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

Date	3December 2025
Team ID	
Project Name	**SHOPEZ : E-commerce Application**
Maximum Marks	4Marks

Technical Architecture:

A scalable, modular 3-tier architecture (Presentation → Business Logic → Data) with optional microservices for payments, search and order processing. The design supports fast product discovery, secure checkout, inventory consistency, and horizontal scaling for traffic spikes.

Table-1 : Components & Technologies:

Component	Description	Technology
User Interface	Customer storefront, product pages, cart, checkout, admin dashboard	HTML, CSS, JavaScript, React.js
Application Logic – Customer	User registration, login, product search, add-to-cart, wishlist, checkout, order tracking.	Node.js, Express.js
Application Logic – Admin	Product management, category management, stock updates, order management, user management.	React js, Node js
Application Logic – Payment	Secure payment processing, order confirmation, invoice generation.	Node.js, Express.js
Database	Stores users, products, categories, orders, inventory, payments.	MongoDB

Table-2: Application Characteristics:

Characteristics	Description	Technology
Open-Source Frameworks	Uses modern, open-source frontend & backend tools for faster development and clean UI.	React.js, Node.js, CSS
Scalable Architecture	Clean 3-tier architecture with RESTful API communication suitable for growing product and user base.	MVC
High Performance	Fast product loading, optimized API responses, search efficiency.	React.js + Express.js
Secure Authentication	Role-based login for Customer, Admin, and Seller with encryption.	JWT, Bcrypt
Flexible Data Handling	NoSQL database ensures scalability and fast queries	MongoDB

References:

 React.js Documentation

 Node js Best Practice

JSON Web Server Referance

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