee records in a database that is accessible only to authorized administrators. The primary objective of the "web-based employee leave management application system" is to develop a computerized solution for efficient leave management. By replacing the existing manual paper-based process, this system aims to reduce storage requirements and ensure that all records are digitally stored for convenient future reference. This aims to paperless work (to save papers) and green initiative by the institution.

Design Methodology

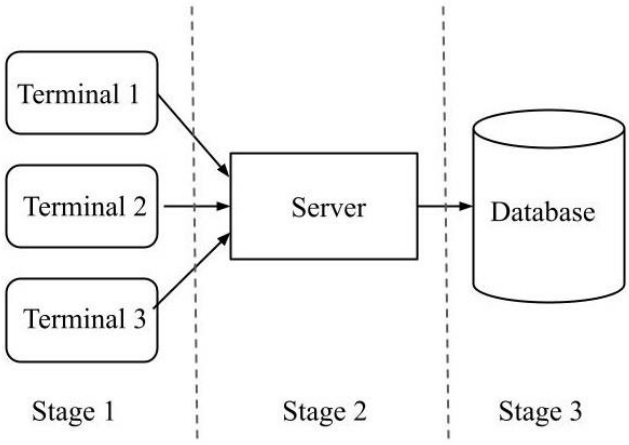

Fig.1 Three Stage Diagram

The employee's leave management system follows a three-stage system model which is developed using different programming languages. This architecture operates on a client/server model, with the web server serving as a vital component. The first stage, known as the presentation stage, involves the client-side of the system. It showcases the Graphical User Interface (GUI) developed using HTML, CSS, and JavaScript. All HTML forms and content displayed on the client's browser are part of this stage. CSS is applied through the web browser, which communicates with the business stage and data through API calls. The second stage, also referred to as the business logic stage, acts as the middle layer. It comprises the application server built using a web server and is responsible for executing the actual data processing. This stage incorporates PHP coding and handles the communication between the presentation and data stages. The third stage, known as the data stage, is developed using MySQL and encompasses methods and classes that handle data storage and retrieval within the database (storage layer). Queries are utilized to access data and perform other database

operations. Data received from the presentation stage is stored in the database, and this stage manages all read and write interactions with the database.

Proposed Architecture

The faculty user applies for leave using the application on their terminal PC or mobile device. They can then check the status of their leave in the status tab. Additionally, a notification is sent to the load adjusting faculty. The load adjusting faculties can choose to accept or reject the workload adjustment.

Once all the faculties have accepted the load adjustment, the leave application is forwarded to the Head of Department (HOD) with a notification sent to their phone number.

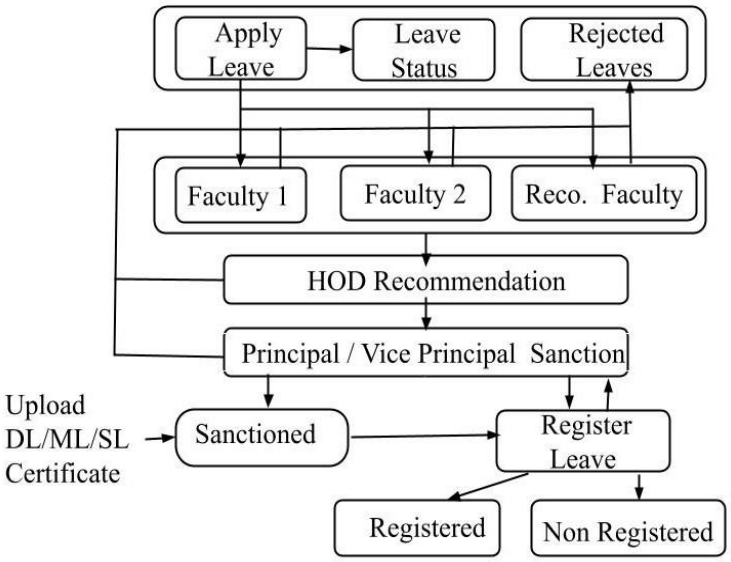

Fig.2 Architecture of Leave Management System

Subsequently, after the HOD's recommendation, the leave application is forwarded to the principal's login, where the leave is officially sanctioned, and a notification is sent to the user.

Flow Chart of system

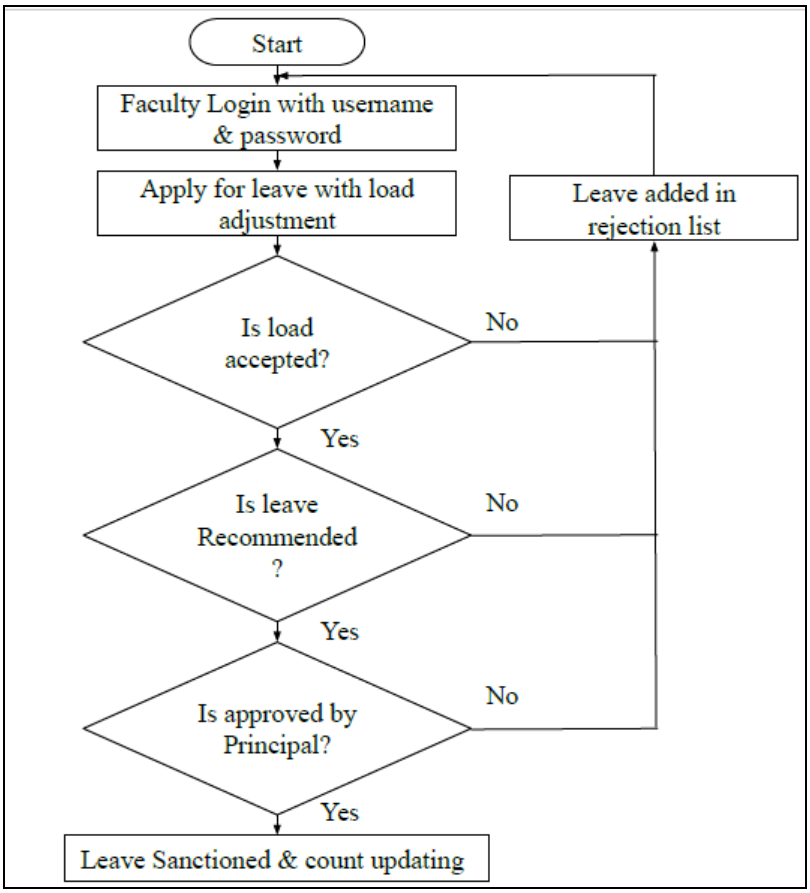

Fig.3 Flow Chart

Algorithm

Step 1: Faculty will login into the system with login credentials
Step 2: Faculty will apply the leave with load adjustment
Step 3: Once leave received to adjutant faculty he/she will accept or reject the load.
Step 4: After load acceptance, it will be forwarded to the HOD for recommendation.
Step 5: Finally leave will reaches into principal login for final decision.
Step 6: Leave approved status & count will be reflected in faculty login for further notification

Advantages:

After implementation of Leave management system following are the advantage

1. User friendly
2. Paperless system
3. Maintain Leave record automatically
4. Faculty easily knows the status of the leave
5. Simple, saves time
6. Leave can be applied by 24x7

Conclusion

The Leave Management System is an invaluable tool for institutions, enabling them to effectively maintain and track employee leave records. This comprehensive system not only handles the management of staff leave records but also facilitates the submission and processing of leave applications. By incorporating an approval process, it allows higher authorities to accept or reject staff leave requests, thus streamlining the institution's leave management workload.

Furthermore, this system actively works towards reducing unnecessary formalities and delays that often occur during the leave approval process. It empowers faculty members to swiftly and efficiently seek approval for their leaves, eliminating unnecessary paperwork and delays.

In summary, the Leave Management System serves as a crucial asset to institutions, easing the burden of leave record maintenance and simplifying the leave application and approval process for staff members.

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