**Project Design Phase**

**Solution Architecture**

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| Date | 12 April 2025 |
| Team ID | SWTID1742751842 |
| 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:**

