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

| Date | 26 june.2025 |
|------|--------------|
| Team ID | LTVIP2025TMID53135 |
| Project Name | LearnHUb:Your Center For Skill Enhancement |
| Maximum Marks | 4 Marks |

**Technical Architecture:**

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

**Example**

**Reference: https://developer.ibm.com/patterns/ai-powered-backend-system-for-order-processing-during-pandemics/**

**[Frontend (React.js / HTML5)]**

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   **[Axios API Calls]**

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**[Backend (Express.js / Node.js)]**

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**[MongoDB Database]**

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**[Certificate Generator, Payment Gateway]**

**Additional:**

**- Admin Panel: Manages instructors, students, and content**

**- Cloud Deployment (AWS / Render / Firebase)**

Guidelines:

Include all the processes (As an application logic / Technology Block)
Provide infrastructural demarcation (Local / Cloud)
Indicate external interfaces (third party API's etc.)
Indicate Data Storage components / services
Indicate interface to machine learning models (if applicable)

**Table-1 : Components & Technologies:**

| Component | Description | Technology |
|---|---|---|
| UI | Web Interface | HTML, CSS, ReactJS, Bootstrap |
| Application Logic | Backend services | Node.js, Express.js |
| Database | Course/User storage | MongoDB |
| Cloud | Hosting & scaling | AWS or Render |
| File Storage | Certificates, course media | AWS S3 or local |
| API | Payment & Email | Razorpay, Nodemailer |

**Table 2: Application Characteristics**

| Characteristic | Description | Technology |
|---|---|---|
| Open Source | Frameworks used | ReactJS, ExpressJS |
| Security | Authentication & Encryption | JWT, bcrypt, HTTPS |
| Scalability | Modular & scalable design | Microservices, Docker (optional) |

| | | |
|---|---|---|
| Availability | Uptime & deployment | Cloud hosting, load balancer |
| Performance | Optimized delivery | CDN, lazy loading, MongoDB indexing |

**References:**

https://c4model.com/

https://developer.ibm.com/patterns/online-order-processing-system-during-pandemic/

https://www.ibm.com/cloud/architecture

https://aws.amazon.com/architecture

https://medium.com/the-internal-startup/how-to-draw-useful-technical-architecture-diagrams-2d20c9fda90d