THE DECISION MAKING OF THE CONSUMERS IN ECOMMERCE WEBSITES

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ABSTRACT:

Price comparison websites are designed to compare the price of goods and services from a range of providers, which will help consumer in making decision to choose product that will save their money through online. Considering the customers' busy lifestyle especially those who are living in the city area, most of the consumers prefer to buy their needs through the internet because it saves their time. Besides, consumers always go for the cheaper price in purchasing products therefore by using price comparison website, customers do not have to travel from shop to shop only to survey the price offered by different shop for the same product. They can check it from the price comparison website itself and decide where they should buy the product they need. This project, named as product price comparison is the place where shoppers could find the great deals on the product. The best deals will be clearly highlighted. To obtain best deals from Price comparison websites web crawlers and web scrapping techniques are used to fetch detailed information. This way, paper aims to provide solution for online customers to buy product at good deal and save their valuable time, effort, and money.

Key Words: python , price comparison , visualization , matplotlib library , e-commerce.

I.INTRODUCTION

In the current era of online business, e-commerce has become a huge market for the people to buy goods online. Increasing use of smart device and other medium has paved the way for users to buy products almost from anywhere. This has increased involvement of online buyers evolving ecommerce business. These large numbers of e-commerce websites put users in turmoil to search and choose to buy a single product from multiple e-commerce websites. The proposed solution helps online users to grab best deal for their product from multiple e-commerce websites on single web interface. This will in turn save users time, money, and efforts to find the same product prices on different e-commerce websites. Proposed system uses web scraping technique to extract data from e-commerce web pages and web crawler to links for products. Additionally, this page contains the feature of price comparison visualization in product price comparision website.

II.OBJECTIVE

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The data collected from the csv files of the Flipkart and Amazon websites are for price comparison The compared data is also visualized for consumers to view the compared table and visulization in product price comparison website.

III.RELATED WORKS

- In order to make this project more credible, previous research and article that related to price comparison website has been gathered and analyzed. Hence, this chapter covers the literature review which is the analytical, critical and objective review of written materials. There are three published research articles and journals that are being used as the main references for the literature review of this project.

- This research paper was written by Moraga-Gonzalez J.L and Wildenbeest M.R and it was published in July, 2011. The research was focus on the price comparison sites and its connotation towards market efficiency and price competition. The price comparison sites attract all the involved parties no matter suppliers or the consumers to its platform as it has become the aggregator of product information.

- Nowadays people usually conduct first research on the internet regarding a particular product or service that they want which is very convenient as compared to what consumers have to do previously when there is no internet. Back then, consumers have to go through books, magazines, newspaper, encyclopedia and other medium to find needed information meanwhile yellow pages, directories, advertisements and others are useful to locate business and their products. Everything has to be done manually and 12 requires a lot of time, energy and resources to find information without the help of internet. Comparison sites are known as the second type of search technologies as it helps users find products and services according to users' have chosen. It helps consumers to easily compare between the alternatives available in the market and reduce consumer search costs at the same time.

- Compared to the price comparison site from its first being established and act as online classifieds, nowadays comparison sites able to do a lot of things such as draw the products' cost, able to trawl sites and give the sites much greater control over the users with the help of current technology. It gathers and aggregate price, products and other relevant information from third-party sellers and presents it to the consumers with its own way.

- There are several business models usually used by the price comparison website and the most widely implemented is the charge will be on the sellers if they want to be listed and users can access the sites for free. The fee usually based on a cost-per-click and is paid every time a consumer is referred to the seller's website from the comparison site. Sellers also have the alternative to pay fee if a consumer buys the product which is being implemented by Pricefight.com. Other than that is providing free services for both sellers and buyers and obtain revenue from the advertisers like what being practiced by Google Product Search. The less chosen business model is the sellers are listed for free meanwhile membership fee is charged towards the consumers such as AngeList.com. Whatever model is being used, the most important thing is the agreement from the both sides on the chosen model.

- Comparison sites have the potential in providing abundant of data that might be useful for further analysis for example, analyze how exactly consumers search for products and provide indications about the best way to improve the current system.

- The research entitled 'The Use of Price Comparison Sites in the UK General Insurance Market' which written by Emily Knight, a strategist for Consumer Intelligence has reported the current performance, media coverage, usage and marketing activity of price comparison sites in the UK General Insurance sector.

- The results shows that there is increased on the advertising spend and competition and it gives adverse effect on the financial performance towards the price comparison sites. Meanwhile the number of consumers using price comparison sites for quotes has remains high and its average number of sites used are increasing over time. Based on the research, 8 out of 10 people are likely to get quotes from the price comparison sites in the future which show good sign of price comparison sites to stay in business in future.

- To compete with other brands through the internet, big brands usually have to face big advertising spends. Based on Nielsen advertising data, back in 2006 it requires £35m has increased to £85m in 2009. The amount of spend needed to compete with the big player with the big name has make it tough for other competitors unless they have a good marketing budget. Some of the comparison sites have launched various campaigns to promote their sites and get more traffic for example '*Compare the Market*' that creates a personality designed to appeal to consumers and improve their impression towards the brand at the same time increase its web traffic and boost conversion rates.

- This article was written by Reuther T. – Senior Editor of internetretailer.com, a portal related to e commerce. It is based on the findings of a survey made by Deloitte LLP, concludes that a fifth of online consumers plan to conduct more web research this year (2012) as compared to year 2011 before buying. Delaoitte LLP, a consulting, auditing and financial services firm, has conducted the online survey on 5-12 July 2012 towards 1, 314 parents of children in kindergarten through the 12th grade. Around 20% of the survey respondents plan to shop online this year but the web is playing the important role in giving influence for the purchases either it is done online or offline (going to the shop to purchase). The result shows that a third of the parents who responded plan to visit e-commerce sites, retail blogs and other web locations to learn before buying the items.

- Not only that, the survey also resulted that 57% of the respondents owned smart phones and use it as shopping tools for seeking price information with 63%, getting coupons and discounts with 45%, and finding store locations with 38% were among the most popular mobile shopping activities. From this result, it shows that there is big number of people who are using smart phone to check on the price information of a certain product. Therefore, based on this article, it can be conclude that most of the customers, as well as potential customers of a product will make some research online before making a purchase.

IV.SYSTEM ARCHITECTURE

Figure 4.1 describe system architecture and its detailed working procedure. The front-end system provides a graphical user interface (GUI) in the form of website where clients interact with the system whereas the back-end consists of web crawling and scrapping technique in order to extract product information from different e-commerce websites. The extracted information of e-commerce products is then displayed on website. Client request for desired product from main website and query is fired in local database. Products Information is displayed on main web page. Client can see price of required product at one place present on different E-commerce firms. Another feature is provided on the website to show the visualization of the price comparison in product price comparison website.

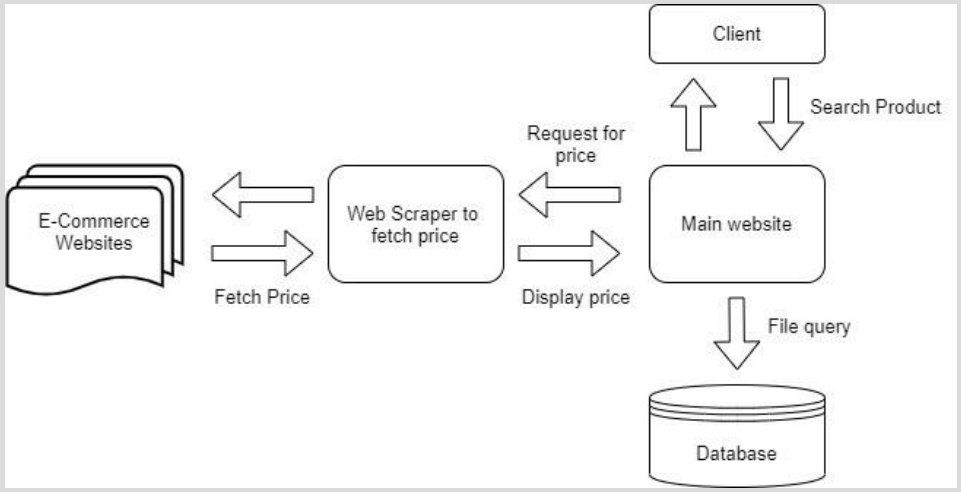

FIGURE 4.1 . SYSTEM ARCHITECTURE

V.METHODOLOGY

WORK FLOW OF WORK PROCESS

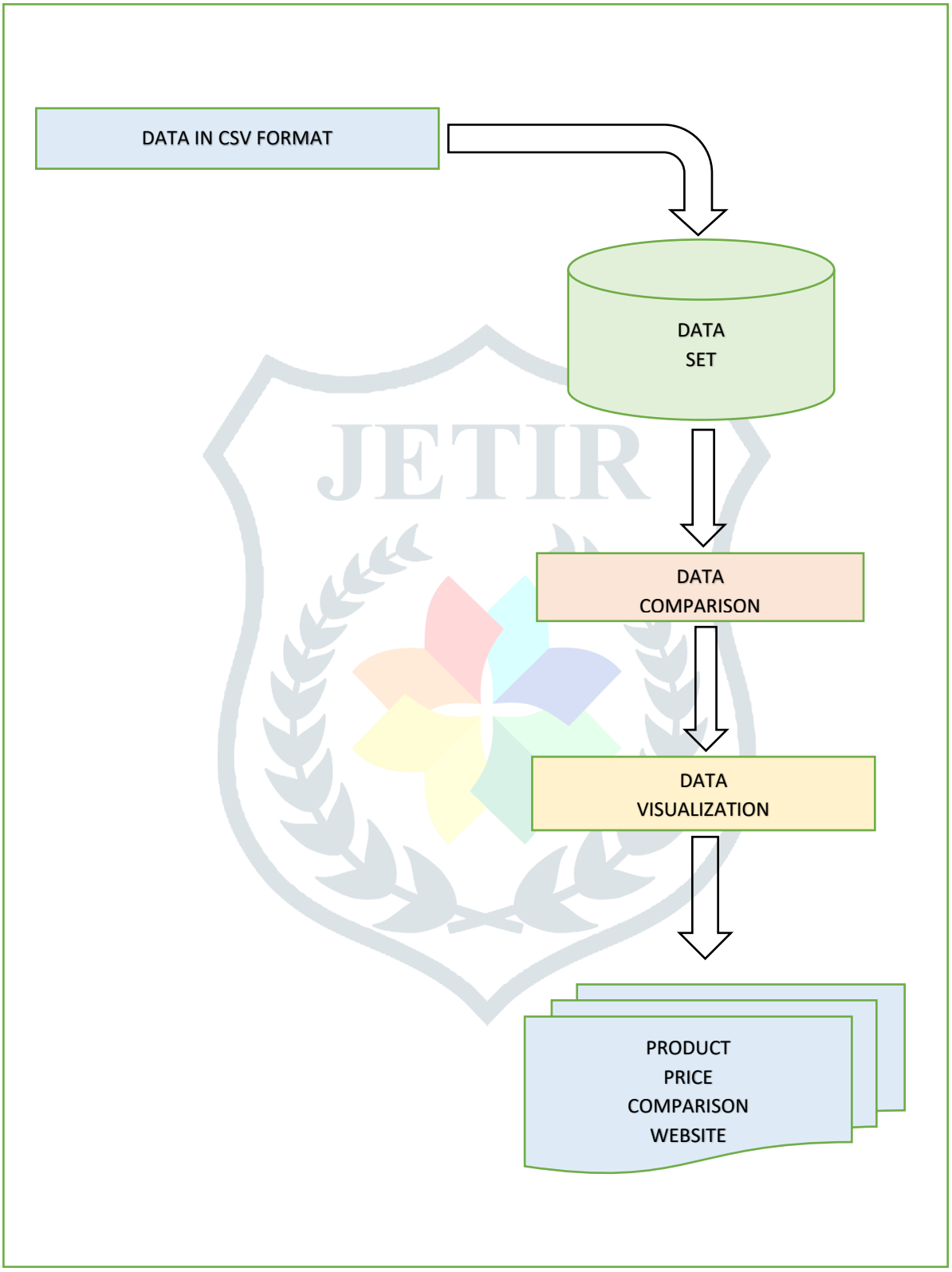

Fig 5.1

V.A.COMPARISON SHOPPING ENGINES:

This study has used python **an open source programming language**. It was made to be easy-to- read and powerful.The web scraping tool retrieved the data in a CSV format which needs to be imported to a python.In any e-commerce site data changes continuously take place i.e., prices of products may vary at any moment or some products may be out of stock too. This frequent data changes should also be considered dynamically in the python code..Furthermore, it can be integrated to any data visualization software such as visual Studio by Google as a data-source.

V.B.VISUALIZATION:

Large data is extracted dynamically and stored in CSV. The data stored in CSV format is then plotted by using the matplotlib library in python for visualization of the extracted data. In this implementation, only a sample of data is taken and considered for plotting the graph. Hence, a comparison bar plot is made from these two e-commerce sites by taking prices on electrical gadgets. The data can be visualized through various ways like bar graphs, scatter plots, line plots, pie charts, etc. In this current study, bar graph based price comparison is made.The optimum results are of the website1 and website2 are tabulated.

V.C.PRODUCT PRICE COMPARISON WEBSITE:

The compared data and the visualized graph is viewed in the product price comparison website.

VI.EVALUATION

Comparison Table

Category	Flipkart	Amazon
Prodimage		
Product	SAMSUNG Galaxy Watch4 LTE (4.4cm) Smartwatch	Samsung Electronics Galaxy Watch 4 Classic 42mm Smartwatch with ECG Monitor Tracker for Health Fitness Running Sleep Cycles GPS Fall Detection Bluetooth US Version, Black
Rating	4.2	4.6
Rating Count	346	3,638
Price	31999	25499.15
Product URL	Flipkart	Amazon

Fig 6.1

In this Fig 6.1, The data collected from the csv files of the Flipkart and Amazon websites are taken as the two different e-commerce websites for price comparison. The result of price comparison is compared detailed of electrical gadgets. The product is compared with product description,rating.rating count and price.The product URL that directs customers to the website page.

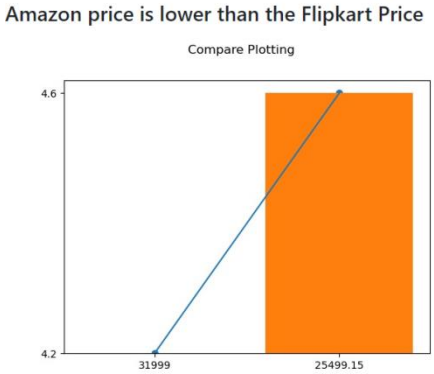

Fig 6.2

In Fig 6.2, Comparing the data in Fig 6.1, the visualization is done and the statement executed above the visualization is whether the amazon price is lower than the flipkart price or flipkart price is lower than the amazon price are shown in product price comparison website.

VII.CONCLUSION

The website provides users with useful information that will help them making informed decision. With this price comparison website, it solves the problems of the working people to check on the price before buying products. This websites will facilitate users to analyze prices that are present on different e-commerce shopping websites so that they get to know the cheapest price of products with best deal. This will surely save buyers effort and valuable time. Ultimately, this will bring together strategies, best offer and deal from all leading online stores and will help buyers to shop online.

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