Software Engineering

Deliverable 1

Employee Payroll and Leave Management System

Team Name: **Triovate**

Team Members:

Abdullah Aslam	22i 0784
Abdur-Raheem Shaikh	22i 0777
Afrah Syed	22i 1008

Project Team Information:

Team Name:

Triovate

Team Logo:

Group Picture:

Introductions:

1. **Abdullah Aslam:**

Role: Developer

Meet Abdullah Aslam! a Junior NLP Engineer passionate about building intelligent language models. With a strong background in machine learning and natural language processing, he focuses on creating efficient AI solutions. Outside of work, he enjoys watching and playing cricket, combining his analytical thinking with his love for sports.

GitHub: https://github.com/AbdullahAslam1207

2. **Abdur Raheem Shaikh:**

Role: Scrum Master

Meet Abdur Raheem! a tech enthusiast with a strong passion for software development, artificial intelligence, and networking. He enjoys solving complex problems, building efficient systems, and exploring new technologies. With experience in programming language development and network design, he constantly seeks to expand his knowledge and create impactful tech solutions.

GitHub: https://github.com/abdurraheemshaikh

3. **Afrah Syed:**

Meet Afrah Syed a front-end developer with experience in creating dynamic and interactive web applications. Eager to learn new technologies, she enjoys exploring different fields of tech and expanding her skills. Outside of work, she loves adventures, discovering new places, and engaging in creative pursuits that fuel her curiosity.

GitHub: https://github.com/AfrahSyed

Role: Developer and UI Designer

Team Agreement:

1. Methods of Communication

To ensure effective collaboration, the team will use multiple communication channels:

- **Primary**: WhatsApp (for quick updates, discussions, and coordination).
- **Secondary**: Email (for formal communications and sharing important documents).
- **Tertiary**: Google Meet/Microsoft Teams (for virtual meetings and discussions).
- **Emergency Contact**: Phone calls (for urgent matters).

2. Communication Response Times

To maintain efficiency, the team agrees on the following response times:

- **WhatsApp/Messenger**: Within **2 hours** during working hours (9 AM - 10 PM).
- **Email**: Within **24 hours** of receiving an email.
- **Phone Calls**: Should be answered immediately if possible or returned within **1 hour**.

3. Meeting Attendance

- **Regular Meetings**: The team will meet **twice a week** (days/times decided based on availability).
- **Mandatory Attendance**: All members are required to attend meetings unless there is a valid excuse.
- **Consequence of Absence**: A member missing two consecutive meetings without informing the team must provide a valid reason.

4. Running Meetings

- **Format**: Meetings will be conducted online via Google Meet unless an in-person meeting is required.
- **Agenda**: Shared at least **24 hours before** the meeting.

5. Meeting Preparation

- Each member is expected to review the agenda and come prepared with updates on their assigned tasks.
- Any research or coding required for discussion should be completed beforehand.
- Members should bring questions or concerns related to their tasks.

6. Version Control

- **Platform**: GitHub will be used for version control.
- **Commit Guidelines**:
  - Descriptive commit messages (e.g., `"Fixed login bug in authentication module"`).
  - Frequent commits to avoid large, unmanageable changes.
  - No committing broken code to the main branch.
- **Branching Strategy**:
  - `main` (stable version)
  - `dev` (development branch)
  - Feature branches (`feature-xyz`) for individual tasks.

7. Division of Work

- Work will be divided based on skills, expertise, and interest.
- All members are responsible for completing their assigned work within the agreed deadlines.

8. Submitting Assignments

- **Review Process**: One member will review the submission for accuracy and consistency.
- **Final Submission**: A team member will submit the assignment after approval from all members.

G. Contingency Planning

- **If a team member drops out**: Tasks will be redistributed among remaining members, and the team will notify the instructor.
- **If a team member consistently misses meetings**: A private discussion will be held to address concerns. If the issue persists, the instructor will be informed.

- **If a team member is academically dishonest**: The team will report the issue to the instructor and will not support any form of plagiarism or misconduct.

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1. Sprint Backlog:

a. Name of the Module:

User Authentication s Leave Management

b. User Stories for Sprint 1

User Story 1: Employee and Manager Registration

- **As a** new user (employee or manager)
- **I want** to register in the system
- **So that** I can access my relevant features

Sub User Stories:

1. As a user, I should be able to sign up with my name, email, and password.
2. As a user, I should select my role (Employee or Manager) during registration.
3. As a user, my account should be verified via email before I can log in.
4. As a user, I should be redirected to the login page after successful registration.

User Story 2: Login and Role-based Dashboard

- **As a** registered user
- **I want** to log in to the system
- **So that** I can access my dashboard with role-specific features

Sub User Stories:

1. As an employee, I should see my leave balance and payroll summary on my dashboard.
2. As a manager, I should see pending leave requests and team details on my dashboard.
3. As a user, I should be redirected to my respective dashboard after successful login.
4. As a user, I should be logged out securely when I click on the logout button.

User Story 3: Apply for Leave (For Employees)

- **As an** employee

- **I want** to apply for leave through the system
- **So that** my request is submitted to my manager for approval

Sub User Stories:

1. As an employee, I should be able to select the leave type (Annual, Sick, Casual).
2. As an employee, I should enter the start and end date of my leave.
3. As an employee, I should receive a confirmation email after applying for leave.
4. As an employee, I should be notified when my leave request is approved or rejected.

User Story 4: Approve or Reject Leave Requests (For Managers)

- **As a** manager
- **I want** to approve or reject leave requests submitted by employees
- **So that** I can manage employee leave effectively

Sub User Stories:

1. As a manager, I should be able to see all pending leave requests.
2. As a manager, I should be able to view employee leave history before making a decision.
3. As a manager, I should provide a reason when rejecting a leave request.
4. As a manager, I should be able to filter leave requests by employee name and leave type.

User Story 5: View Leave Balance (For Employees)

- **As an** employee
- **I want** to check my remaining leave balance
- **So that** I can plan my future leaves accordingly

Sub User Stories:

1. As an employee, I should be able to see a breakdown of my leave balance.
2. As an employee, I should see my used and remaining leaves categorized by type.

Structured Specification for "Apply for Leave (For Employees)"

1. Preconditions:

- The user must be logged in as an employee.
- The user must have a valid leave balance.
- The leave request should not overlap with existing approved leaves.

2. Postconditions:

- The leave request is submitted and stored in the system.
- The employee receives a confirmation email.
- The manager is notified about the pending leave request.

3. Main Flow:

1. The employee navigates to the "Apply for Leave" section.
2. The employee selects the leave type (Annual, Sick, Casual, etc.).
3. The employee enters the start and end dates for the leave.
4. The employee provides an optional reason for the leave.
5. The system checks the leave balance and validates the request.
6. The leave request is stored in the database with a **"Pending"** status.
7. A confirmation email is sent to the employee.
8. A notification is sent to the manager for approval.

4. Alternative Flow:

Scenario 1: Insufficient Leave Balance

- The system displays an error message: **"Insufficient leave balance. Please check your available leave days."**
- The employee is asked to modify their leave request.

Scenario 2: Leave Request Overlaps with an Existing Approved Leave

- The system prevents submission and displays: **"You already have approved leave for these dates."**

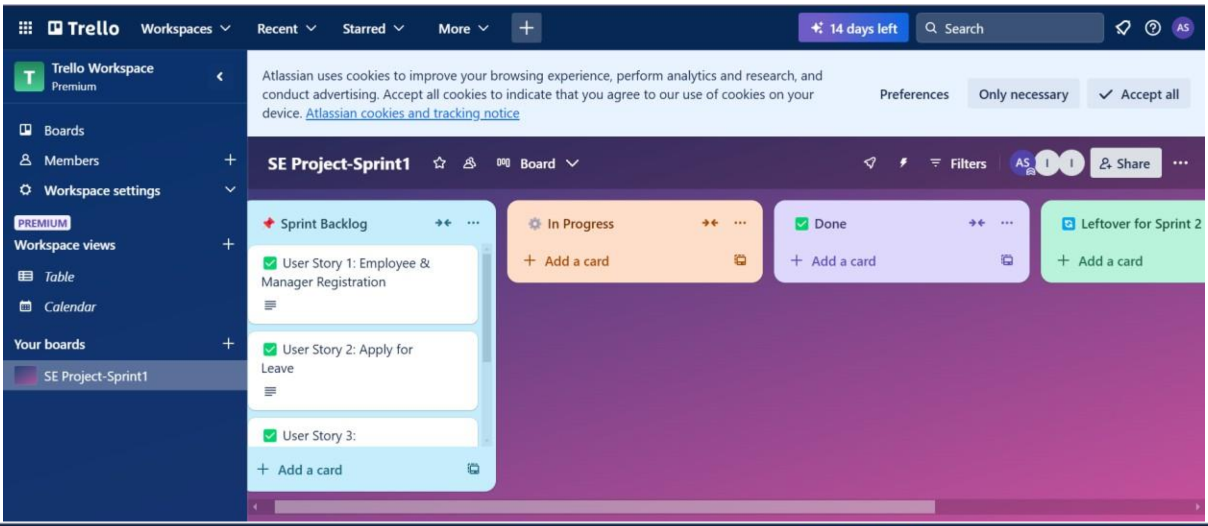
Scenario 3: Employee Enters Invalid Dates (End Date Before Start Date)

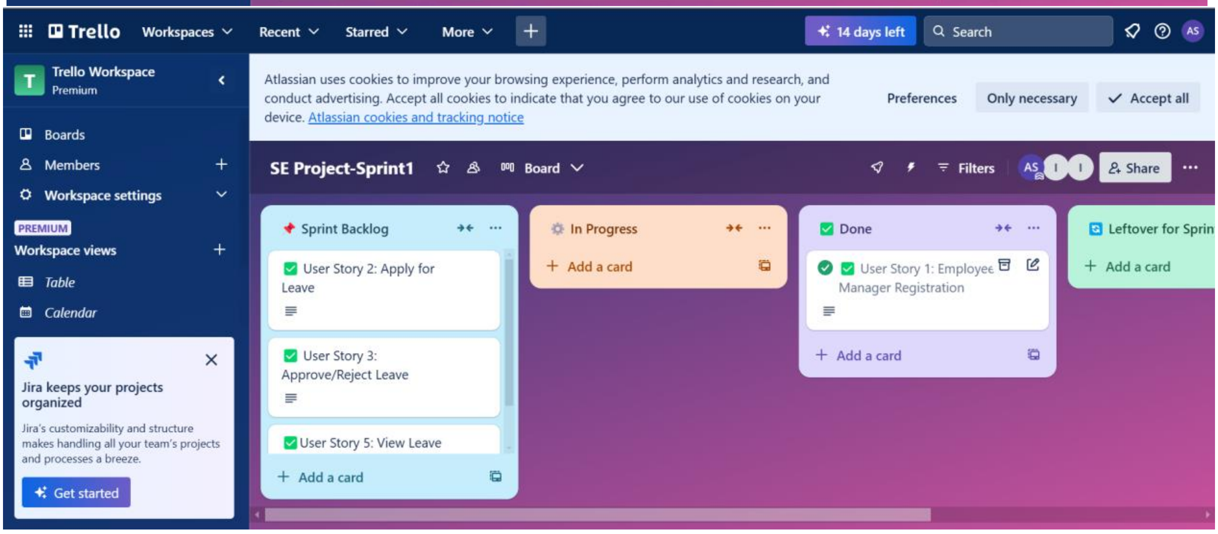
- The system displays an error: **"End date cannot be before the start date. Please correct the dates."**

Scenario 4: System Failure While Submitting

- The system displays: **"An error occurred while submitting your request. Please try again later."**

2. Scrum Board:

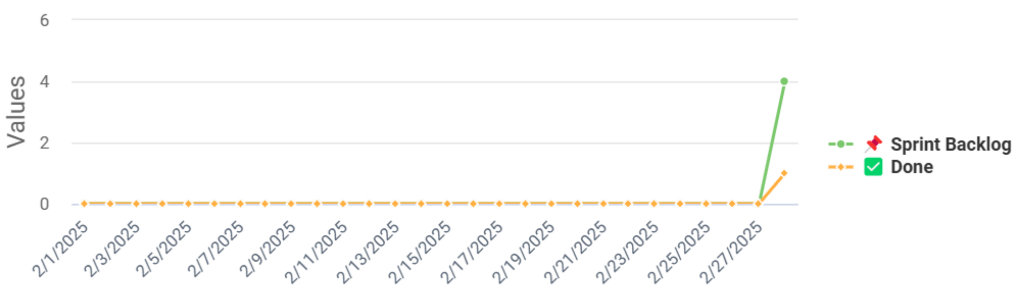




Burn Down Chart:

Burndown

Daily



Introduction

Project Vision

The **Employee Payroll and Leave Management** system aims to simplify and automate payroll processing and leave management for organizations. The system will provide secure authentication, efficient leave tracking, and salary calculations while ensuring compliance with company policies.

Intended Use of the System

Who will use the system?

- **HR Department** – Manage payroll and leave requests.
- **Employees** – Apply for leave and check salary details.
- **Management** – Oversee payroll reports and employee attendance.

How will they use the system?

- **HR Department:** Process salary payments, approve/reject leave requests, and generate reports.
- **Employees:** Submit leave requests and view salary details.
- **Management:** Monitor payroll and leave trends to make strategic decisions.

Identifying Stakeholders and Their Needs

Stakeholders:

1. Employees
2. HR Department
3. Management
4. Finance Team

Stakeholder Needs:

- Employees need an intuitive system to request leave and track payroll.
- HR requires a streamlined process to manage employee records and payroll processing.
- Management needs insights into workforce availability and payroll expenses.
- The finance team needs accurate payroll reports for auditing and financial planning.

Features/Overall Functionality

What Will the System Do?

1. **User Authentication:** Secure login and role-based access.
2. **Leave Management:** Employees can request leave, HR can approve/reject, and leave balance is tracked.
3. **Payroll Processing:** Automated salary calculations, deductions, and payslip generation.
4. **Employee Management:** Centralized records of employee details.
5. **Reports & Analytics:** Payroll reports, leave reports, and employee attendance tracking.

How Will the System Help Users Accomplish Their Tasks?

- **Employees** can easily manage their leaves without paperwork.
- **HR** can efficiently track and approve leave requests.
- **Finance & Management** can ensure accurate payroll processing.

User Stories

1. **Employee and Manager Registration**
    - New users (employees or managers) can register and access relevant features.
    - Users must provide name, email, password, and select a role.
    - Email verification is required before login.
2. **Login and Role-based Dashboard**
    - Registered users can log in and access their specific dashboard.
    - Employees see leave balance and payroll summary.
    - Managers see pending leave requests and team details.
3. **Apply for Leave (For Employees)**
    - Employees can apply for leave by selecting the leave type, the start/end date.
    - They receive confirmation emails and notifications for approvals/rejections.
4. **Approve or Reject Leave Requests (For Managers)**
    - Managers can approve/reject leave requests and view employee leave history.
    - Rejections must include a reason.
    - Leave requests can be filtered by employee name and type.
5. **View Leave Balance (For Employees)**
    - Employees can check remaining leave balance and usage details.

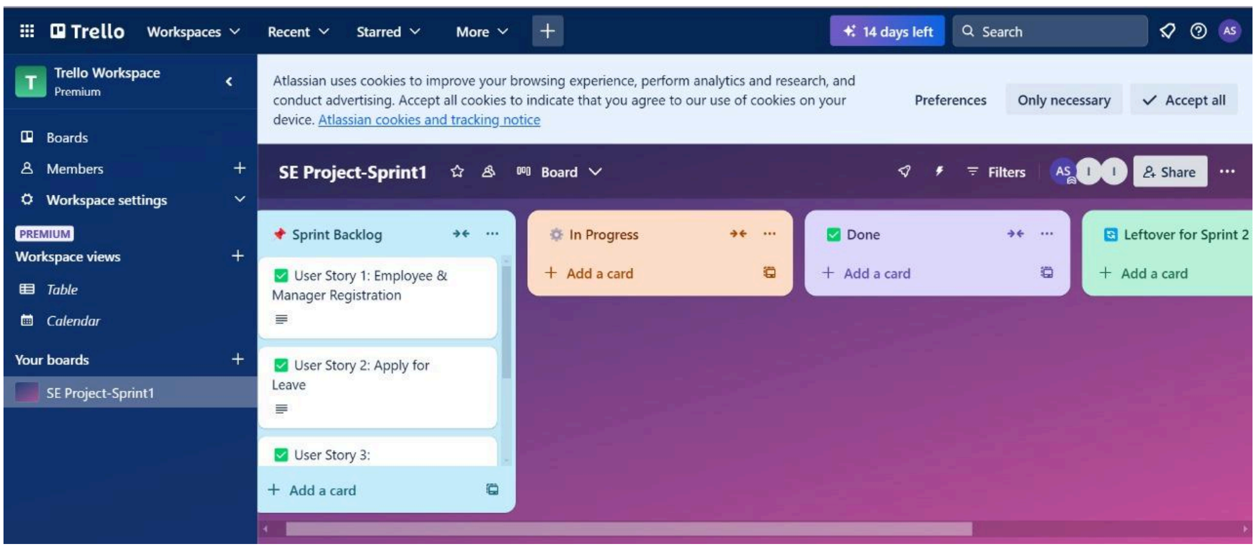
Structured Specifications

User Story	Description	Acceptance Criteria
Employee Login	Employees should log in using their credentials	Successful login redirects to dashboard
HR Role Management	HR should have admin access	HR can manage payroll and leave approvals

Leave Request	Employees should submit leave requests	HR receives a notification for approval
Leave Approval	HR can approve/reject leave requests	Leave status updates in the system

Scrum Board

Sprint 1 - User Authentication & Leave Management



NFR Specification (Natural Language)

- **Performance:** The system should process login requests within 2 seconds.
- **Security:** User passwords should be stored using encryption.
- **Availability:** The system should be accessible 24/7 with 99.9% uptime.
- **Scalability:** The system should support up to 500 concurrent users.

Work Division

Task	Team Member
User Authentication (Login & Role-based Access)	Abdullah Aslam
Leave Management (Request & Approval)	Abdur-Raheem
System Testing & Documentation	Afrah Syed