

Research Paper on Product & Price Comparison Tool

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Abstract : *Thorough overview of different goods and their costs. As e-commerce has grown, customers now have access to an increasingly greater variety of goods and merchants. Customers now find it challenging to evaluate goods and prices across this research study presents a tool for comparing products and prices that is intended to assist customers in making wise purchases. The application compiles information from several e-commerce sites and displays a side-by-side assessment of items and pricing. The tool's value in assisting clients with product evaluation and pricing comparison is observed in the study. Simply put, it implies that by offering a proper and comprehensive platform for both price and item a comparison, the tool helps consumers make better decisions.*

1. Introduction :

It is now simpler than ever for clients to make purchases online thanks to the growth of e-commerce. It would be simpler for clients to make current judgements if they can compare items and prices from several e-commerce websites in one location. This study report intends to assess the effectiveness of a tool for comparing prices and products in assisting customers with product exploration and pricing comparison. The study reveals the tool's mechanisms, organisational elements, and effects on customer choice. Tools for comparing products and prices include websites or software that allow users to assess the characteristics, specifications, and prices of numerous products from a variety of suppliers or retailers. These tools, which give a variety of options, make it easier for clients to make informed purchase decisions. often shop at different stores, which confuses them and regularly leads to overspend.

2. Modified Recommendation System :

A customised system of suggestions helps vendors increase sales and raise the overall calibre of the online market in addition to offering customers with helpful advice. A variety

of systems for suggestions, include Content-based, Rule-based, and Collaborative-filtering systems as a whole were addressed by the study. We found that semantically linkage can enhance suggestions in recommendation systems. Whereas MAPRS, or multi-agent performing multiple tasks, may be utilised to create an internet-based shopping suggestion system, this approach has drawbacks since it is static and raises security issues.

3. Google Shopping System :

Google unveiled a system with the intention of having a single site for all items offered online by diverse providers. The user may browse areas, use a search query to hunt for certain products, and examine products that are on sale. It ranks a variety of products that are offered for sale online through various merchants, which are then arranged in order of relevance, taking into consideration your search terms and other Google actions. Users may browse merchants' frequently updated offerings by using Google Shopping as their shopping tool. The most powerful features of the architecture include,

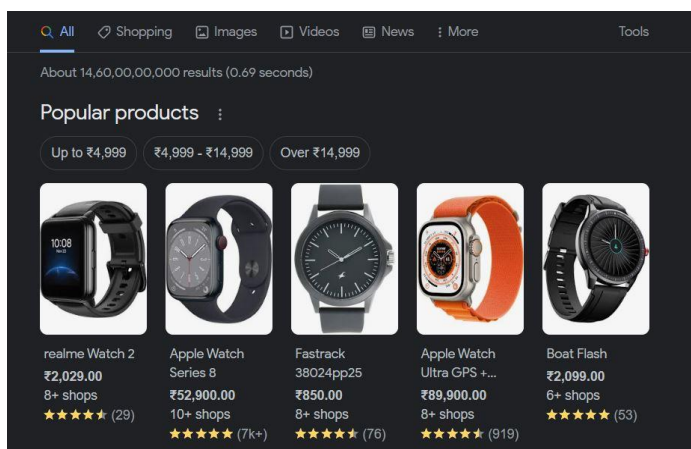
1) Beneficial: Google Shopping is a useful service that uses Google's search engine to direct you to online shops where you may locate and study things before making a purchase.

2) Jam-packed: A wide range of things, from the typical to the unusual, are available.

3) Robust : Very quickly after beginning your search, you'll be provided with images of related items and links to further details, such as the stores that sell them.

However, the system has a number of characteristics that may not constantly be helpful to the user. Although the algorithm does provide results that contain a variety of things from other web pages, the results that are marked as

"Sponsored" are prioritized and classified to comply with Google's advertisement reimbursement policy.



Although Google keeps track of consumer purchases to be able to provide customised product recommendations, which we strive to include in our system, the Google Buying mechanism does not provide consumers with a way to access and analyse their history of purchases data. Our solution aims to provide the user with an improved apparent comparison of goods via the use of graphical statistical instruments including the display of each user's purchasing habits in the form of clear graphs.

By using a chatbot to communicate with visitors, a site's accessibility and experience for users will both be enhanced. It is intended to answer FAQs (frequently asked questions) and to give basic instructions for using the website.

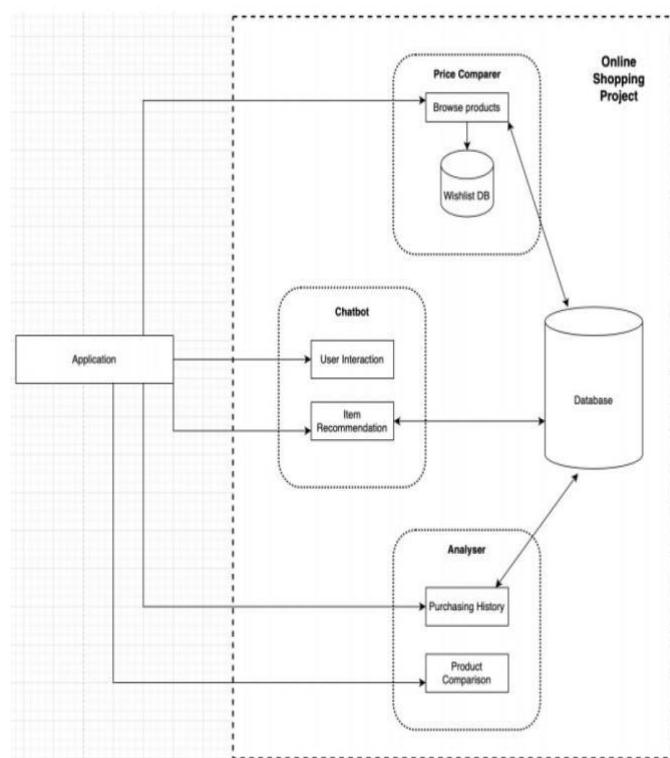
4. Meta-Search Algorithm :

MetaSearch engine is the technique employed in the project. A search engine is a search tool that gathers information from other search engines and utilizes it to generate its own Internet results. In addition to receiving input from users, metasearch engines often ask outside web crawlers for information. A sufficient amount of information is gathered, shaped by their placements, and shown for the customers. This is a complex and highly effective search method. Since it collects real-time data from several websites, every change is immediately reflected in the results. To help users obtain specific material in a certain subject, a variety of meta search engines are available. Savvysearching and MetaSearch are included in these. The user may submit just one keyword search to this algorithm. Then it creates a virtual database so that it may collect data from numerous sources and combine the resulting information. It is important to ensure that the data is repeated.

5. System Architecture :

Price Comparer, Chatbot, and Analyzer, the system's three separate sections, each of which satisfies a functional need for our application's functionality. The price comparer and analyzer's two components are integrated into a single component, however the chatbot operates as a separately module.

The relational database is a consumer-based database accessed by the firebase database and run online on a cloud machine. All of the modules have access to this database, allowing each to run separately. A simple module, the price comparer tracks the items the customer is interested in using a separate user-based Wishlist database while also attempting to collect prices from other websites and show the best bargain.

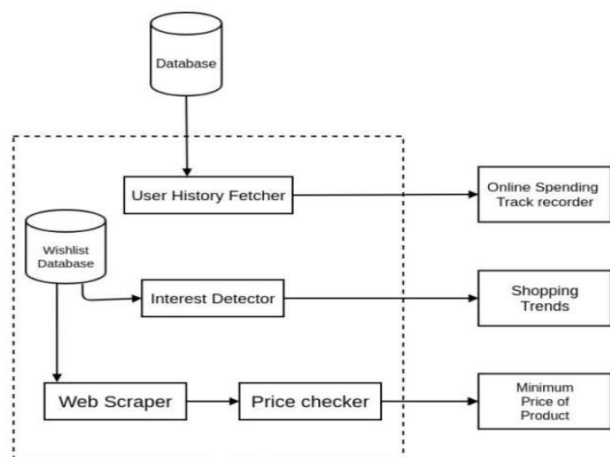


System Architecture Diagram

6. Analyser Module :

This module uses the Python web mining tools Selenium and BeautifulSoup to compare and mine the various prices for the various items across websites, which will then be shown to the user. The module also records the user's preferences in the form of product categories, which it uses to suggest related items that the user is most likely to purchase based on a database of user preferences. The module further has access to the User's purchase history is then utilised to

graphically present User's purchase history for better data analysis.



Analyser Design

7. Web Scrapping :

- Using the product name as the search parameter, many websites will be searched.
- Sending Lovely Soup and Selenium the product name as a Link.
- Remove each product's label, price, image, and URL from each website. Compare the product pricing and make sure it corresponds to the search term.
- Show the website while filtering on an accuracy basis in increasing order of the product's price.

For the Flipkart website: Because Flipkart displays items utilising asynchronous loading techniques, it is challenging to retrieve the data using BeautifulSoup. Selenium is utilised as an alternative since it enables data scraping even when the source of the data is loaded asynchronously or in real time.

Flipkart Algorithm :

- Provide the Selenium driver the name of the product to be searched for Using the XPath and class of the web components, remove the product label, price, and image.
- The product information are scraped using the corresponding web element's XPath if the product falls inside a category of unique situations Include a list of the product information Repetition of steps two and three for every product on the page.

Depending on the category they fall under, the items are displayed differently. As a result, the web element that contains product data is modified for various sorts of items.

8. Future Scope :

Future developments may involve adding augmented reality (AR) to an existing scan so that when a QR code is read, the product is displayed as a layout over the real-time cameras user interface allowing the user to experience it virtually while sitting in the comfort of their own home. Numerous items, including clothing, cosmetics, and home furnishings, can be tried on at the user's convenience. This may be a future improvement to the scanner that is currently being considered.

9. Conclusion :

The online shopping platform allows the user to quickly find the product's lowest price on the internet. Because there are several easily accessible e-commerce websites with thousands of products, our system combines powerful web scraping technology and analytics to obtain the lowest cost for a product. The customer may find the best bargain without having to visit many websites thanks to the unified application interface. This site is really easy to use since it gathers search results from several platforms in one place. The integrated notification system in our application provides users with a more centralised point of access and enables them to keep track on the prices of their chosen commodities.

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