Technology Stack (Architecture & Stack)

Date	21 June 2025
Project	SB Flights – Smart Flight Booking Platform
Tean id	LTVIP2025TMID60279
Maximum Marks	4 Marks

Table-1: Components & Technologies

S.No	Component	Description	Technology
1	User Interface	How user interacts with the application	HTML, CSS, JavaScript, React JS
2	Application Logic-1	Flight search, filtering, sorting, and fare calculation	Node.js, Express.js
3	Application Logic-2	Authentication and authorization logic	JSON Web Tokens (JWT), Bcrypt
4	Application Logic-3	Admin dashboard functionalities: flight creation, booking management	Express.js, Mongoose
5	Database	Stores user, flight, and booking information	MongoDB
6	Cloud Database	Cloud-based hosting of database	MongoDB Atlas
7	File Storage	Storage of static assets or logs	Local filesystem or AWS S3 (if integrated)
8	External API-1	Flight details or currency conversion APIs	Skyscanner API / Currency Layer API
9	External API-2	Email notifications and alerts	Nodemailer API / SendGrid
10	Machine Learning Model	(Not applicable in current project phase)	–
11	Infrastructure	Backend hosted on local or cloud infrastructure	Local, Render, or AWS EC2

Table-2: Application Characteristics

S.No	Characteristics	Description	Technology Used
1	Open-Source Frameworks	Web development and backend frameworks	React, Node.js, Express, Mongoose
2	Security Implementations	User authentication, password hashing, and access control	JWT, Bcrypt, HTTPS
3	Scalable Architecture	Modular MVC architecture suitable for scaling	MERN Stack (MongoDB, Express, React, Node)
4	Availability	Hosted on cloud platforms with database replica sets	MongoDB Atlas Replica Set, Uptime Monitor
5	Performance	Optimized REST APIs, efficient data access, use of pagination	Axios, Express middleware, React useMemo