

Development of a Leave Management System for an Office.

Subject Code:- CS4173

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Objective

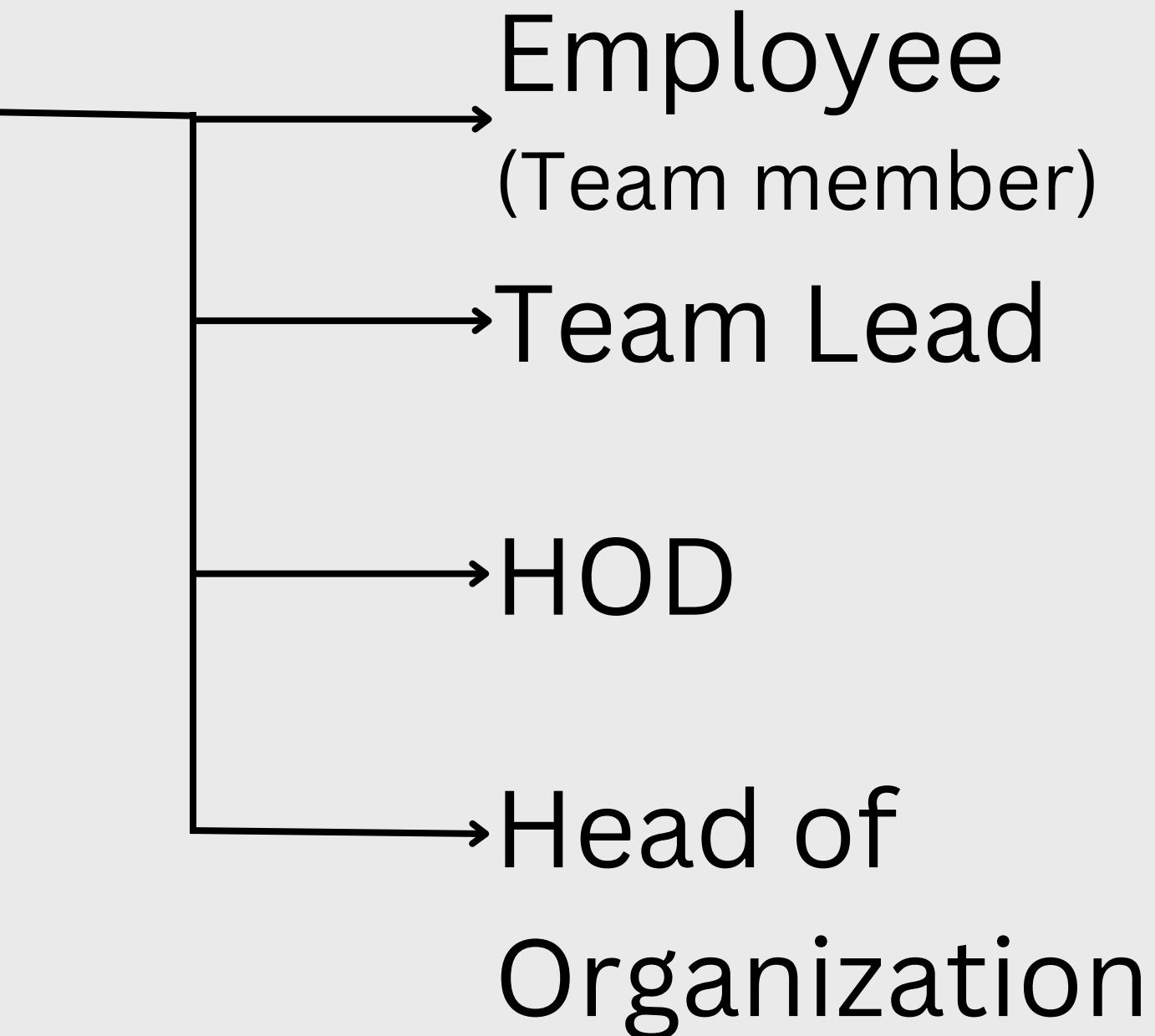
Existing System

- In the current system, Employee has to suffer a lot of problems and formalities for the approval of leave.
- No proper coordination between users.
- No proper database is maintained to store the leave information.

Proposed System

USERS

- ADMIN
- EMPLOYEE



- In this system, employees can submit leave requests through a leave management portal. Once a leave request is submitted, it is reflected on the employee's immediate supervisor portal for review.
- The supervisor has the authority to either approve, reject, or forward the leave request to their own superior for further review. This forwarding mechanism allows the leave request to be escalated through the hierarchy until a final decision is taken.

- Ultimately, the decision on the leave request is made by the highest-level authority in the organization, based upon the rules and policies for approving the leave requests. This hierarchical approval process ensures that leave requests are reviewed and managed efficiently.

Functionalities

ADMIN

- 1.** Entitled to access the Database.
- 2.** Generate a new department.
- 3.** Generate a new user account.
- 4.** Is empowered to make changes to user particulars

Admin Functionalities:-

ACCESS

- Admins can see and manage all Employee related information.

NEW USER

- Admins can see and manage all leave-related data, helping them make informed decisions.

DELETE

- Admins can delete user accounts, ensuring an updated and secure user list..

MODIFY

- The admin has the capability to modify user details, allowing for accurate and current employee information within the leave management portal.

USER

- 1.** Update personal information.
- 2.** Apply for a Leave Request.
- 3.** approve/decline for the leave requested by their direct reports.
- 4.** Refer the leave application to a higher level for approval

User Functionalities:-

UPDATE

- Personal information updating portal for the users like mobile number

REQUEST

- Users can request time off through the portal, simplifying the leave application process.

DECISION

- Supervisors(Superiors) have the authority to approve leave requests submitted by employees reporting to them, facilitating efficient workflow management.

FORWORD

- Need a higher-up's approval? You can send your leave request to them directly through the system..

User Functionalities:-

- **User Authentication and Role-Based Access:**

Implement secure user authentication with email and password.

- **Leave Request Submission:**

Employees should be able to submit leave requests through the system. Include fields for leave type, start date, end date, reason.

- **Leave Request Tracking:**

Provide a dashboard for employees to track the status of their leave request .

User Functionalities:-

- **Hierarchical Approval Workflow:**

Design a workflow where leave requests move through hierarchical levels of approval. An employee's leave request should first be approved, rejected, or forwarded by their Team Head. If approved, the request will then be forwarded to the respective HOD for final approval. HODs can approve, reject, or forward requests from their team members.

Finally, the Head of Organization will review and approve or reject leave requests from all departments.

Tech Stack

Choosen Tech Stack

- Web frontend:-

React JS & Tail-Wind CSS

- Web backend:-

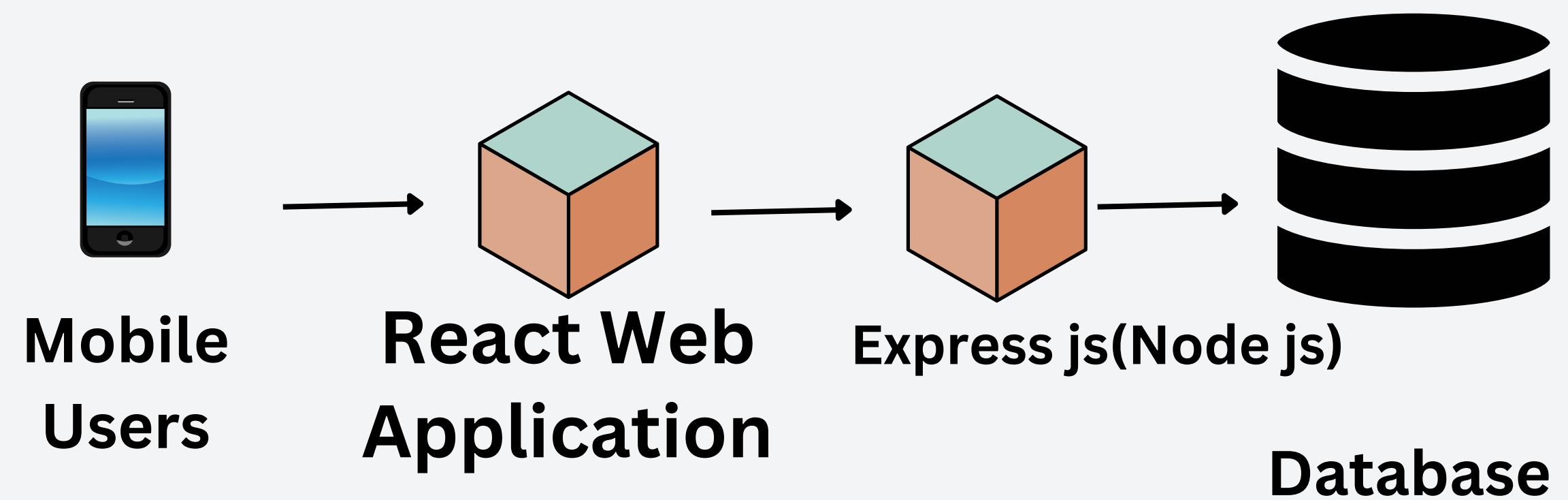
Express JS(Node Js)

- API:

REST API

- Database:

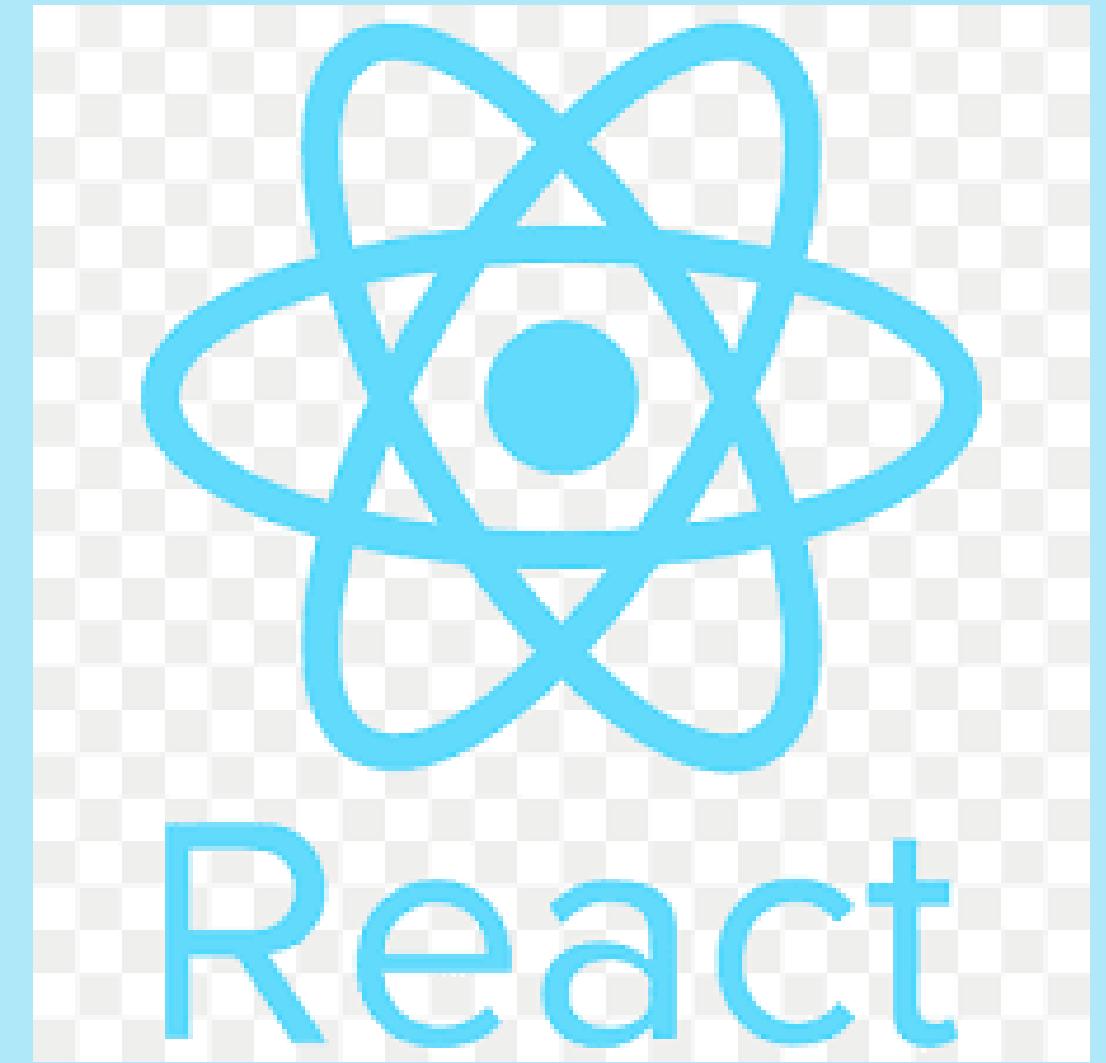
MongoDB



React.Js

React.js is a JavaScript library used for building user interfaces for:

- Component-Based Architecture: React.js utilizes a component-based architecture, enabling the creation of reusable UI components. This modularity enhances code reusability, simplifies maintenance, and streamlines development
- Virtual DOM: React.js employs a virtual DOM, optimizing performance by minimizing actual DOM manipulation, resulting in faster updates and improved rendering speed.



Express.Js



- Lightweight Framework: Express.js for Node.js is known for its simplicity and minimalism, making it excellent for web app and API development.
- Middleware and Flexibility: It offers robust middleware support, allowing developers to enhance functionality, and is highly extensible for flexible development.

Node.Js



- JavaScript Runtime for Servers: Node.js extends JavaScript to server-side development using Chrome's V8 engine.
- Efficient and Scalable: Known for an event-driven, non-blocking architecture, Node.js excels in real-time applications, offering efficient, scalable solutions for server-side development.

MongoDB:

- MongoDB is a widely used NoSQL database management system known for its flexibility, scalability, and performance.
- MongoDB supports CRUD (Create, Read, Update, Delete) operations, which are fundamental for interacting with data in a database. Here's how MongoDB handles CRUD operations:



Snap Shots

Sign in

The entry point for all users
will be through this login page.

Welcome to Leave Management System

Sign in to your account

Your email

Password

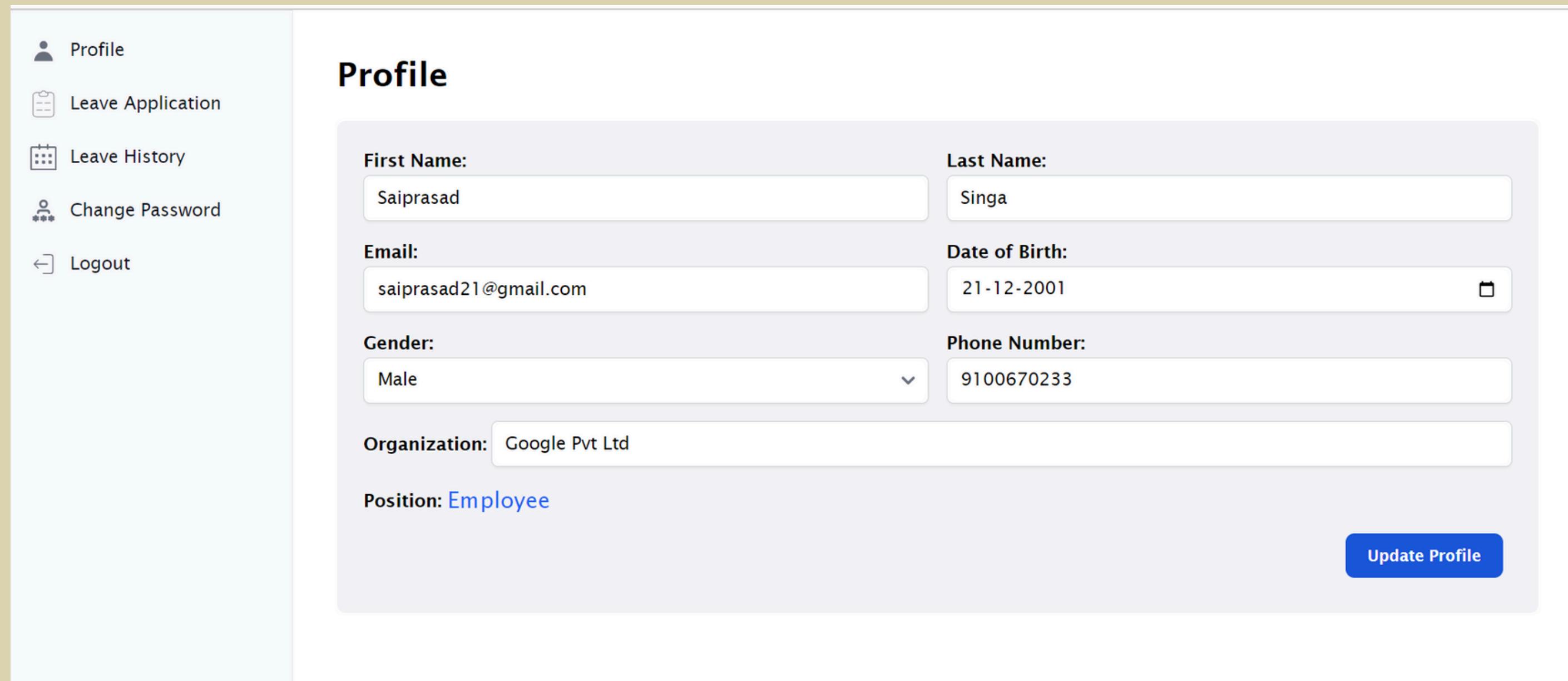
Select User Type

User Admin

Sign in

This screenshot shows the login interface of a Leave Management System. At the top, a blue header bar displays the text "Welcome to Leave Management System". Below this, a white sign-in form is centered. The form has a title "Sign in to your account". It contains two input fields: one for "Your email" with the value "saiprasad21@gmail.com" and another for "Password" with placeholder dots. Below these fields is a "Select User Type" section with two radio buttons: "User" (which is selected) and "Admin". At the bottom of the form is a large blue "Sign in" button.

Profile



The screenshot shows a user interface for updating a profile. On the left is a sidebar with icons and labels: Profile (selected), Leave Application, Leave History, Change Password, and Logout. The main area has a title 'Profile' and a form with the following fields:

First Name:	Saiprasad	Last Name:	Singa
Email:	saiprasad21@gmail.com	Date of Birth:	21-12-2001
Gender:	Male	Phone Number:	9100670233
Organization:	Google Pvt Ltd		
Position:	Employee		

A blue 'Update Profile' button is at the bottom right.

Users has the ability to update the profile.

Admin Dashboard

The screenshot displays the Admin Dashboard interface. On the left, a vertical navigation menu is visible, featuring the following items:

- Dashboard
- Department
- Leave Type
- Employee
- Logout

The main content area is titled "Admin Dashboard" and contains three separate buttons, each enclosed in a rounded rectangular box:

- Create Employee** (with a "Create" button below it)
- Create Department** (with a "Create" button below it)
- Create Leave Type** (with a "Create" button below it)

Leave Application

The screenshot shows a user interface for submitting a leave application. On the left, a vertical sidebar contains navigation links: Profile, Leave Application (which is selected and highlighted in blue), Leave History, Change Password, and Logout. The main content area is titled "Leave Application". It includes fields for "Start Date" (11-05-2024) and "End Date" (12-05-2024), both with calendar icons. A "Reason" field contains the text "Going to picnic.". Below these, a "Leave Type" dropdown menu is set to "Casual leave". A "No Of Days" field shows the value "2". At the bottom right is a blue "Submit Request" button.

Profile

Leave Application

Leave History

Change Password

Logout

Leave Application

Start Date: 11-05-2024

End Date: 12-05-2024

Reason:

Going to picnic.

Leave Type:

Casual leave

No Of Days: 2

Submit Request

Users can submit leave requests, indicating the leave type, start and end dates, along with the reason.

Leave Requests

The screenshot shows a user interface for managing leave requests. On the left, a vertical sidebar contains navigation links: Profile, Leaves (selected), Leave Application, Leave History, Change Password, and Logout. The main area is titled "Leave Requests" and displays a table with one row. The table columns are Name, Type of Leave, No of Days, and Action. The data in the table is as follows:

Name	Type of Leave	No of Days	Action
Saiprasad Singa	Sick leave	2	<button>Accept</button> <button>Forward</button> <button>Reject</button>

The supervisor has the authority to forward, or reject employee leave requests

Department List

- [!\[\]\(6df338dd715bbe7911d6479449162f5f_img.jpg\) Dashboard](#)
- [!\[\]\(1d6c7f6edaa299b0b08e9f5b9941e2aa_img.jpg\) Department](#)
- [!\[\]\(ae6d9a59d30588dd82325381d37f2d84_img.jpg\) Leave Type](#)
- [!\[\]\(eb78c30c39209ffa46109a2ce7e10f4a_img.jpg\) Employee](#)
- [!\[\]\(69b51a5d833c67b51985db949e945289_img.jpg\) Logout](#)

Department List

Sl. No.	Department Name	Status
1	Administration	Active
2	Human Resource	Active
3	Finance and Accounts	Active
4	Marketing	Active
5	Information and Technology	Active
6	Research and Development	Active

Database Collections

Collections :-

Mainly four collection are used for this leave management portal .They are

- Employee
- Department
- Leave
- LeaveType

Future Work

- Calendar Integration:
Integrate calendar applications to display leave schedules.
- Mobile Application:
Develop a mobile app for accessing leave management functionalities.
- Advanced Reporting:
Generate detailed reports on leave trends and patterns for better decision-making.

References

<https://react.dev/learn/passing-props-to-a-component>

<https://tailwindui.com/components?ref=sidebar>

<https://sequelize.org/docs/v6/core-concepts/model-instances/>

<https://dev.mysql.com/doc/>

Conclusion

Conclusion

Our Leave Management System offers a comprehensive solution for managing employee leave effectively. By automating processes and providing intuitive interfaces, the system improves efficiency and transparency in leave management. With ongoing enhancements and future integrations, the system will continue to evolve to meet the changing needs of organizations.

Thank You