

# Project Design Phase

## Solution Architecture

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|---------------|--|
| Date          | 16th April 2025                            |
| Team ID       | SWTID1744119659                            |
| Project Name  | ShopEZ: One-Stop Shop for Online Purchases |
| Maximum Marks | 4 Marks                                    |

### Solution Architecture:

This architecture illustrates how the **ShopEZ e-commerce platform** functions across the **User**, **Cloud**, and **Admin/Vendor** networks:

- **Frontend (UI):** Built with **React**, users interact through a responsive web/mobile interface.
- **Backend (API):** Developed using **Express.js**, it handles communication between frontend, database, and internal services.
- **Authentication:** Managed via **JWT tokens**, ensuring secure, role-based access.
- **Data Services:** Includes a central **MongoDB** for products, users, and orders.
- **Analytics & Notifications:** Powered by an **Analytics Engine** (for product trends) and **Notification Service**.
- **Admin Panel:** Allows admins to manage data through a **dashboard** linked to business logic and the database.
- **Data Integration Layer:** Connects deployment monitoring, inventory control, and secure access.

Color-coded legends help distinguish **UI components**, **backend**, **data**, **analytics**, and **security elements** for easy understanding.

## Solution Architecture Diagram:

