Project Design Phase
Solution Architecture

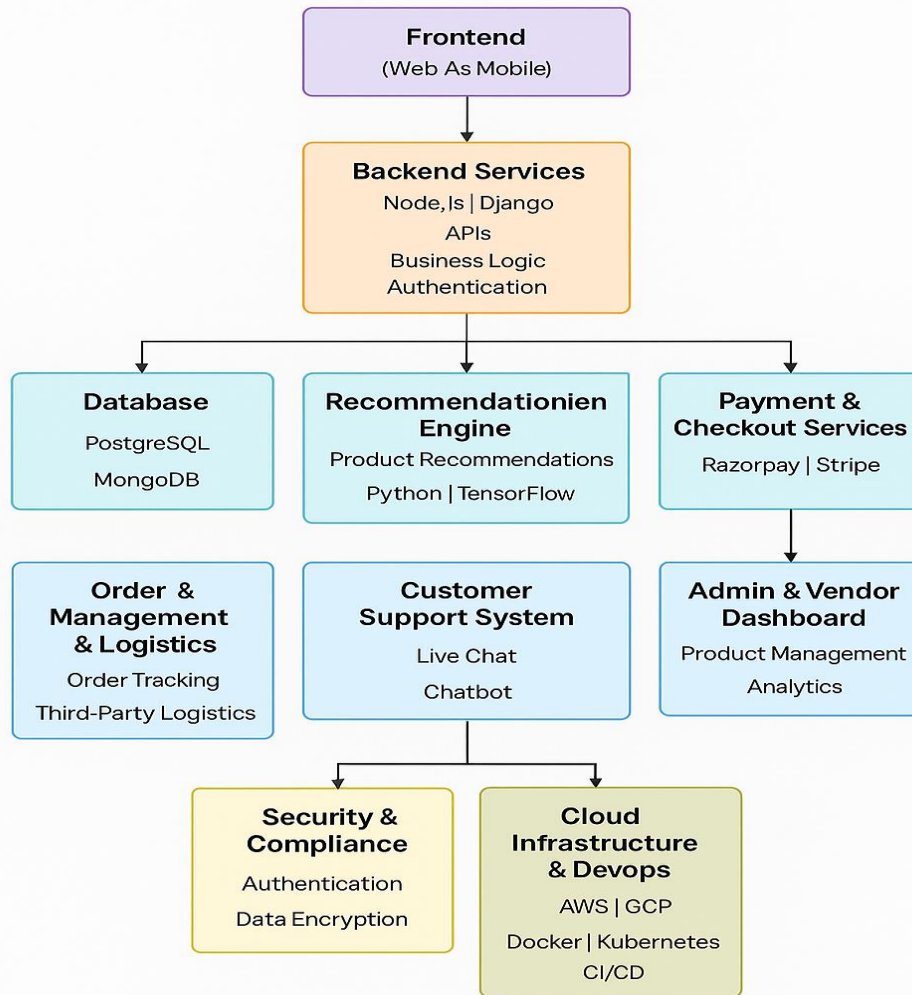| Date	
Team ID	PNT2025TMID09483
Project Name	ShopEZ: E-commerce Application
Maximum Marks	4 Marks

Solution Architecture:

Solution Architecture of ShopEZ: E-commerce Application is designed to ensure a smooth, scalable, and secure shopping experience for users. It integrates various layers and technologies to handle different aspects of the platform effectively:

- **Frontend Layer** – Built with React.js and Flutter for responsive web and mobile interfaces.

- **Backend Services** – Powered by Node.js or Django, managing business logic, user data, and APIs.

- **Database Management** – Uses PostgreSQL and MongoDB to store structured and unstructured data.

- **AI-Powered Recommendation Engine** – Suggests products based on user behavior and preferences.

- **Cloud Infrastructure & DevOps** – Hosted on AWS or GCP with Docker, Kubernetes, and CI/CD for performance and scalability.

This architecture enables fast, personalized shopping, real-time order tracking, and secure payments on ShopEZ.

Example - Solution Architecture Diagram:

Solution Architecture

Frontend
(Web As Mobile)

Backend Services
Node,ls | Django
APIs
Business Logic
Authentication

Database
PostgreSQL
MongoDB

Recommendationien Engine
Product Recommendations
Python | TensorFlow

Payment & Checkout Services
Razorpay | Stripe

Order & Management & Logistics
Order Tracking
Third-Party Logistics

Customer Support System
Live Chat
Chatbot

Admin & Vendor Dashboard
Product Management
Analytics

Security & Compliance
Authentication
Data Encryption

Cloud Infrastructure & Devops
AWS | GCP
Docker | Kubernetes
CI/CD

ShopEZ