

PriceGazer – Automated Price Comparison Tool

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Abstract - E-commerce is the market which is constantly growing and is a boom in modern business. E-commerce provides a platform where people can directly buy goods or services online without any intermediary service. Different e-commerce platforms are available for the customers where they can buy the products. Comparing prices on different e-commerce sites is an important task for online retailers as well as e-shoppers. Online merchants or retailers compare their prices to the prices of their competitors in order to stay in the competition whereas the customers aim at finding the best price for all the products that they want to purchase. Also the prices of the products on the internet changes very often, there is a need for an automated approach to identify, collect and compare the products and prices of these products. This paper elicitates in building an automation system for comparing prices of the products from different online shopping systems (OSS) using browser automation and web scraping. This paper aims at building a system which reduces the time consuming and tedious process of manually searching and comparing products from different online shopping systems or e-commerce sites.

Keywords - automation system, browser automation, e-commerce, online merchants, online shopping systems, web scraping

I. INTRODUCTION

When it comes to online shopping there bound to be a website that sells just what you want If there's a particular brand or store you like you can go straight so their website or you can visit a shopping website has Flipkart or Amazon, which carry broad ranges of new items. But buying a single product is an easy task but when it comes to buying a long list of products like monthly purchase buying different computer systems or parts of the computer in companies or in different sectors consume a lot of time.

One person has to sit down and check each and every product on different websites, write down the price of a tech product from those different websites and then calculate the total price. So that purchase can be from a website that is close to a predefined budget specific amount to control the cash outflows and make purchases at reasonable prices.

So, performing this task for one product takes a lot of time but if there are many products then it will be time-consuming. So much time will be consumed in this process for each predict, assume the list contains 10 products, 20 products or who knows even more

We are in tech where almost all the manual system is being transformed to digital for the sake of human need. People are moving to digitize life for health, safety and enhancement in their daily lives. As the technology is developing significantly, people are forming themselves to be more tech savvy compared to any previous time. From

the personal to working life technology has the important necessary steps to overcome unforeseen situation. Even the wholesaler also changed its business term from hands on to automation.

This where our system comes into the picture, our system will perform all these tasks automatically for every product which will save the time and energy of a person plus it is done by machine error like calculation error will be low.

II. LITERATURE SURVEY

1. Price Comparisons on the Internet Based on Computational Intelligence [1]

From this paper, we understood that as the popularity increases on the online shopping websites, one of the most important web-based business intermediaries for both merchants and online shoppers have been PCSs. Typically, comparison sites gather information on a wide range of products and the prices imposed on them by different merchants, and enable customers to select best products in their estimated budget and to make their purchase decisions effective. It is well known that such web sites can highly reduce the costs of the products during online shopping, which has led many online shoppers to begin their shopping by first visiting a PCS such as Nextag.com, PriceGrabber.com, or Bizrate.com so that they are best benefited in terms of money.[1]

2. Comparison of E-commerce Products using web mining [2]

From this paper, we precisely understood that web mining is a data mining technique that can be used for comparison and getting best values on products and items from various online websites or E-commerce websites. Web mining helps customers to improve the power of web search engines by identifying the web pages and classifying the web documents which in turn benefits the customers while purchasing products online. It also helps customers to analyze and get a comprehensive idea on the prices displayed on different websites. Ultimately, this will bring together best offers and deals from all leading online websites and will in turn help customers to shop online and gain best out of all.[2]

3. Mining E-Commerce Data from E-Shop Websites [3]

This paper helped us understand how extracting product data from different arbitrary E-commerce websites help us to get the best results. The simple configuration of the extraction tasks as well as the ability to automatically identify the product records within a whole Ecommerce website signifies the innovation of the approach in comparison to the present approaches and tools for Web Data Extraction and price comparison is the independence from the language and the product domain of E-commerce websites.[3]

4. E-commerce network with price comparator sites [4]

This paper demonstrates online price comparators, which allows comparison of prices of various online stores and these belong to successful applications. These sites are also known as price comparisons, sales points or retailers on the internet. To get user references for the relevant deals and to get price information customers use price comparator sites. The rarely found context of physical retail purchases are been provided by price comparator sites which reduces customers search costs as well as help one to make wise decisions.[4]

III. PROPOSED SYSTEM

To overcome the manual and tedious process of finding prices of the product, the Automation System is proposed. The purpose of the Automation System is to save time and save money.

Our goal is to create a system where the user provides a list of products and then the system will find those products on different e-commerce websites. The system will list down the prices of all products from different e-commerce websites in Google Sheet. This will allow user to analyze prices from different websites and identify where the product is available cheaply. This will help in saving money. Total cost of all products will be also calculated. This will help

the user if there is a specific amount to be spent on products for example quotation.

The system automates a complete cycle covering all budgeting operations from input of product list to calculating the total cost. As searching for products, listing down the prices of those products is done by the system this will eventually save time.

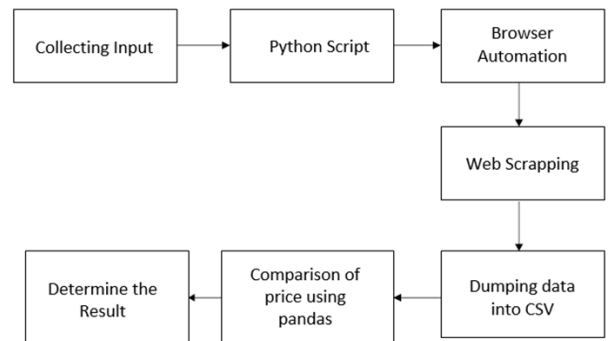


Figure 1: Flow Diagram

1. Collecting Input

The end user will provide the list of all products which he/she wants to buy. Users should provide proper names of the products whose price is to be searched.

2. Python Script

Next the input details will be processed by the python script and the code will be executed.

3. Browser Automation

Browser automation tools are used to automate error prone as well as repetitive tasks of providing the input again and again. Selenium is a web-based automation tool. Using Selenium, we will navigate to different websites, search for the given product. Using a browser automation tool will help the system to automatically open the browser. It will search for the E-commerce website (For example: Flipkart). After navigating to the website it will search for each product which is present in the Google Sheet. Every product will be searched.

4. Web Scrapping

Web Scrapping or Web Data Extraction is a way used to extract large amounts of data from websites and the data which is extracted is saved to a local file in a computer or to a database in table (spreadsheet) format. BeautifulSoup is a Python package for parsing HTML and for our system it will be used to extract the different data related to products from different websites. BeautifulSoup will extract the data (price, URL, name) and store it in excel sheet.

5. Dumping data into CSV

Data which is collected by performing Web Scrapping will be stored in the same Google Sheet in which the product list

is provided by the user. Data will contain the name of the product price and url. Each data will be stored in their respective column. After each product price is added total cost will be calculated.

6. Comparison of products

Prices from different websites will be compared once it is in the sheet. The website that offers the product at the best and lowest price will be selected.

7. Determine the result

After the comparison of product price from different websites the product with the lowest and best price will be selected and its related information will be stored in the Google Sheet.

IV. WORKING OF THE SYSTEM

In this section, we explain the working of our proposed system illustrated with the help of screenshots shown below.



Figure 1: Getting List of Items

A. Getting List of Items

First Step is to take input from the user. User will first provide the number of items to be searched. After that user will be asked to enter the name of those products.

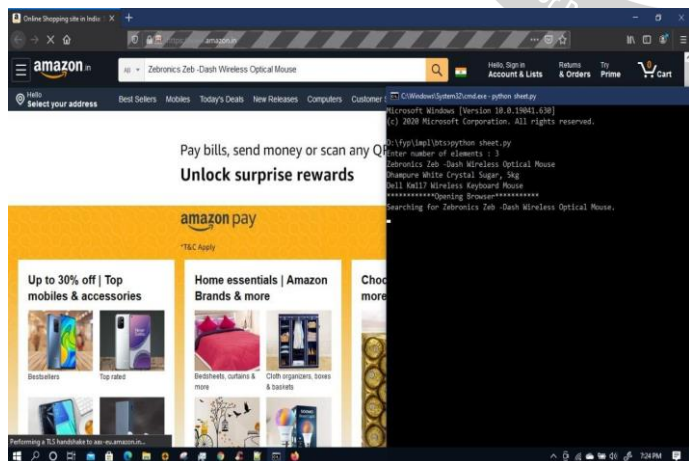


Figure 2: Opening Browser

B. Opening Browser and Redirecting to Amazon

After items are entered by the user the script will open the browser. Then browser will be redirect to the Amazon Website. First it will search the list of items on the Amazon website.

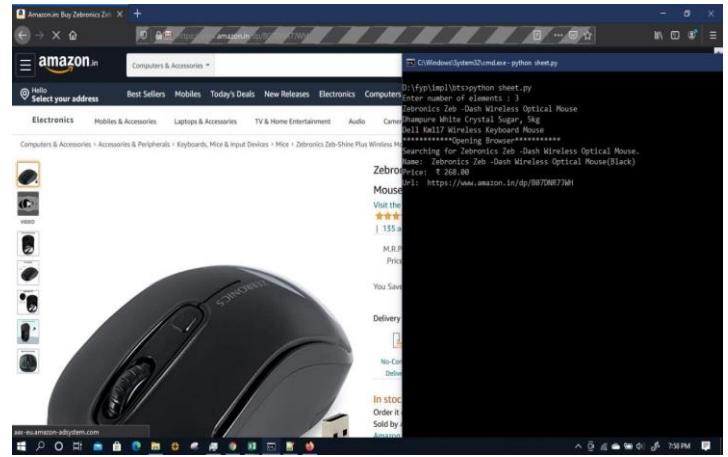


Figure 3: Getting Product Name and Price

C. Getting Product Name and Price

Each Product will be searched on Amazon and each product's price, name and price will be extracted. This process will be done for every product entered by the user.

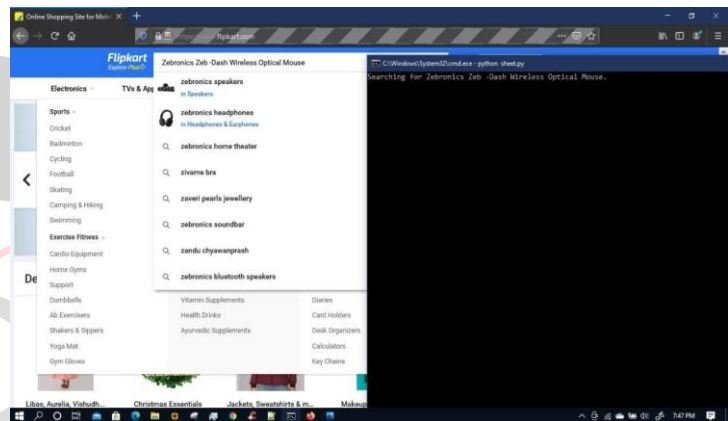
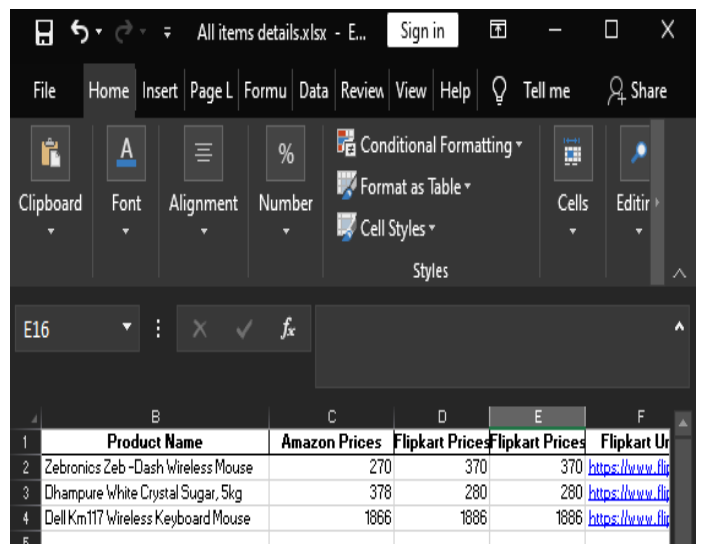


Figure 4: Searching Products on Flipkart

D. Searching Products on Flipkart

After searching every product and extracting its name, price and url browser will be redirected to Flipkart website. On Flipkart again each product will be searched individually and its name, price, and url will be extracted from Flipkart.

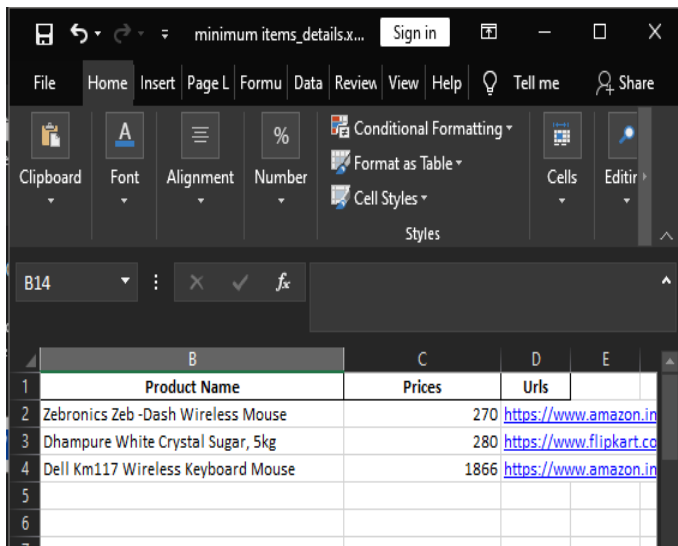


	B	C	D	E	F
	Product Name	Amazon Prices	Flipkart Prices	Flipkart Prices	Flipkart Ur
1	Zebtronics Zeb -Dash Wireless Mouse	270	370	370	https://www.fli
2	Dhampure White Crystal Sugar, 5kg	378	280	280	https://www.fli
3	Dell Km117 Wireless Keyboard Mouse	1866	1866	1866	https://www.fli

Figure 5: Storing all the extracted data in Excel File

E. Storing all the extracted data in Excel File

All the extracted data is stored in an Excel File which include columns Product Name, Amazon Price, Flipkart Price, Flipkart URL and Amzaon URL. It contains data for each product.



	B	C	D	E
1	Product Name	Prices	Urls	
2	Zebtronics Zeb -Dash Wireless Mouse	270	https://www.amazon.in	
3	Dhampure White Crystal Sugar, 5kg	280	https://www.flipkart.co	
4	Dell Km117 Wireless Keyboard Mouse	1866	https://www.amazon.in	
5				
6				

Figure 6: Storing data based on Minimum Price

F. Storing data based on Minimum Price

Another Excel file is created in which product details are stored based on price. Here comparison is between Amazon Price and Flipkart Price and site which provide where product is available at minimum price is stored in this Excel file.

V. CONCLUSION

In today's scenario, the lifestyle of people has changed. People have now shifted to online shopping by making the purchases from online websites While buying a single product online is simple and convenient, if the list of items to be purchased is quite long like monthly purchases, then again there is a problem regarding the pricing of products on different sites.

The main investigation of this paper was exploring a system which can automate the tasks for the users and also help them in finding the best online shopping site which provides products at a very reasonable price and of the best quality.

In order to differentiate our system with all the other online comparison systems or websites in India, the user will be able to provide a list of products instead of searching for a single product. The primary focus of the system will be on Home appliances, Groceries, Electronics.

Also the system provides the user with some useful and helpful information that will help the user in making appropriate decision while making a purchase. Such a system can also be used in various large business sectors which will play a vital role in controlling the company's cash flow such that it will ensure that only necessary purchases are made at a very reasonable price.

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