Project Design Phase-II

Technology Stack (Architecture & Stack)

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

Project Description:

ShopEZ is your one-stop destination for effortless online shopping. With a user-friendly interface and a comprehensive product catalog, finding the perfect items has never been easier. Seamlessly navigate through detailed product descriptions, customer reviews, and available discounts to make informed decisions. Enjoy a secure checkout process and receive instant order confirmation. For sellers, our robust dashboard provides efficient order management and insightful analytics to drive business growth. Experience the future of online shopping with ShopEZ today.

Key Features:

- Seamless Checkout Process
- Effortless Product Discovery
- Personalized Shopping Experience
- Efficient Order Management for Sellers
- Insightful Analytics for Business Growth

Technical Architecture:

The ShopEZ platform is designed with a scalable 3-tier architecture that includes the presentation layer (frontend), business logic (backend), and data storage layer. The solution ensures performance, security, and ease of integration with third-party APIs (e.g., Stripe for payments, PayPal for transactions, and analytics services for business insights).

Table-1 : Components & Technologies:

S.No	Component	Description	Technology
1.	User Interface	Web-based interface for customers and sellers	HTML, CSS, JavaScript / React.js etc.
2.	Application Logic-1	Product catalog, shopping cart, checkout, user authentication	Node.js, Express.js
3.	Application Logic-2	Seller dashboard, inventory management, order tracking, analytics, payment processing	React.js, Node.js
4.	Database	Stores user data, products, orders, reviews, seller information	MongoDB

Table-2: Application Characteristics:

S.No	Characteristics	Description	Technology
5.	Open-Source Frameworks	Frontend frameworks and UI libraries	React.js, Node.js, Bootstrap, Tailwind CSS
6.	Scalable Architecture	3-tier architecture with RESTful APIs	MVC

Scenario Implementation:

The ShopEZ platform supports the complete customer journey as demonstrated in Sarah's Birthday Gift scenario:

1. **Effortless Product Discovery**: Advanced search and filtering capabilities powered by React.js frontend

2. **Personalized Recommendations**: Machine learning algorithms integrated through Node.js backend

3. **Seamless Checkout Process**: Secure payment gateway integration with Stripe/PayPal APIs

4. **Order Confirmation**: Real-time notification system using WebSocket technology

5. **Efficient Order Management**: Comprehensive seller dashboard with inventory and order tracking

6. **Analytics Integration**: Business intelligence tools for sellers to track performance

References:

React.js Documentation

Node.js Best Practice

E-commerce Architecture Patterns

Technical Architecture Design