

Project Design Phase-II

Technology Stack (Architecture & Stack)

Date	20 February 2026
Team ID	LTVIP2026TMIDS70508
Project Name	Learn Hub : Your Center for Skill Enhancement
Maximum Marks	4 Marks

Technical Architecture:

The Learn Hub platform follows a 3-tier MERN architecture consisting of Frontend (React), Backend (Node.js & Express), and Database (MongoDB). External APIs such as Payment Gateway services are integrated for secure transactions.

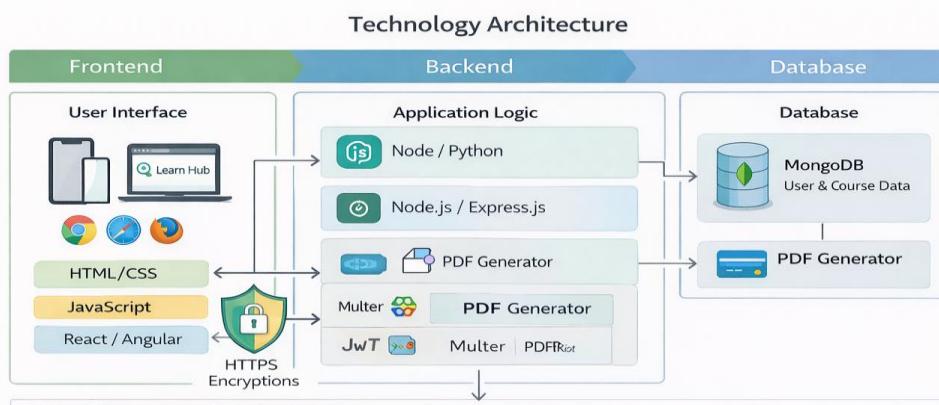


Table-1: Components & Technologies:

S.No	Component	Description	Technology	Technology
1	User Interface	Web-based frontend UI	React JS, HTML, CSS & JavaScript	JavaScript
2	Application Logic	Backend APIs & business logic	Node.js, Express.js	Node.js, Express.js
3	Authentication	Secure login & authorization	JWT, Bcrypt	JWT, Bcrypt
4	PDF Generation	Create downloadable certificates	Multer, PDFKit	MongoDB
5	Database	User & course data storage	MongoDB	Local Server, Git,
6	Development Tools	Development environment	VS Code, Git, GitHub	Git, GitHub

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4	Authentication	Secure login & authorization	JWT, Bcrypt
5	File Handling	Video uploads & certificate generation	Multer, PDFKit
6	Development Tools	Development environment	VS Code, Git, GitHub

Table-2: Application Characteristics

S.No	Characteristics	Description	Technology
1	Open-Source Frameworks	MERN stack usage	React, Node.js, Express
2	Security	Password hashing & token auth	JWT, HTTPS
3	Scalability	3-tier scalable architecture	Cloud deployment
4	Availability	Cloud hosting with uptime	Render / Vercel
5	Performance	Optimized APIs & DB indexing	MongoDB indexing