**Project Design Phase-II**

**Technology Stack (Architecture & Stack)**

| Date | 26-06-2025 |
| --- | --- |
| Team ID | LTVIP2025TMID59448 |
| Project Name | ShopSmart |
| Maximum Marks | 4 Marks |

### **Technical Architecture:**

ShopSmart is built using a modern, scalable 3-tier architecture consisting of:

* Presentation Layer (Frontend): Provides a clean and responsive interface for customers to browse, search, and purchase groceries, and for admins to manage inventory and orders.
* Business Logic Layer (Backend): Manages product listing, cart operations, order processing, authentication, and inventory management.
* Data Storage Layer: Securely stores customer details, product inventory, orders, reviews, and payment history.

The platform also integrates with payment gateways and notification APIs (email/SMS) to ensure a complete e-commerce experience.

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

| **S.No** | **Component** | **Description** | **Technology** |
| --- | --- | --- | --- |
|  | User Interface | Web and mobile-friendly interface for patients and providers | HTML, CSS, JavaScript / React Js etc. |
|  | Application Logic-1 | Product listing, cart, orders, user authentication | Node.js, Express.js |
|  | Application Logic-2 | | Admin panel, provider management, reporting | | --- | | React js, Node js |
|  | Database | Stores product data, customer info, orders, reviews | MongoDB |

**Table-2: Application Characteristics:**

| **S.No** | **Characteristics** | **Description** | **Technology** |
| --- | --- | --- | --- |
| 1. | Open-Source Frameworks | Use of modern open-source frontend/backend frameworks | React.js, Node.js, BootStrap, Tailwind CSS |
| 2. | Availability | Designed for high uptime and reliability,ensuring 24/7 access | Deployed on cloud platforms (e.g., Vercel, Render, MongoDB Atlas) |
| 3. | Scalable Architecture | Supports increasing users/products with REST APIs and modular structure | Microservices,RESTful APIs |

### **References:**

* **React.js Official Documentation**
* **Node.js Best Practices**
* **MongoDB Docs**
* **RESTful API Design Guidelines**
* **JSON Web Token (JWT) Authentication**
* [**https://medium.com/the-internal-startup/how-to-draw-useful-technical-architecture-diagrams-2d20c9fda90d**](https://medium.com/the-internal-startup/how-to-draw-useful-technical-architecture-diagrams-2d20c9fda90d)