E-Commerce Product Price Tracker

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Abstract: Online buying is steadily taking the place of traditional means of shopping in every aspect. It has become more well-known and established as the new normal as a result of the pandemic. Everything, even food and shoes, is now available on E-cart. Because there are so many options accessible in every sector, consumers prefer to make purchases online. Since most customers can distinguish price differences between websites, they will typically choose the supplier that is giving the best value. To keep ahead of the competition, corporate minds are therefore constantly devising novel ways to optimize the profit from each transaction. They provide enticing discounts in an effort to attract more clients. In the e-commerce industry, dynamic pricing is currently the most used tactic. The purchaser might learn. Keeping track of the price changes, which occur around every 10 minutes, is challenging. They provide the impression that the things are on sale by doing this. This paper presents a basic price tracker application that tracks the price of a product and notifies the user when the price hits a predetermined threshold. It will respond to the user's queries and retrieve pricing information from the browser.

Key Word: price tracker, online purchasing, price range, E-commerce.

I.INTRODUCTION

Using the Django web application, a comprehensive system for user authentication, product scraping, display, and tracking is developed. Django's built-in authentication allows users to safely register and log in through personalized forms. After authenticating, users are directed to the home page where they can do product searches. The product scraping functionality increases performance by providing simultaneous scraping, which uses concurrent threads and Selenium to asynchronously fetch data from Amazon and Flipkart. Each scraped product includes information such as the name, price, rating, product URL, and image URL. Using the user interface, which presents search results with filtering and sorting options anticipated pricing, users can narrow their searches based on price range and desired sorting methods, with the system either adding new additions or updating products that have already been registered in compliance. Error management is integrated throughout the software to provide users with helpful notifications in the event of invalid inputs or other issues, ensuring a seamless and user-friendly *experience*.

II.PROPOSED SYSTEM

To encourage interaction and confidence in the digital marketplace, a user-friendly and secure platform must be built. This web application excels in providing a seamless user experience because of its Django-powered user login, product scraping, display, and tracking features. Through the use of personalized forms, users may safely register and log in, with encryption securing their login credentials. Django's authentication features prioritize user security while allowing for customized interactions according to user preferences. The application uses concurrent threading and Selenium to collect product data from popular e-commerce sites like Amazon and Flipkart. With each scraped product enhanced with vital information like URLs, pricing, reviews, and photos, this asynchronous method guarantees real-time updates. Due to its scalability and flexibility, the scraping process can be modified to adapt to websites that undergo changes over time. The application has a user-friendly design that makes it easy for users to explore and effectively search for products. With customizable options for sorting and filtering, search results are presented in an orderly fashion. By enabling customers to locate products fast depending on their preferences, this user-centric design strategy improves the browsing experience. If a user enters their desired pricing and email address, they can keep an eye out for price adjustments on products. Users are alerted in real time about price swings by the system through notifications. By guaranteeing access to affordable buying options, this proactive tracking tool increases consumer pleasure and fosters confidence. The application incorporates strong error handling techniques to reduce user annoyance. Whether it's helping users with data entry mistakes or giving them fast feedback on system problems, the application strives to provide a seamless user experience. In order to rapidly handle user questions and concerns, dedicated support channels are also accessible.

III. WORKING

This Django application integrates a wide range of features to offer consumers a robust and smooth experience. It is designed as a complete pricing tracking and comparison tool specifically for online shopping platforms. Its main component is a strong user registration and authentication system that makes use of Django's built-in capabilities to guarantee a safe and easy onboarding procedure. Users may register with confidence knowing their information is secure since unique usernames and emails are validated with several templates to suit various user requirements, the well-thought-out user interface is available. The user experience is simple and easy to use, with options ranging from personalized home pages that display user details to dynamic search and result pages that use Selenium to retrieve product data in real-time from popular platforms like Amazon and Flipkart. To provide a comprehensive solution for price comparison and tracking, users may also keep an eye on price changes with a dedicated product tracking page. The backend activities of the website are precisely and efficiently driven by Django's views and functions. An effortless user experience is guaranteed by the skillful management of user identification, product tracking, search and scraping features, and error handling. In order to store, retrieve, and manage user, product, and tracking data with ease, Django's ORM makes it easier to interface with the PostgreSQL database. The program uses concurrency techniques and optimization methodologies to maximize performance and improve efficiency. Concurrent futures, a module for Python, is used to effectively scrape content from several platforms at once, cutting down on processing time and improving user experience. All things considered, this Django application is a comprehensive and well-coordinated system that provides a wealth of features for price comparison and tracking in the context of online shopping. It provides a fluid and intuitive user experience while empowering customers with the resources they need to make informed purchasing decisions through the seamless integration of a wide range of features and functionalities. Every part of the application—including user registration, product search, price monitoring, and error handling—is painstakingly planned and carried out to give users a strong and flawless pricing tracking and comparison tool for online shopping platforms.

IV. RESULT AND ANALYSIS

User Verification and Protection:

Secure platform access is ensured by implementing custom forms for user registration and login in conjunction with Django's integrated authentication mechanism. Sustaining trust and protecting user data requires robust user authentication.

Product Enrichment and Scraping:

Concurrent threading and Selenium allow for the effective scraping of product data from popular e-commerce sites like Amazon and Flipkart, adding crucial details to each product entry. To give users accurate and current information, real-time product data is necessary.

User Interface and Encounter:

To improve user experience, the user interface provides easy-to-use navigation, search capabilities, and customizable choices for filtering and sorting search results. Maintaining user interest and enabling smooth platform interaction depend heavily on an intuitive user interface.

Price Tracking and Notifications:

By entering their email address and the anticipated price, users may keep an eye on products for price changes, and the system will notify them when necessary. Features that track prices improve user happiness by giving users up-to-date information on the best times to buy. Users are kept informed through email notifications, which encourages them to stay on the platform longer.

Error Handling and User Feedback:

The program is equipped with strong error handling methods that notify users when they enter incorrectly or encounter other problems. Error-control that is done well reduces annoyance for the user and improves their experience in general. Getting clear feedback encourages consumers to keep using the platform by helping them solve problems fast.

V. CONCLUSION

The System, a Real-Time Search Engine, is a revolutionary tool that has the potential to completely change the online retail market. It promises and actively delivers on user convenience and efficiency by cleverly combining product data from numerous e-commerce websites. The days of tiresome manual searches and time-consuming price comparisons between various platforms are long gone; instead, the system serves as a comprehensive compass, conveniently pointing consumers in the direction of the greatest offers and creating an unmatched shopping experience. This creative engine's built-in promise of time and effort savings not only improves user experience but also radically changes the way that internet commerce is thought of. Now that the laborious process of manual screening is over, clients can focus their efforts on more significant elements. Customers may focus on other important areas of their lives now that the laborious process of manual filtering is no longer necessary, knowing that their search for the ideal product at the ideal price is being skillfully handled.

Further solidifying the system's reputation as a ray of integrity and dependability in the digital marketplace are the guarantees of fair pricing and the capacity to profit from abrupt price swings. However, the genius of your Real-Time Search Engine goes beyond simple affordability and ease of use; it represents a dedication to both technological progress and user empowerment. Its smooth integration of state-of-the-art data processing and web crawling features highlights a commitment to quality and accuracy, guaranteeing that each user contact is distinguished by efficiency and accuracy. Real-Time Search

Engines are not just a problem solver; they are a revolution in the way we view and interact with online commerce. By crawling the real-time price from the website, the pricing for the customer will be compared to the current price; if the condition is met, an alert informing the user of the new price will be sent.

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