

Leave Management System

Built by Vayineni Devi Malini for Flipkart Task-1



Last Updated: 10 August 2025

A comprehensive web-based Leave Management System built with Flask, SQLAlchemy, and modern HTML/CSS.

Overview

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The Employee Leave Management System (ELMS) is a comprehensive web application designed to streamline and automate the process of managing employee leave requests. It provides features for employees to request leave, managers to approve/reject requests, and administrators to manage the system and generate reports.

Features

- **User Authentication:** Secure login for employees, managers, and administrators
 - **User Roles:** Admin, Manager, and Employee with different permissions
 - **Leave Request Workflow:** Submit, approve, reject, and cancel leave requests
 - **Dashboard:** Overview of leave statistics and recent requests
 - **Reporting:** Generate CSV and PDF reports
 - **User Management:** Admin can create and manage users
 - **Profile Management:** Users can update their profiles and change passwords
 - **Responsive Design:** Works on desktop and mobile devices
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Technology Stack

- **Frontend:** HTML5, CSS3, JavaScript, Bootstrap 5
- **Backend:** Python, Flask
- **Database:** SQLite (with SQLAlchemy ORM)
- **Authentication:** Flask-Login
- **Reporting:** CSV, PDF generation

Installation

1. Clone the repository:

```
git clone https://github.com/malini-30/leave-management-system.git cd leave-management-system
```

2. **Create and activate** a **virtual** environment:

```
``bash  
python -m venv venv  
source venv/bin/activate # On Windows use `venv\Scripts\activate`
```

3. Install dependencies:

```
pip install -r requirements.txt
```

4. Initialize the database:

```
python app.py
```

5. Run the application:

```
python app.py
```

6. Access the application at : `http://localhost:127.0.0.1:5000`

Default Users

The system creates default users when first initialized:

- Admin:

```
Username: admin
Password: admin123
```

- Manager:

```
Username: manager
Password: mng123
```

- Employee:

```
Username: employee
Password: employee123
```

Project Structure

```
leave-management-system/
├── app.py                # Main application file
├── templates/           # HTML templates
│   ├── _flash_messages.html
│   ├── _leave_status_badge.html
│   ├── _pagination.html
│   ├── 404.html
│   ├── 500.html
│   ├── base.html
│   ├── change_password.html
│   ├── dashboard.html
│   ├── leave_requests.html
│   ├── login.html
│   ├── new_leave_request.html
│   ├── new_user.html
│   ├── profile.html
│   ├── reports.html
│   ├── users.html
│   └── view_leave_request.html
├── README.md            # This file
└── requirements.txt     # Python dependencies
```

Individual Features

Employee Features

- View leave balances
- Submit new leave requests
- Track request status
- View request history

Manager Features

- Approve/reject leave requests
- View team leave calendar
- Monitor pending approvals

Admin Features

- Manage all users
 - Configure leave types
 - Generate system reports
 - Monitor system activity
-

Screenshots

- Login Page

Leave Management Login

Login

Username

Password

Login

- Admin_Dashboard

The screenshot shows a web browser window with the URL `127.0.0.1:5000/dashboard`. The browser has three tabs: "(20) WhatsApp", "Leave Management System - Das...", and "PailaJeevan/ELMS_Project". The dashboard is for a user named "Busi Indu User" with the role "Admin". The left sidebar menu includes: "Dashboard" (selected), "Leave Requests", "Reports", "Users", "Profile", and "Logout". The main content area features a purple welcome banner that says "Welcome back, Busi Indu!" and "Here's what's happening with your leave requests and team activities." Below the banner are five summary cards: "Total Employees" (1), "Team Managers" (1), "Pending Requests" (0), "Approved Requests" (0), and "Rejected Requests" (0). At the bottom, there is a section for "Recent Leave Requests" with a "View All >" link. The Windows taskbar at the bottom shows the search bar and several application icons. The system clock indicates 11:13 AM on 10-Aug-25.

8/10/25, 12:12 PM

Leave Management System

(20) WhatsApp x Leave Management System - Das... x PailaJeevan/ELMS_Project x +

127.0.0.1:5000/dashboard Sign in BU Busi Indu

Search...

Welcome back, Busi Indu!

Here's what's happening with your leave requests and team activities.

1 Total Employees

1 Team Managers

0 Pending Requests

0 Approved Requests

0 Rejected Requests

Recent Leave Requests View All >

Type here to search

11:13 AM 10-Aug-25

- Admin_Profile

The screenshot displays a web browser window with multiple tabs: '(20) WhatsApp', 'My Profile', and 'PailaJeevan/ELMS_Project'. The address bar shows '127.0.0.1:5000/profile'. The page features a dark blue sidebar on the left with a 'BU' logo and the text 'Busi Indu User Admin'. Below this is a 'Menu' section with links for 'Dashboard', 'Leave Requests', and 'Profile'. The main content area has a search bar at the top. On the right, there is a notification bell icon with '3' and a 'BU' profile picture with the name 'Busi Indu'. The central profile card for 'Busi Indu User' (email: indu789@gmail.com, role: Admin) has two tabs: 'Personal Info' (active) and 'Security'. The 'Personal Info' section contains form fields for 'First Name' (filled with 'Busi Indu'), 'Last Name' (filled with 'User'), 'Email' (filled with 'indu789@gmail.com'), and 'Department' (filled with 'Administration'). The Windows taskbar at the bottom shows the search bar and several application icons. The system clock indicates 11:14 AM on 10-Aug-25.

- Admin_Reports

8/10/25, 12:12 PM

Leave Management System

(20) WhatsApp

Reports - Leave Management Sys

PailaJeevan/ELMS_Project

127.0.0.1:5000/reports

Sign in

BU Busi Indu User
Admin

Search...

Reports

Generate Custom Report

Select filters and options to generate a custom leave report

Report Type

Select Report Type

Format

CSV

Start Date

31-Jul-2025

End Date

30-Aug-2025

Generate Report

Quick Reports

Type here to search

11:15 AM
10-Aug-25

- Manager Dashboard

The screenshot shows a web browser window with the URL `127.0.0.1:5000/dashboard`. The browser has three tabs: "(20) WhatsApp", "Leave Management System - Das...", and "PailaJeevan/ELMS_Project". The dashboard is for a user named "Hema Manager".

Left Sidebar (MENU):

- Dashboard (selected)
- Leave Requests
- Reports
- Profile
- Logout

Top Header:

- Search bar: "Search..."
- User profile: "HM Hema" with a dropdown arrow and a notification bell icon with the number 3.

Main Content Area:

- Welcome back, Hema!**
Here's what's happening with your leave requests and team activities.
- Summary Cards:**
 - Team Members: 1
 - Pending Requests: 0
 - Approved Requests: 0
- Recent Leave Requests:**
[View All >](#)
- | Employee | Leave Type | Dates | Days | Status | Actions |
|----------|------------|-------|------|--------|---------|
|----------|------------|-------|------|--------|---------|

Windows Taskbar:

- Search: "Type here to search"
- Icons: Task View, Chrome, Edge, File Explorer, PowerPoint, Word, Outlook, Teams, and a custom icon.
- System Tray: Network, Volume, and Date/Time (11:16 AM, 10-Aug-25).

- Manager Profile

The screenshot displays a web browser window with multiple tabs: '(20) WhatsApp', 'My Profile', and 'PailaJeevan/ELMS_Project'. The address bar shows '127.0.0.1:5000/profile'. The page features a dark blue sidebar on the left with the text 'HM', 'Hema Manager', 'Manager', and a 'Menu' section containing links for 'Dashboard', 'Leave Requests', and 'Profile'. The main content area is titled 'My Profile' and shows a user profile for 'Hema Manager' with the email 'hema456@gmail.com' and a 'Manager' role. Below the profile, there are two tabs: 'Personal Info' (selected) and 'Security'. The 'Personal Info' section contains input fields for 'First Name' (Hema), 'Last Name' (Manager), and 'Email' (hema456@gmail.com). A search bar is located at the top of the main content area. The Windows taskbar at the bottom shows the search bar and several application icons, with the system clock indicating 11:17 AM on 10-Aug-25.

- Manager_Reports

8/10/25, 12:12 PM

Leave Management System

WhatsApp (20) WhatsApp Reports - Leave Management Sys Pailajeevan/ELMS_Project

127.0.0.1:5000/reports

Sign in

HM Hema

Hema Manager
Manager

MENU

- Dashboard
- Leave Requests
- Reports**
- Profile

Reports

Generate Custom Report

Select filters and options to generate a custom leave report

Report Type **Format**

Select Report Type CSV

Start Date **End Date**

31-Jul-2025 30-Aug-2025

Generate Report

- Employee Dashboard

The screenshot displays a web browser window with the following elements:

- Browser Tabs:** (20) WhatsApp, Leave Management System - Das, PailaJeevan/ELMS_Project.
- Address Bar:** 127.0.0.1:5000/dashboard
- Header:** Search bar, Sign in button, and user profile (LE Latha).
- Left Sidebar (MENU):**
 - Dashboard (active)
 - Leave Requests
 - Profile
 - Logout
- Main Content Area:**
 - Welcome back, Latha!** (with a blue background banner and a message: "Here's what's happening with your leave requests and team activities.")
 - Summary Cards:**
 - Pending Requests: 0 (clock icon)
 - Approved Requests: 0 (checkmark icon)
 - Rejected Requests: 0 (X icon)
 - Days Taken This Year: 0 (calendar icon)
 - Recent Leave Requests:** (with a "View All >" link)

The Windows taskbar at the bottom shows the search bar, task view button, and several application icons (Chrome, Edge, File Explorer, etc.). The system clock indicates 11:18 AM on 10-Aug-25.

- Employee Profile

The screenshot shows a web browser window with the address bar displaying `127.0.0.1:5000/profile`. The browser has three tabs: "(20) WhatsApp", "My Profile", and "Pailajeevan/ELMS_Project". The page features a dark blue sidebar on the left with a yellow "LE" logo and the text "Latha Employee", "Employee", and "Menu". The menu includes links for "Dashboard", "Leave Requests", and "Profile". The main content area is titled "My Profile" and contains a profile card for "Latha Employee" with the email "lathal23@gmail.com" and a role of "Employee". Below the profile card, there are tabs for "Personal Info" and "Security". The "Personal Info" tab is active, showing fields for "First Name" (Latha), "Last Name" (Employee), and "Email" (lathal23@gmail.com). A search bar is located at the top right of the main content area. The Windows taskbar at the bottom shows the search bar, task view icon, and several application icons (Chrome, Edge, File Explorer, PowerPoint, Word, Outlook, VS Code, and a game). The system clock indicates 11:19 AM on 10-Aug-25.

- Employee Leave_Request

The screenshot displays a web browser window with the URL `127.0.0.1:5000/leave-requests/new`. The browser tabs include '(20) WhatsApp', 'New Leave Request', and 'PailaJeevan/ELMS_Project'. The page features a dark blue sidebar on the left with a yellow 'LE' logo and the text 'Latha Employee'. Below this is a 'Menu' section with links for 'Dashboard', 'Leave Requests', and 'Profile'. The main content area is titled 'New Leave Request' and includes a search bar at the top right. The form itself has a 'Leave Type' dropdown menu, 'Start Date' and 'End Date' fields with calendar icons, and a 'Reason' text area. The user's profile 'Latha' is visible in the top right corner. The Windows taskbar at the bottom shows the search bar and several application icons.

Database Schema

The system uses the following database tables:

- **User** : Stores employee information
- **LeaveType** : Defines different types of leave
- **LeaveRequest** : Tracks all leave requests
- **LeaveBalance** : Maintains leave balances for employees

Future Enhancements:

- Email notifications for leave request status changes
 - Calender view of approved leaves
 - Leave balance tracking
 - Multi-language support
 - API endpoints for mobile applications
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Acknowledgements

- Flask documentation
 - Font Awesome for icons
 - Various open source projects that inspired this work
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License

This project is licensed under the MIT License. See the LICENSE file for details.

Contributing

Contributions are welcome! Please fork the repository and submit a pull request with your changes.

Contact

For questions or support, please contact the project maintainer at 23jr1a4494@gmail.com