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

Date	18-06-2025
Team ID	LTVIP2025TMID53342
Project Name	LearnHub
Maximum Marks	4 Marks

Technical Architecture:

The **LearnHub platform** is built with a **MERN stack-based 3-tier architecture**:

- **Presentation Layer (Frontend):** Provides an intuitive, responsive UI for students, teachers, and admins.

- **Business Logic (Backend):** Handles authentication, course management, enrollment, payments, and assessments.

- **Data Storage Layer:** Maintains user data, course details, enrollment records, progress, and transaction logs.

- The architecture supports **RESTful APIs**, scalability, and secure integration with **payment gateways** (e.g., Razorpay or Stripe).

Table-1: Components & Technologies

S.No	Component	Technology
1	User Interface	React.js, HTML5, CSS3, Material UI, Bootstrap
2	Application Logic-1	Node.js, Express.js (Authentication, Course Management)
3	Application Logic-2	React.js (Frontend SPA), Node.js (Admin & API Services)

4	Database	MongoDB (User, Courses, Enrollments, Certificates, Payments)

Table-2: Application Characteristics

S.No	Characteristics	Description / Technology
5	**Open-Source Frameworks**	React.js, Node.js, Express.js, MongoDB, Material UI
6	**Scalable Architecture**	3-tier architecture with RESTful APIs, supports microservices

References:

- React.js Documentation: https://react.dev
- Node.js Guide: https://nodejs.org/en/learn/getting-started/introduction-to-nodejs
- MongoDB Docs: https://www.mongodb.com/docs/