

# Trending Doors

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## Abstract:

The proposed system, "Trending Doors", leverages machine learning to enhance the shopping experience by providing a personalized platform for discovering the latest offers, discounts, and deals from various malls across the city. Using advanced recommendation algorithms, the system analyses user preferences, shopping behaviour, and trending deals to suggest the most relevant promotions and discounts. Users can browse through a curated selection of products, compare discounts from different malls, and add their desired items to a virtual shopping cart. This personalized shopping platform not only saves users time but also ensures they make informed purchasing decisions. Once users finalize their shopping list, they can visit the mall in person to purchase the products offline, bridging the convenience of online planning with the tactile experience of offline shopping. The integration of machine learning algorithms helps the system dynamically adapt to user preferences and shopping trends, ensuring a tailored and efficient shopping journey. Additionally, the platform benefits malls and retailers by optimizing the visibility of their offers and deals, attracting more foot traffic, and fostering a seamless connection between shoppers and retailers.

**Keywords:** Trending Doors, machine learning, shopping experience, personalized platform, offers, discounts, deals, malls, recommendation algorithms, user preferences, shopping behaviour.

## INTRODUCTION

Fast-paced world, shopping has evolved into a blend of online convenience and offline experiences. However, finding the best deals and offers across multiple malls can be time-consuming and overwhelming. To address this, "Trending Doors" emerges as an innovative solution, leveraging machine learning to redefine the shopping experience.

This proposed system acts as a personalized platform where users can explore the latest offers, discounts, and trending deals from various malls in the city. By utilizing advanced recommendation algorithms, the platform analyses user preferences, shopping habits, and real-time trends to suggest the most relevant deals and promotions. Users can browse a curated selection of products, compare discounts across malls, and create a virtual shopping cart for easy planning.

The platform bridges the gap between the convenience of online shopping and the tactile satisfaction of in-person purchases, allowing users to finalize their lists online and shop offline. Beyond enhancing the user experience, Trending Doors also benefits malls by improving the visibility of their offers, driving more foot traffic, and fostering stronger connections between retailers and shoppers.

By combining technology, personalization, and convenience, Trending Doors aims to revolutionize the shopping landscape, delivering tailored experiences for users and optimizing sales for retailers.

**LITERATURE SURVEY**

Sr no	Title of paper	Author name	IEEE journals/conference
1	IoT-Based Smart Shopping Cart Using Radio Frequency Identification	Mobeen Shahroz; Muhammad Faheem Mushtaq	08 April 2020
2	The Bullwhip Effect in an Online Retail Supply Chain: A Perspective of Price-Sensitive Demand Based on the Price Discount in E-Commerce	Dandan Gao; Nengmin Wang; Zhengwen He; Tao Jia	08 March 2017
3	Designing promotions: Consumers' surprise and perception of discounts	W. Sun; P. Murali; A. Sheopuri; Y.-M. Chee	21 November 2014
4	Temporal Discounting in Technical Debt: How do Software Practitioners Discount the Future?	, Christoph Becker; Fabian Fagerholm; Rahul Mohanani; Alexander Chatzigeorgiou	26-26 May 2019

**FUTURE SCOPE**

The proposed system, "Trending Doors," holds immense potential for future advancements and expansion. One key area of development is the integration of Augmented Reality (AR), which can enhance user experience by enabling virtual try-ons for clothing, accessories, and other products, helping users make more informed choices before visiting the mall. The system could also expand to include partnerships with e-commerce platforms, creating a seamless hybrid shopping experience that blends online purchasing with in-store discounts and offers. Additionally, the platform could incorporate predictive analytics to forecast user shopping trends and provide proactive deal suggestions, ensuring an even more personalized experience. The inclusion of real-time inventory tracking from partner malls would help users determine product availability, reducing unnecessary visits. Furthermore, geolocation-based features such as navigation to malls, parking assistance, and proximity-based deal alerts could be introduced to improve convenience and accessibility. On the retailer side, the system could evolve to provide detailed analytics dashboards that offer insights into consumer behaviour, enabling malls to design more effective marketing strategies. With scalability in mind, Trending Doors could expand its reach to cover national and international shopping hubs, creating a unified platform for discovering the best deals globally. This continued innovation ensures that Trending Doors remains at the forefront of transforming the shopping landscape.

**OBJECTIVE**

The primary objective of "Trending Doors" is to revolutionize the shopping experience by providing a personalized platform that connects users with the latest offers and discounts from various malls. The system aims to leverage machine learning algorithms to analyse user preferences, shopping behaviour, and trending deals, enabling users to discover relevant promotions quickly and efficiently. Additionally, the platform seeks to bridge the gap between online convenience and offline shopping experiences by allowing users to plan their purchases online and shop in person. By enhancing user convenience and decision-making, Trending Doors also aims to benefit malls and retailers by increasing the visibility of their offers, attracting more foot traffic,

and strengthening connections with shoppers. Ultimately, the system aspires to create a smarter, more efficient, and customer-centric shopping ecosystem that benefits both consumers and businesses.

## PROPOSED SYSTEM

Shoppers often struggle to find the best deals and discounts across multiple malls, leading to inefficient and time-consuming shopping experiences. At the same time, malls and retailers face challenges in effectively promoting their offers and attracting customers. The lack of a centralized platform for personalized recommendations and real-time updates creates a gap between online convenience and offline shopping. "Trending Doors" aims to bridge this gap by leveraging machine learning to provide tailored shopping experiences and optimize retailer visibility.

## FLOW CHART

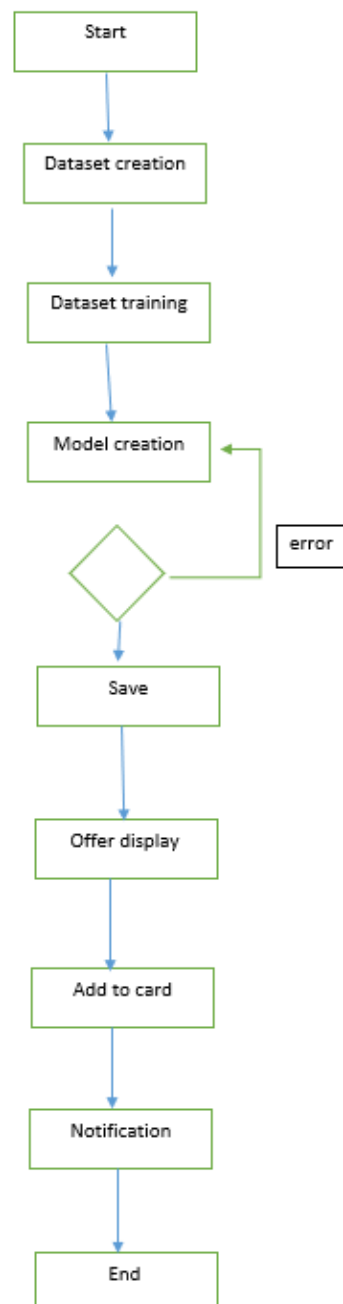
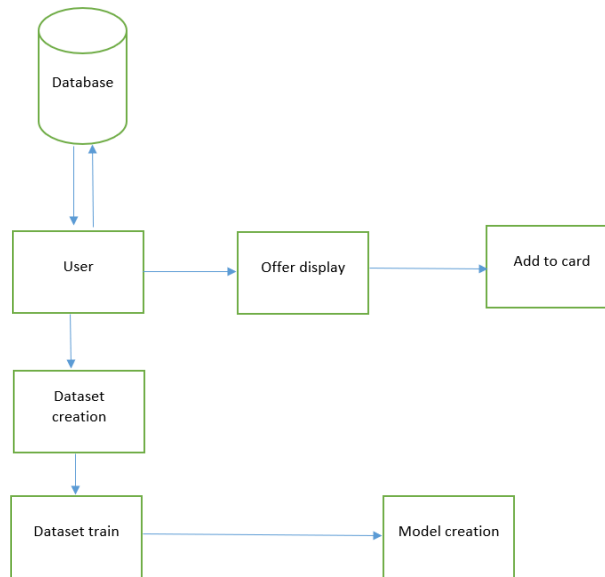


Fig: Flowchart

## SYSTEM ARCHITECTURE



**Fig: System Architecture Diagram**

## FUNCTIONAL REQUIREMENTS

1. **User Registration and Authentication:** Users must be able to register with their details and log in securely to access personalized features.
2. **Personalized Recommendations:** The system should use machine learning to analyse user preferences, shopping habits, and trends to recommend relevant offers and discounts.
3. **Search and Filter Options:** Users should be able to search for specific products or categories and filter offers based on criteria like price, location, or popularity.
4. **Virtual Shopping Cart:** Users must be able to add desired products to a virtual shopping cart for planning their purchases.
5. **Comparison of Offers:** The platform should allow users to compare discounts and promotions across multiple malls to make informed decisions.
6. **Mall and Offer Listings:** The system should display a curated list of malls and their offers, categorized for easy navigation.
7. **Notifications and Alerts:** Users should receive notifications about new offers, trending deals, or discounts in their preferred categories.
8. **Admin Panel for Retailers:** Retailers should have access to an admin panel to update offers, promotions, and product availability.
9. **User Feedback Mechanism:** The platform should provide a way for users to leave feedback or rate their shopping experience.
10. **Real-time Data Integration:** The system should dynamically update offers and discounts based on current trends and retailer inputs.

## NONFUNCTIONAL REQUIREMENTS

1. **Scalability:** The platform should handle an increasing number of users, malls, and offers as the system expands.
2. **Performance:** The system should deliver recommendations and search results within 2-3 seconds for a smooth user experience.
3. **Security:** User data and transactions should be protected with encryption and secure authentication mechanisms.

4. Reliability: The system should have minimal downtime and consistently provide accurate and up-to-date information.
5. Usability: The platform should feature an intuitive and user-friendly interface for easy navigation.
6. Cross-Platform Compatibility: The system should be accessible via web browsers, mobile applications (iOS and Android), and tablets.
7. Data Privacy: The platform must comply with data protection regulations, ensuring user data is stored and processed securely.
8. Maintainability: The system architecture should support regular updates and feature enhancements with minimal downtime.
9. Localization Support: The platform should support multiple languages and currencies for broader accessibility.
10. Integration Capability: The system should support integration with external APIs for real-time inventory updates, payment gateways, and geolocation services.

## APPLICATIONS

1. Personalized Shopping Assistant
2. Retail Marketing Optimization
3. Shopping Event Promotions
4. Pre-Planning Shopping Trips
5. Real-Time Deal Tracking
6. Customer Behaviour Analysis
7. Hybrid Shopping Experience
8. Loyalty Program Integration
9. Geolocation-Based Alerts
10. Event-Based Applications

## CONCLUSION

Trending Doors" represents a significant leap in transforming the traditional shopping experience into a smarter, more personalized, and efficient process. By leveraging machine learning algorithms, the platform bridges the gap between the convenience of online planning and the tactile satisfaction of offline shopping. It empowers users to discover relevant offers and discounts from various malls, make informed purchasing decisions, and save time while enjoying a seamless shopping journey. For retailers and mall operators, Trending Doors provides an innovative avenue to enhance their visibility, attract more foot traffic, and build stronger connections with shoppers through targeted promotions and real-time updates. As a scalable and future-ready platform, it holds immense potential for incorporating cutting-edge technologies like Augmented Reality, predictive analytics, and geolocation services, ensuring it remains at the forefront of shopping innovations. Ultimately, Trending Doors aspires to create a dynamic ecosystem where users and retailers mutually benefit, setting a new benchmark for modern shopping experiences.

## REFERENCES

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