

Architecture Page

System Overview

AshesiInsider is built using a three-tier architecture consisting of a React frontend, a Node.js/Express backend, and a PostgreSQL database. The system allows students to rate lecturers, hostels, and restaurants, while admins access a dashboard to monitor and manage reviews.

Frontend (React)

The frontend is implemented with React, which handles all user-facing pages and interactions.

Key pages include:

- Login Page – Users enter credentials.
- Signup Page – New users register an account.
- Homepage – Main navigation for all review sections.
- Lecturers / Hostels / Restaurants Pages – Display lists and allow users to open rating forms.
- Rating Form – Students submit ratings and comments.
- Admin Dashboard – Accessible only to admin accounts after login.

React communicates with the backend using HTTP requests (fetch/axios) and displays the responses returned as JSON.

Backend (Node.js + Express)

The backend uses Express. Its main responsibilities are:

- Handling authentication (login, signup).
- Retrieving entity data (lecturers, hostels, restaurants).
- Saving new reviews submitted by users.
- Checking whether a user is an admin.
- Providing protected admin routes for moderating data.

All data is sent between the backend and frontend in JSON format.

Database (PostgreSQL)

The system uses PostgreSQL to store all persistent data.

The main tables include:

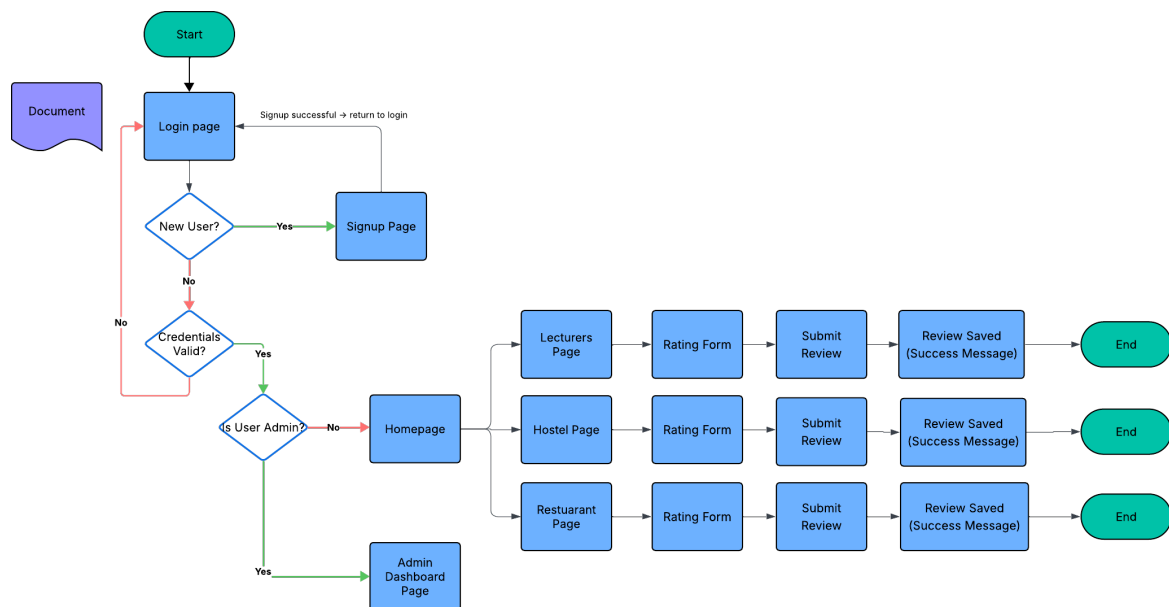
- users – Stores user accounts, roles (student/admin), and passwords (hashed).
- lecturers, hostels, restaurants – Store basic information about each entity.
- reviews – Stores ratings and comments linked to users and entities.

PostgreSQL ensures data integrity through primary keys, foreign keys, and constraints (e.g., rating must be between 1 and 5).

Data Flow (How the System Works)

1. React sends a request (e.g., “get all lecturers” or “submit review”).
2. Express receives the request, processes it, and runs SQL queries.
3. PostgreSQL returns the results to the backend.
4. Express sends the data back as JSON.
5. React updates the UI to show the results (lists, ratings, confirmations).

Flowchart



Remaining Functionality

The main student features of AshesiInsider (including login, signup, homepage navigation, and the rating pages) have been completed. The only major component left to finish is the admin dashboard.

The remaining work includes:

- Adding the actual Admin Dashboard page
- Displaying basic admin information (users, reviews, entities)

- Allowing admins to view or remove reviews
- Connecting the dashboard to the backend and PostgreSQL

Once the Admin Dashboard is implemented, all core features of the project will be complete.