

Trendy Mart - Simplified Publication

Satyajeet Satpathy ,4th Year, Department of CSE, Gandhi Institute for Technology, BPUT, India

ssatapathy2021@gift.edu.in

Subrat Kumar Ranasingh , 4th Year, Department of CSE , Gandhi Institute for Technology, BPUT, India

subrat2021@gift.edu.in

Abstract :

Trendy Mart is an e-commerce platform designed to provide a smooth and efficient online shopping experience. Built using the MERN Stack (MongoDB, Express.js, React.js, Node.js), the platform offers real-time synchronization, secure transactions, and user-friendly interfaces. This publication explains its development, technology stack, features, and future plans.

Keywords:

React , Express ,Node js, CSS ,html , Js , Tailwind

1. INTRODUCTION

Trendy Mart is a modern online shopping platform focused on performance and user experience. It uses real-time updates to reflect changes instantly, ensuring that the shopping cart, product listings, and order statuses are always current. By integrating Firebase for database management and Stripe for secure payments, Trendy Mart overcomes common challenges like slow page loads and inconsistent data.

2. TECHNOLOGY STACK

- **Frontend:** React.js and Tailwind CSS for a fast and responsive user interface.
- **Backend:** Node.js and Express.js for handling server logic and APIs.
- **Database:** Firebase Firestore for real-time data synchronization.
- **Payment Gateway:** Stripe for secure and instant transactions.
- **Hosting:** Vercel and Netlify for global deployment with fast load times.

3. SYSTEM ARCHITECTURE

Trendy Mart is structured into three main layers:

1. **Frontend (Presentation Layer):** Manages the user interface and interactions.
2. **Backend (Application Layer):** Handles logic, data processing, and API routing.

3. **Database (Data Layer):** Manages user data, product information, and order history with real-time synchronization.

4. DEVELOPMENT METHODOLOGY

Trendy Mart was developed using the **Agile Methodology**. Key phases include:

1. **Planning and Analysis:** Identifying features and architecture.
2. **Design and Prototyping:** Creating interactive UI designs.
3. **Development:** Building frontend and backend functionalities.
4. **Testing:** Ensuring smooth data flow and secure transactions.
5. **Deployment:** Hosting on Vercel and Netlify with real-time synchronization.

5. KEY FEATURES

1. **Real-Time Sync:** Instant updates in the cart and product listings.
2. **Secure User Authentication:** Google Sign-In and password-protected access.
3. **Product Management:** Real-time inventory updates.
4. **Dynamic Cart and Checkout:** Consistent synchronization across devices.
5. **Secure Payments:** Stripe integration for safe transactions.
6. **Admin Dashboard:** Easy control of products, orders, and users.
7. **Mobile Responsiveness:** Optimized for mobile and tablet browsing.
8. **Advanced Search:** Fast and accurate product searches.

6. FUTURE SCOPE

1. **Multi-Vendor Support:** Allowing more sellers on the platform.
2. **AI Recommendations:** Personalized product suggestions.
3. **Advanced Analytics:** Better tracking of sales and user interactions.
4. **Omnichannel Integration:** Expanding to social platforms like Instagram Shopping.

7. CONCLUSION

Trendy Mart is designed to provide a seamless shopping experience with modern technologies and real-time updates. Its structured architecture and robust features make it a reliable platform for online shopping, with plans for more advanced capabilities in the future.

8. ACKNOWLEDGEMENTS

We thank our project guide **Smruti Smaraki Sarangi** for her constant support and guidance during the development of Trendy Mart. Her expertise played a key role in the project's success.

We also extend our gratitude to the faculty members of the Computer Science and Engineering Department at Gandhi Institute for Technology (GIFT), Bhubaneswar, for their valuable inputs and encouragement throughout the project. Their support and insights greatly contributed to the smooth development and successful completion of Trendy Mart.

9. REFERENCES

1. React Documentation - react.dev
2. MongoDB Documentation - mongodb.com/docs
3. Node.js Documentation - nodejs.org/docs
4. Express.js Documentation - expressjs.com
5. Firebase Documentation - firebase.google.com/docs
6. Stripe Documentation - stripe.com/docs
7. Vercel Documentation - vercel.com/docs
8. Netlify Documentation - docs.netlify.com
9. Tailwind CSS Documentation - tailwindcss.com/docs
10. Agile Methodology Overview - agilealliance.org