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

Date	19 February 2026
Team ID	LTVIP2026TMIDS81807
Project Name	BookNest: Where Stories Nestle
Maximum Marks	

Technical Architecture:

The Deliverable shall include the architectural diagram as below and the information as per the table1 & table 2

Table-1 : Components & Technologies:

S.No	Component	Description	Technology
1.	User Interface	Web interface for customers, sellers, and admin dashboards	React.js, HTML, CSS, Bootstrap, Material UI
2.	Application Logic-1	Authentication & Role Management	Node.js, Express.js, JWT
3.	Application Logic-2	Book browsing, cart management, and order processing	Express.js REST APIs
4.	Application Logic-3	Inventory management and order status handling	Node.js Controllers
5.	Database	Stores users, sellers, books, and orders data	MongoDB, Mongoose
6.	Cloud Database	Cloud-hosted NoSQL database for storing application data with scalability	MongoDB Atlas
7.	File Storage	Book images and related media storage	IBM Block Storage or Other Storage Service or Local Filesystem
8.	External API-1	HTTP communication between frontend & backend	Axios
9.	External API-2	Not Applicable	__
10.	Machine Learning Model	Not used in this project	__

11.	Infrastructure (Server / Cloud)	Local development deployment	Node.js Local Server

Table-2: Application Characteristics:

S.No	Characteristics	Description	Technology
1.	Open-Source Frameworks	Frameworks used to build UI & Backend APIs	React.js, Express.js, Node.js
2.	Security Implementations	Role-based authentication, encrypted passwords, protected routes	JWT, bcryptjs, Middleware
3.	Scalable Architecture	3-Tier architecture separating UI, backend logic, and database	REST Architecture, MongoDB
4.	Availability	Web application accessible anytime through browser	Node.js Server
5.	Performance	Fast API responses and asynchronous communication	Axios, Express.js