

**SCTR's Pune Institute of Computer
Technology Dhankawadi, Pune**

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**WADL MINI PROJECT REPORT ON
E-Commerce Website**

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ABSTRACT

This project aims to develop a user-friendly e-commerce website, "Elegance Edge" with a unique price tracking feature. Elegance Edge will offer a platform to browse and purchase products, but it will differentiate itself by allowing users to track the price of specific items across a set timeframe. Users can set up email notifications to be alerted when a desired product's price drops, empowering them to make informed purchasing decisions and potentially save money.

The project will focus on building a user interface that is intuitive for both product browsing and price tracking functionalities. Integration with external APIs or web scraping techniques will be explored to enable price monitoring across various online retailers. The project will prioritize data security and user privacy throughout the development process.

This mini project represents a valuable tool for budget-conscious shoppers and demonstrates the potential of e-commerce platforms that integrate price tracking features.

INTRODUCTION

The e-commerce industry has undergone a dramatic transformation, evolving from a niche market into a dominant force in retail. Consumers now have access to a seemingly endless selection of products at their fingertips, with online marketplaces offering competitive prices and unparalleled convenience. However, this abundance also presents a challenge: navigating a complex web of constantly shifting prices to secure the best deals.

Traditional e-commerce platforms often leave this task to the user, requiring them to manually monitor prices across different retailers and spend valuable time searching for bargains. This project, "Elegance Edge" proposes a solution by introducing a novel e-commerce website that integrates a powerful price tracking feature.

Elegance Edge transcends the limitations of conventional online stores by offering a comprehensive shopping experience that empowers users to become strategic consumers. It achieves this through the following key functionalities:

- 1) **Price Tracking:** Elegance Edge allows users to effortlessly monitor the price fluctuations of specific products over a designated timeframe. This provides valuable insights into historical pricing trends and helps users identify the most opportune moment to make a purchase.
- 2) **Smart Notifications:** Elegance Edge integrates a user-friendly email notification system. Users can configure personalized alerts for their desired products, ensuring they are instantly notified whenever a price reduction occurs. This eliminates the need for constant price monitoring and guarantees users never miss out on a price change in any product.

By incorporating these innovative features, Elegance Edge aims to revolutionize the online shopping experience. This project delves into the development of an e-commerce platform that prioritizes user empowerment and informed decision-making. Ultimately, it seeks to demonstrate the transformative potential of integrating price tracking features within e-commerce websites, fostering a more strategic and rewarding shopping experience for budget-conscious consumers.

LITERATURE SURVEY

Consumer Price Sensitivity and Strategic Shopping:

A growing body of research highlights the increasing price sensitivity of online shoppers [1]. Studies by Victor et al. (2018) demonstrate a strong correlation between consumer awareness of dynamic pricing and their tendency to engage in price tracking behaviour. This trend signifies the growing importance of tools that empower informed purchasing decisions.

Price Comparison Websites and Limitations:

Existing solutions such as price comparison websites offer some level of price tracking functionality [2]. However, these platforms typically focus on presenting the lowest current price across various retailers, neglecting historical price trends and personalized notifications. This limitation creates a gap in the market for a solution that caters to users who want to strategically time their purchases.

Web Scraping and Data Collection Techniques:

Research into e-commerce price comparison tools explores the use of web scraping techniques for data collection [3]. Papers like "E-commerce Price Comparison Website Using Web Scraping" by Khairkar et al. (2019) demonstrate the feasibility of implementing web scraping ethically and efficiently to gather product price data from various online retailers [3].

Privacy Concerns and Data Security Measures:

Integrating price tracking features requires careful consideration of user privacy. Research by Xu et al. (2017) emphasizes the importance of implementing robust data security measures to ensure user trust [4]. This project will prioritize data anonymization and encryption techniques to safeguard user information.

The literature survey underscores the growing demand for user-centric e-commerce solutions that empower informed purchasing decisions. While existing platforms offer some price-related functionalities, a gap exists for a platform that caters to strategic price tracking and personalized notifications. This project leverages existing research on web scraping techniques and user behaviour to develop "Elegance Edge" a novel e-commerce website that bridges this gap and fosters a more informed shopping experience.

IMPLEMENTATION DETAILS

Web technologies used: MERN stack.

Frontend development:

- 1) React: The core library for building the user interface of Elegance Edge. It will be responsible for:
 - a) Displaying product listings and details.
 - b) Creating user interfaces for price tracking features like watchlists and price charts.
 - c) Handling user interactions with notifications, search bars, and product filtering.
- 2) React Router: For managing navigation between different views within the application (e.g., product listings, shopping cart, account settings).

Backend development:


- 1) Node.js: The runtime environment for the server-side code.
- 2) Express.js: A web framework built on Node.js that simplifies building APIs and handling server-side logic. Key functionalities include:
 - i) Processing user requests for product data and price tracking information.
 - ii) Interacting with the database to store and retrieve product information and user preferences.
 - iii) Managing user authentication and authorization.
 - iv) Potentially implementing a background process for scraping price data from external websites (requires responsible web scraping practices and adherence to terms of service).
- 3) MongoDB: A NoSQL document database that offers flexibility and scalability for storing product information, user data, and price tracking history. It will be used to store product details like name, description, image, and price history.


Integration:


Email API Integration: An email API service will be required to send price drop notifications to users.

OUTPUT

Super Deal! Gain maximum from it!!!

 Men's fashion


 Women's fashion


 Shoes

SIGN UP NOW

LOG IN

PRICEWISE





FOR MEN STYLE!

EXPLORE NOW

CREATE AN ACCOUNT

By creating account, I consent to the processing of my personal data in accordance with the [PRIVACY POLICY](#)

CREATE ACCOUNT

Already have an account? [Login](#)

[Back to Home](#)

SIGN IN

LOGIN

[Forgot Password?](#)

[Create an account](#)

[Back to Home](#)



Men's fashion Women's fashion Shoes

SIGN UP NOW

LOG IN

PRICEWISE



Super Deal! Gain maximum from it!!!

men

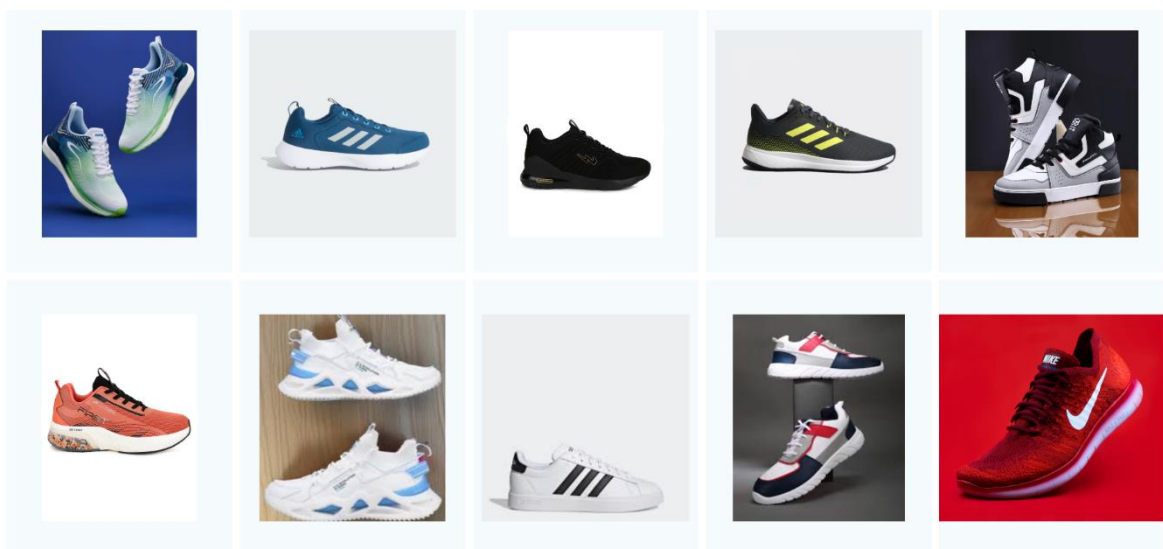
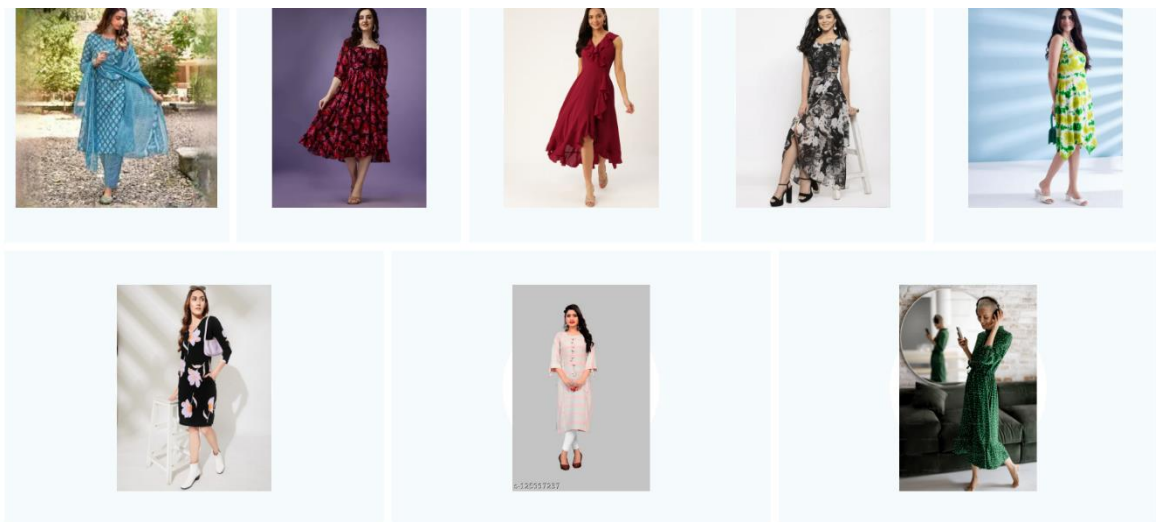
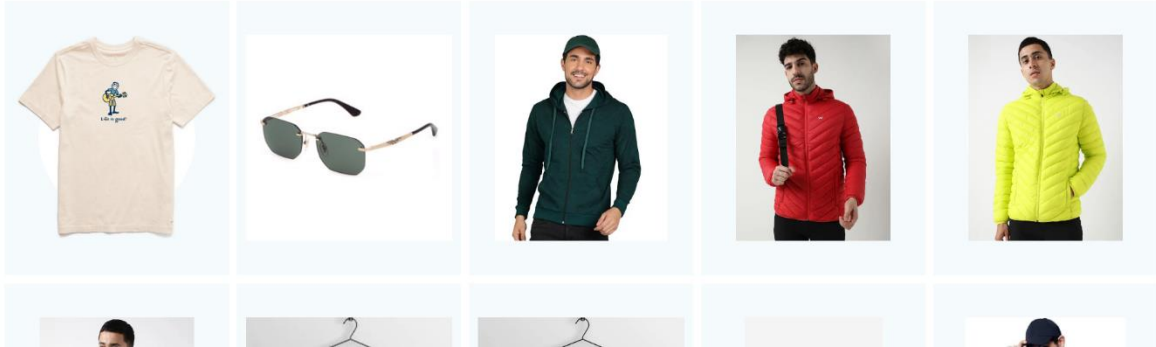
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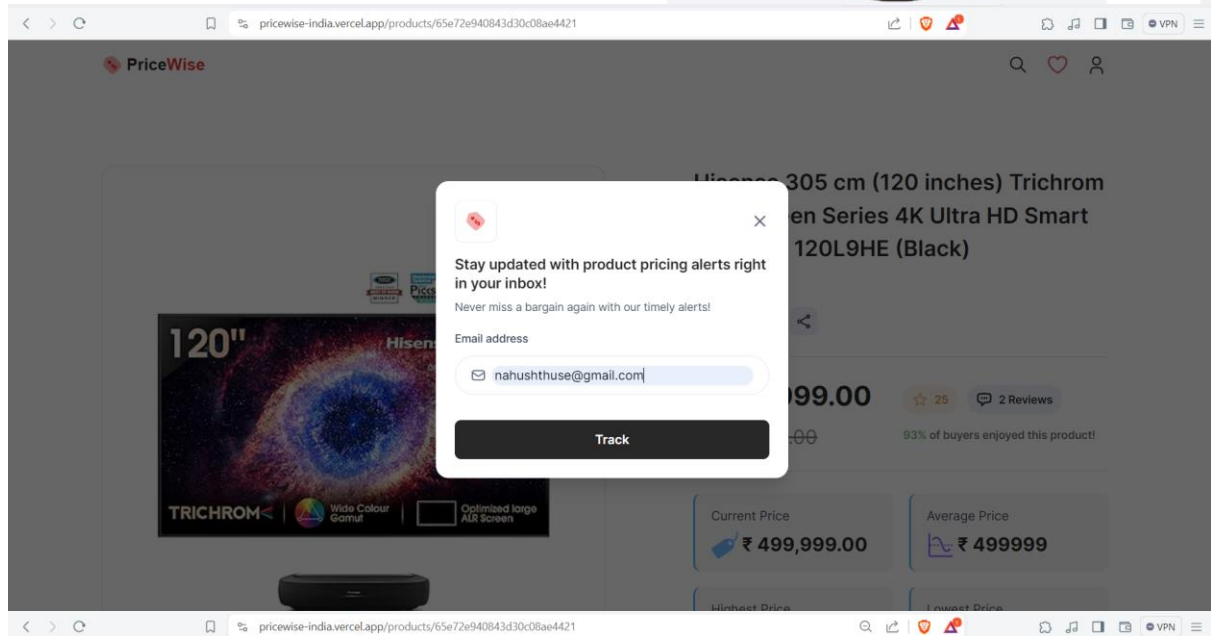
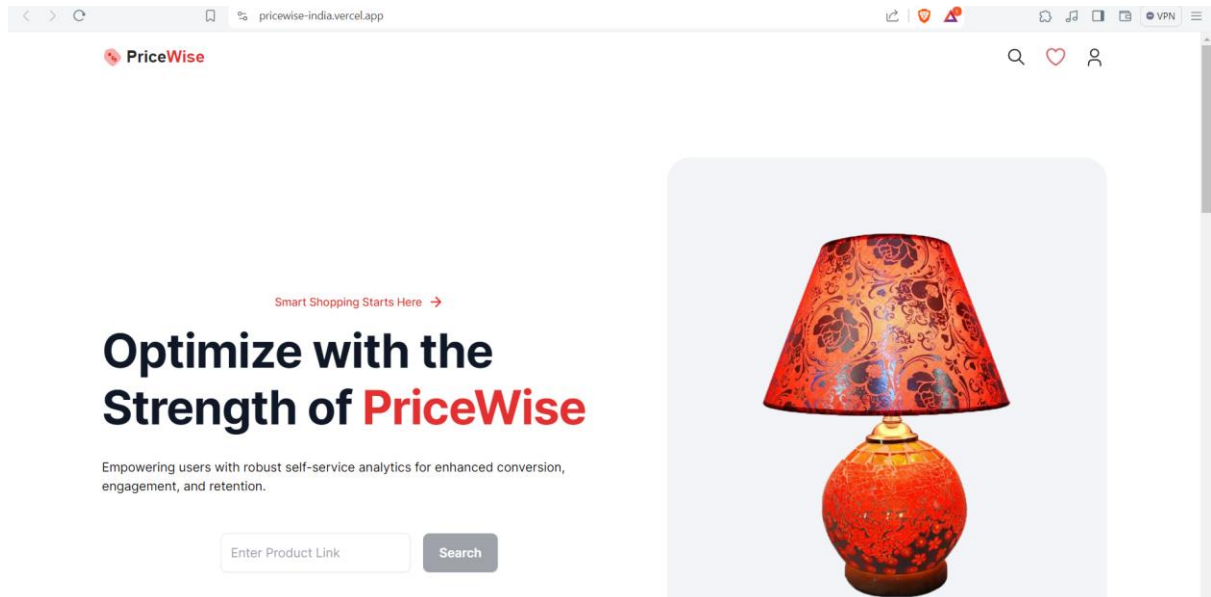
Color


Size

Sort Products:

Newest







Product Description

Hisense 305 cm (120 inches) Trichrom ALR Screen Series 4K Ultra HD Smart Laser TV 120L9HE (Black)

Visit Product

2 0 0

₹ 499,999.00 25 2 Reviews

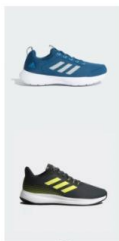
~~₹ 499,999.00~~ 93% of buyers enjoyed this product!

Current Price ₹ 499,999.00	Average Price ₹ 499999
Highest Price ₹ 499,999.00	Lowest Price ₹ 499,999.00

Track

YOUR CART

CONTINUE SHOPPING



Product: JAUNTZA SHOES
ID: 660c36ce052cad29c124114c

Size:

+ 1 -

\$ 1500



Product: MECH DUNE SHOES
ID: 660c37fe052cad29c1241150

Size:

+ 1 -

\$ 1500



Product: Jacket
ID: 65f0083d3d787b8c5e055964

Size:

+ 1 -

\$ 1000

ORDER SUMMARY

Subtotal	\$ 8500
Estimated Shipping	\$ 3.57
Shipping Discount	\$ -5.80
Total	\$ 8500

CHECKOUT NOW

Similar Products



Samsung 7 kg Fully-Automa...
₹21000



Fire-Boltt Ninja Call Pro Plus ...
₹1099



Dell G15 5520 Gaming Lapto...
₹72200



Acer Predator Helios Neo 16 ...
₹110000



HP 15.6" Portable Laptop (In...
₹7000



Hisense 305 cm (120 inches...
₹400000

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CONCLUSION

This project culminated in the development of "Elegance Edge" a user-centric e-commerce platform that empowers informed purchasing decisions through its innovative price tracking features. Elegance Edge addresses the growing need for tools that cater to price-conscious consumers navigating the dynamic online shopping landscape.

The project successfully delivered the following functionalities:

- 1) **Price Tracking:** Users can monitor the price history of specific products, allowing them to identify trends and make strategic purchase decisions based on historical data.
- 2) **Email Notifications:** The user-friendly notification system ensures users are instantly informed about price drops on their desired products, eliminating the need for constant manual monitoring.

By integrating these features, Elegance Edge fosters a more informed and empowered shopping experience. The project addressed the limitations identified in the literature review by:

- 1) **Offering Personalized Price Tracking:** Elegance Edge goes beyond simply presenting the lowest current price across retailers. It allows users to track specific products and receive personalized notifications.
- 2) **Prioritizing User Privacy:** The project prioritized data security measures, employing anonymization and encryption techniques to safeguard user information.

Future Enhancements:

Elegance Edge can be further developed by:

Expanding Product Range: Integrating a wider variety of product categories would cater to a broader user base.

Advanced Analytics: Implementing features like price prediction models could further empower users to anticipate future price movements.

Retailer Partnerships: Collaborations with online retailers could provide access to exclusive deals and potentially official product data.

Overall Impact:

Elegance Edge serves as a testament to the transformative potential of integrating price tracking features within e-commerce platforms. It fosters a more strategic and rewarding shopping experience for budget-conscious consumers. The project paves the way for future innovations in e-commerce, encouraging a user-centric approach that prioritizes informed decision-making and empowers consumers through powerful shopping tools.

REFERENCES

- 1) [1] Victor, V., Nathan, R. J., Grabara, J., & Fekete-Farkas, M. (2018). Price tracking behaviour in electronic commerce and the moderating role of fair price perception. *Journal of Management Studies*, 55(1), 182-208.
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- 3) [4] Khairkar, D., Dhamdhere, O., & Gupta, O. (2019). E-commerce Price Comparison Website Using Web Scraping. *International Journal of Innovative Research in Management (IJIRM)*, 6(11), 20-24.
- 4) [5] Xu, Y., Nepal, S., & Gong, P. (2017). Consumer privacy concerns about online behavioral advertising: A cross-cultural study. *Journal of Business Ethics*, 145(3), 545-562.