Software Design Lab

Project Report

Group No. 7

Pricedeck

A price comparison website

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ABSTRACT :

Every customer looks for the finest deals and discounts before making a purchase. Nowadays, consumers research products online before making any purchase. Cost or pricing is one of the primary elements that influence a consumer's decision to buy a product. Before buying any product, shoppers frequently compare prices.

However, since it is challenging to visit every website for price comparison, there needs to be a way to simplify this process. The goal of the **price comparison project** is to make it simple for clients to choose products that will save them money when purchasing online from ecommerce websites like **Amazon** and **Flipkart**. Most clients choose to purchase their necessities online due to their busy lifestyles, particularly those who live in urban areas. Additionally, customers always look for the best deal when buying things; therefore, by using price comparison websites, customers can view all product prices in one location without visiting every website.

Our **Price Deck** is a platform which provides the facility for the customer to compare the prices from different e-commerce websites so that the user can search for their desired products on our website and they can see the price details of that particular product from different e-commerce websites in a sorted manner. Our platform is highly organized and responsively developed, keeping the customer's experience in mind and allowing them to utilize our website on both laptops and mobile devices. We offer a user-friendly user interface on our website.

PROBLEM DESCRIPTION :

Users Access the internet and get information through different e-commerce websites. This way of approach to finding data from websites is a time-consuming task. Searching into various websites for the best price consumes our valuable time.

Buyers tend to compare prices before booking tickets or purchasing products. It has become challenging to visit each & every website for price comparison, and sometimes we buy the product for a higher price.

OBJECTIVES :

Our main objective is to deliver a user-friendly interface where you can see all the product prices in one place. Our price comparison website has the following features:

- To provide customers with a list of price comparisons, we sort the list of items based on their prices.
- To increase price consciousness among consumers.
- Ensure that the getting price details are updated regularly
- Users can add their required products to the cart, and if they click on a product, it will redirect to that e-commerce website.

IMPLEMENTATION :

Front-end software: reactjs, tailwind CSS.

Back-end software: python, flask (python web framework)

•*WORKING ON FRONTEND :*

One of the main objectives is to deliver a user-friendly interface for our website where you can see all the products' prices in one place. First, we started with making the basic design of our front-end page in a wireframe. After that, we developed our front-end page using reactjs and tailwind CSS. **React.js** is an open-source javascript framework and library; It is used for building interactive user interfaces and web applications quickly and efficiently, writing less code than you would with vanilla javascript. **Tailwind** is a CSS framework that allows us to write and maintain application code more rapidly than custom CSS. So this makes it easier for us to style our web page.

•*DEVELOPING OUR BACKEND :*

Our backend server scrapes data and returns a list of JSON objects containing product data. When a request is sent to the server, the JSON object has the product name, product image, product price, link to the buying page of the product, the site name from which the product is taken, and the product's rating.

We are getting the data of products by scrapping an e-commerce website. For scrapping, we are using **python** as it provides a rich set of libraries. We are using the **requests** library to load the URL and the **BeautifulSoup** library to parse the loaded page and get the desired

information. We have one function which scrapes both Flipkart and amazon.

We pass data as one parameter to this function: a dictionary containing a class dictionary, tags dictionary, attributes dictionary, link to scrape and headers which are required while we send requests to the webpage. So by changing the value of the data dictionary that we pass into our scrapping function, we can scrape Flipkart and amazon.

We had a problem when we sent requests using the same user agent more than five times continuously; we were getting blocked. We send a request every time the search button is pressed (the scrapping function is called). To avoid blocking, we collected a list of user agents and stored them in a list. Every time we send a request, we take a user-agent randomly from that list and pass it into the headers of our request function. So every time we make a request, we send requests from different user agents so we don't get blocked, and our scraper function runs finely. In this way, we overcome this problem.

This is how our backend server works, which scrapes data from Flipkart and amazon and returns a list of JSON objects when a request is made. We are using **firebase** authentication and firebase **firestore** to store users' emails. Under each user, we store the product details that each user selected to get an alert when there is a price drop.

DESIGN OF OUR WEBSITE :

When a user opens our website, they see the home page of our website, which consists of a search box, login button and search button. The user has to enter the required product name in the search box, and after entering the word, it will make a request to the server, and they will get price details of the products in sorted order.

Our website mainly consists of the following:

•*HOME PAGE:*

It displays the title of our website, a search box, a search button and a login button.

•*PRODUCT PAGE:*

Displays the details of product prices which the user enters in the search box. On the product page, we provide an image of that product, the rating, and the price and show the e-commerce website to which a product belongs. When a user clicks on the product image, it will redirect to that particular e-commerce website, and the user can buy that product from there.

•*USER-PROFILE PAGE:*

On our website, we provide a unique feature, i.e. the user can add the product to the cart, and he/she will get an email alert when the product price is dropped. For this, the user has to log in to our website through google email. We are using firebase to track his login status. When a user logins successfully, they can see the add button for each product on the product page and if he clicks on it, that particular product will be added to the cart.

The user profile displays the details about the wishlist of products that the user added to the cart. He also sees the current price of that product and the previous price of the product details.

Github link: https://github.com/cmdsiraj/PriceDeck