

Project Design Phase-II Technology Stack (Architecture & Stack)

Date	16 April 2025
Team ID	SWTID1743606103
Project Name	iMovies - Online Movie Ticket Booking System
Maximum Marks	4 Marks

Technical Architecture:

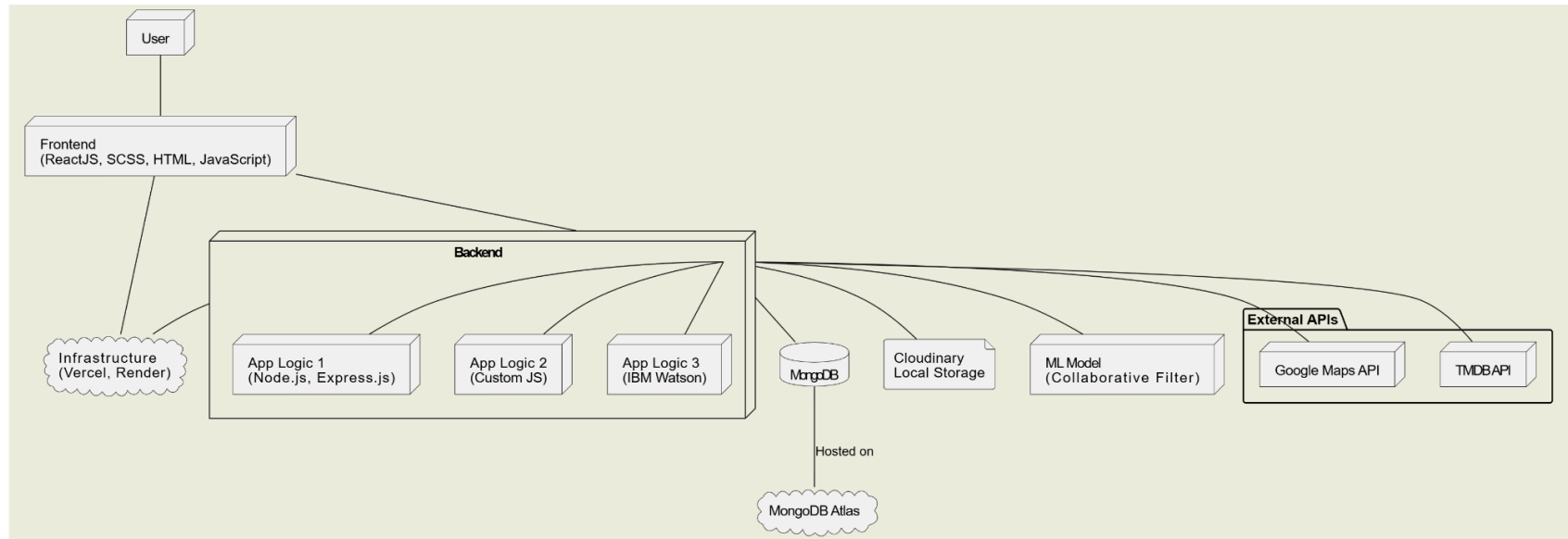


Table-1 : Components & Technologies:

S.No	Component	Description	Technology
1.	User Interface	How users interact with the application	ReactJS, SCSS, HTML, JavaScript
2.	Application Logic-1	Logic for booking flow and authentication	Node.js, Express.js
3.	Application Logic-2	Logic for recommendations and tagging	Custom logic with JavaScript
4.	Application Logic-3	Chatbot for booking help	IBM Watson Assistant
5.	Database	Data storage for users, bookings, movies, etc.	MongoDB (NoSQL)
6.	Cloud Database	Hosted NoSQL database	MongoDB Atlas
7.	File Storage	Poster images and trailers	Cloudinary, Local Storage
8.	External API-1	For location-based theater suggestions	Google Maps API
9.	External API-2	For movie data enrichment	TMDB API
10	Machine Learning Model	For personalized recommendations	Movie-tag based collaborative filter
11	Infrastructure	Hosting and deployment	Vercel (Frontend), Render (Backend)

Table-2: Application Characteristics:

S.No	Characteristics	Description	Technology
1.	Open-Source Frameworks	ReactJS, Node.js, ExpressJS, MongoDB	JavaScript-based stack
2.	Security Implementations	JWT Authentication, bcrypt password hashing	bcrypt, JWT, HTTPS, CORS
3.	Scalable Architecture	Frontend-backend decoupled; stateless API	3-Tier Architecture
4.	Availability	Cloud hosting, automated restarts, monitoring	Render, Vercel, MongoDB Atlas
5.	Performance	Use of lazy loading, CDN for assets, RESTful APIs	Cloudinary CDN, MongoDB Indexing