EazyDeals

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Introduction:

- EazyDeals is a secure, scalable e-commerce platform that helps businesses manage products, handle payments, and engage customers through a smooth and responsive user interface.

Scope

- Product & order management
- Secure login and payments
- Admin dashboard with insights
- Cloud-based deployment
- Real-time tracking & reviews

Problem Statement:

- Traditional e-commerce platforms often face challenges like manual product handling, lack of real-time inventory updates, weak data security, and poor user engagement. These issues make it difficult for businesses to scale efficiently, manage operations smoothly, and deliver a seamless shopping experience to customers.

Objectives:

- **Efficient Product Management**
- Build a reliable and scalable e-commerce system that enables real-time product listing, updating, and inventory monitoring to reduce manual errors and improve operational efficiency.

Tools and Technology:

- Frontend: Thymeleaf – For building dynamic and responsive UIs.
- Backend: Spring Boot – Offers robust and scalable server-side logic.
- Security: Spring Security, JWT & SSL – Ensures safe and secure authentication.
- Database: MySQL with Hibernate – For efficient data storage and persistence.
- APIs: RESTful APIs – Enables seamless communication between client and server.
- Payments: Stripe – Integrated for secure and smooth payment processing.
- Hosting: AWS (EC2, S3, RDS) – For reliable and scalable cloud deployment.
- Admin Panel: Provides sales insights and real-time analytics.
- IDE: Visual Studio Code – Used for writing, debugging, and managing the code.

Methodology:

- **Requirement Gathering:** Identified user needs, business goals, and system features.
- **Technology Selection:** Chose Spring Boot, Thymeleaf, MySQL, and Stripe based on project needs.
- **Architecture Design:** Created system architecture including backend, frontend, and database.
- **UI/UX Planning:** Designed responsive user interfaces using Thymeleaf and CSS.
- **Backend Development:** Built secure server-side logic using Spring Boot and Java.
- **Database Integration:** Used MySQL with Hibernate for smooth data management.
- **REST API Development:** Enabled frontend-backend communication with efficient APIs.
- **Security Implementation:** Integrated JWT and Spring Security for user authentication.
- **Payment Integration:** Embedded Stripe for fast and safe online payments.
- **Testing & Debugging:** Ensured bug-free performance through unit and integration testing.
- **Deployment:** Hosted on AWS for reliability, speed, and scalability.
- **Monitoring & Updates:** Maintained and improved the system based on user feedback.

System Flow Diagram

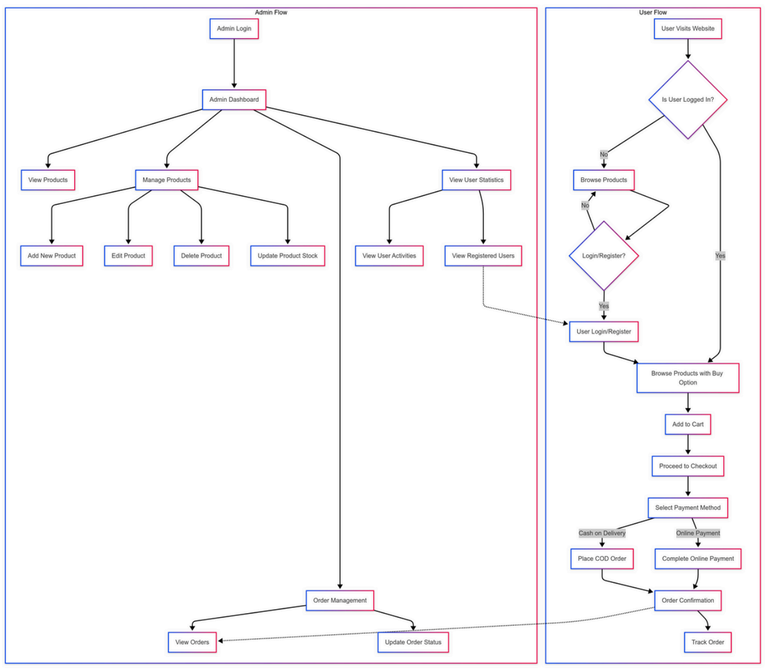

Fig 1: Activity Diagram

Class Diagram

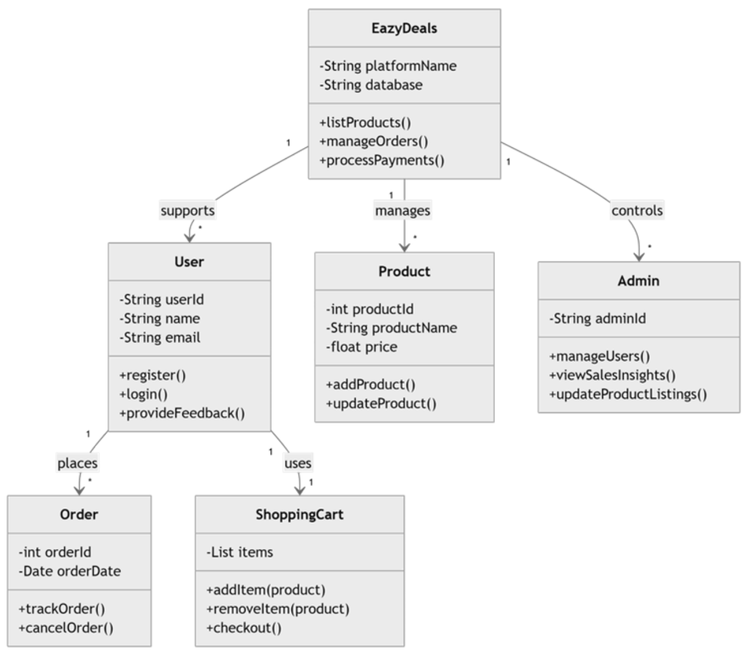

Fig 2: Class Diagram

Graphs

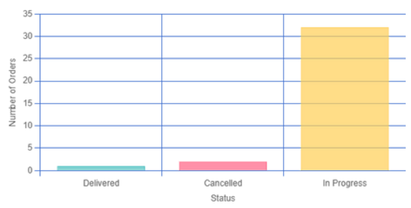

Fig 3: Histogram

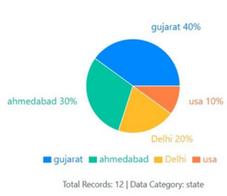

Fig 4: Pie Chart

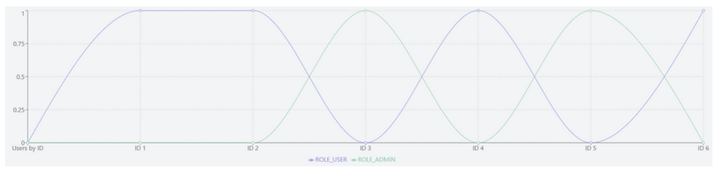

Fig 5: Line Chart

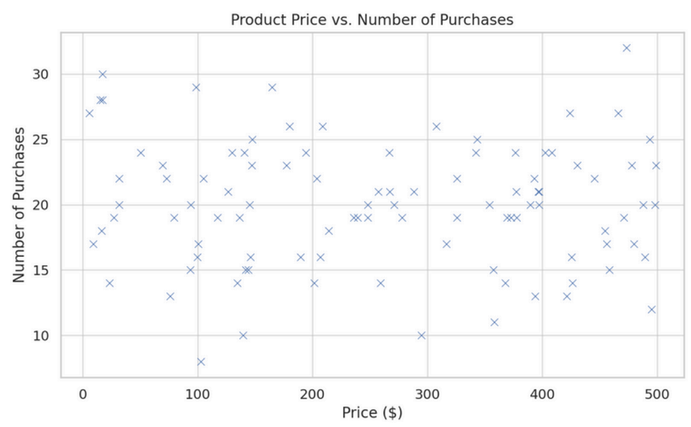

Fig 6: Scatter Plot

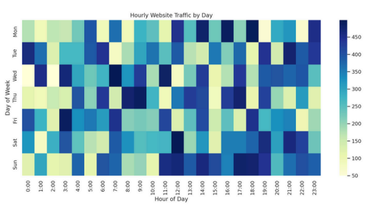

Fig 7: Heat Map

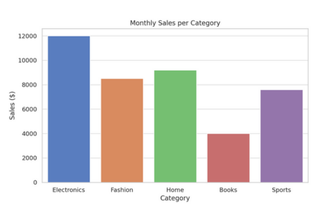

Fig 8: Bar Graph

Screenshots:

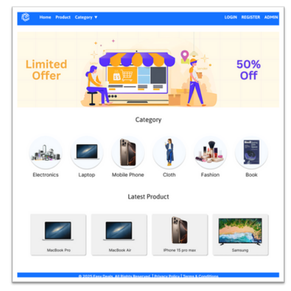

Fig 9: Home Page

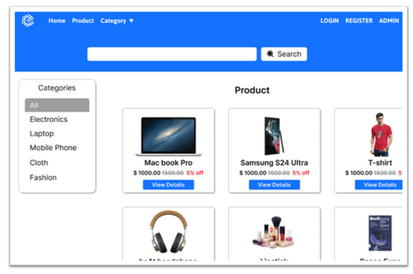

Fig 10: Payment Page

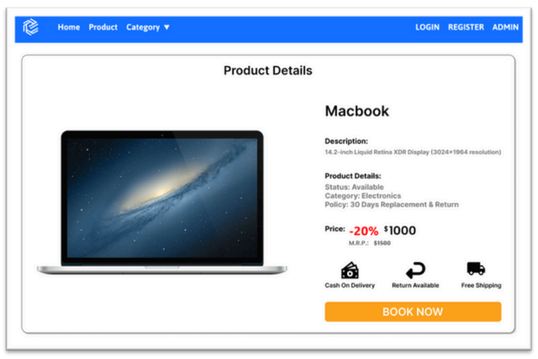

Fig 11: Buy Page

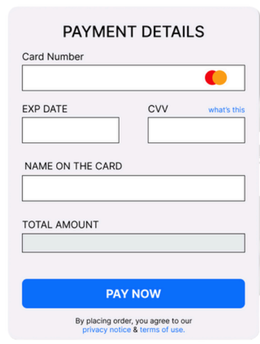

Fig 12: Product Page

Result & Discussions:

- **Seamless User Experience:** The platform provides a smooth and responsive shopping interface, enhancing customer satisfaction.
- **Secure Transactions:** Stripe and JWT integration ensured secure and encrypted transactions, reducing potential risks.
- **Real-Time Inventory:** Businesses can manage inventory efficiently, minimizing stock issues and overselling.
- **Admin Insights:** The dashboard offers clear sales and user data, supporting better business decisions.
- **Scalable Deployment:** Hosting on AWS improved reliability and scalability, ensuring high performance during traffic spikes.
- **Positive Feedback:** Test users reported an easy-to-navigate UI and fast order placement.

Future Enhancements:

- Comprehensive product and order management with secure login, Stripe payments, real-time inventory, reviews, and admin dashboard.
- Enhanced user experience through responsive UI, order tracking, and map integration to show product source and delivery location.

Conclusion:

- EazyDeals streamlines e-commerce operations with secure transactions, user-friendly interfaces, and real-time product management for businesses and customers.
- With scalable architecture and core features, the platform supports business growth and adapts to future advancements.

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