Project Design Phase-II

Technology Stack (Architecture & Stack)

Date	April 12, 2025
Team ID	SWTID1743003805
Project Name	iMovies - Online Movie Ticket Booking System
Maximum Marks	4 Marks

Technical Architecture:

The iMovies application follows a client-server architecture with React.js on the frontend and Express/Node.js on the backend, connected to MongoDB for data storage. The system enables users to browse movies, select showtimes, book seats, and manage their bookings.

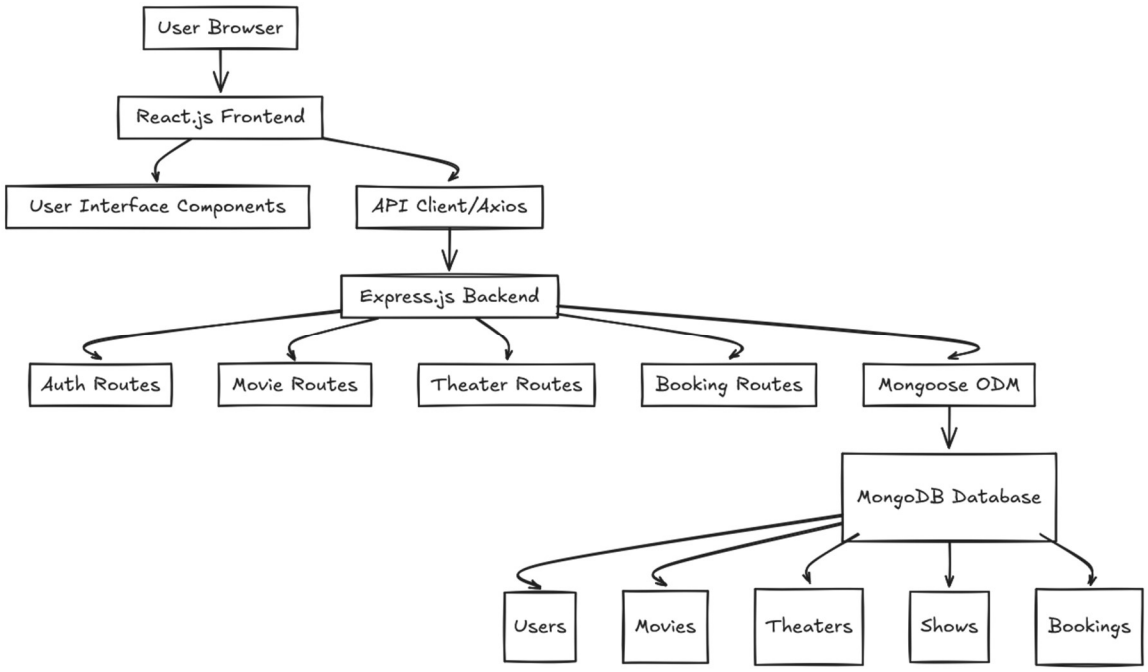

Table-1: Components & Technologies:

S.No	Component	Description	Technology
1.	User Interface	Web-based interface for user interaction with the movie booking system	React.js, Bootstrap, MDB React UI Kit, Ant Design
2.	Frontend State Management	Management of application state on the client side	React Context API
3.	Frontend Routing	Handling navigation between different pages	React Router
4.	HTTP Client	For making API calls from frontend to backend	Axios
5.	Server	Backend server handling client requests and business logic	Node.js, Express.js
6.	Authentication	User authentication and authorization system	JWT (JSON Web Tokens), bcryptjs
7.	Database	Storage for user data, movies, theaters, shows, and bookings	MongoDB
8.	Database ODM	Object Document Mapper for MongoDB	Mongoose
9.	Application Logic	Movie and theater management, booking system	Express.js Routes & Controllers
10.	Infrastructure	Local development environment	Local Node.js server

Table-2: Application Characteristics:

S.No	Characteristics	Description	Technology
1.	Open-Source Frameworks	Frontend and backend frameworks used	React.js, Express.js, Node.js, Mongoose
2.	Security Implementations	Authentication and data protection measures	JWT Authentication, Password Hashing with bcryptjs, Input Validation
3.	Scalable Architecture	Three-tier architecture (frontend, backend, database) with modular components	MERN Stack with Component-Based Architecture
4.	Availability	Local development with potential for deployment to cloud platforms	Node.js Server
5.	Performance	Efficient database queries, pagination for data retrieval	MongoDB Indexing, React Component Optimization