

Development of a Comparison Based Medicine Purchasing System

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Abstract—

A considerable portion of India's population relies on the government-run healthcare delivery system, which is either free, contributory, or heavily subsidized, to meet their healthcare needs. In the world of online and offline markets the prices of medicines vary from city to city and different e-commerce site to site. Hence to overcome this the proposed system compares prices of medicines from different websites and provides users the cheapest ones.

Keywords—Healthcare, Comparison, Prices, Indian medicines, Pharmacy, General medicine, Wholesale, Ecommerce, Dawai.

1. INTRODUCTION

Since Past decade we can see a rapid growth in Medical sector. Dependency of the world on Information and online shopping has increased. A huge number of medicine retailers and wholesalers have started moving their business to online mode. The rise of chain pharmacies in India and other low- and middle-income countries (LMICs) is posing a threat to the status quo in pharmacy retail sectors that have traditionally been controlled by independent pharmacies. This begs the question of whether such organizations will have a good impact on drug affordability and availability. Due the no fixed pricing and other factors such as cost of logistics, region, mode (online, offline), dealer margin affect the cost of medicines to vary in different places. A person purchasing medicines does not go and check prices of medicines on each site individually and the time of emergency but rather order it from the first site that strikes his/her search page whereas there are other websites providing the same medicine at a different price point. To overcome this situation the proposed system fetches the prices of the medicine searched by the consumer from different websites compares them and suggests the consumer the site giving the cheapest one.

The supply chain of pharmaceutical companies has a significant impact on medicine prices. Higher out-of-pocket costs are incurred by consumers, and health insurers must deal with rising prescription costs.

According to a research by the Pharmaceutical Research and Manufacturers of America (PhRMA)[21], one of the primary reasons prescription medicine costs are in the news may be due to the complexity and large number of actors in the drug supply chain.

According to the research, the price of prescription pharmaceuticals is heavily influenced by discussions among wholesalers, pharmacies, pharmacy benefit managers, and insurers. The authors highlighted that while discounts on medicines have risen in recent years, out-of-pocket expenses have not.

The proposed systems work consists of two major pillars:

1. Information fetching
2. Sorting

The first phase takes input from the user and fetches the related medicine from at least five different websites and processes it for the end user. Where as in the other hand once the relative information is fetched from different websites the backend sorts the data into ascending order on the basis of different factors such as price, availability, etc. Pricing is given the most importance as this is the main agenda the proposed system is built for.

To further gather insight and knowledge on other solutions that include price comparison and data extraction we analyzed data from other research papers.

Literature Survey				
SR no	Name	Abstract	Author	Year
1	A comparative evaluation of price and quality of some branded versus branded-generic medicines of	To compare and evaluate the price and quality of "branded" and branded-generic equivalents of some commonly used medicines manufactured by	G.L. Singal, Arun Nanda, and Anita Kotwani	2011

	the same manufacturer in India	the same pharmaceutical company in India		
2	Medicine prices, availability, and affordability in 36 developing and middle-income countries: a secondary analysis	A secondary analysis of medicine availability in 45 national and subnational surveys done using the WHO/HAI methodology.	A Cameron Ewen Dip D Ross-Degna n	2008
3	New technologies for web development	The new CSS version, i.e. CSS3, has a modular structure, in which different modules define different styling features. The development cycles of the individual modules are independent as well as their support and implementation in various browsers.	Grega Jakus Matija Jekovec Sašo Tomažič Jaka Sodnik	2022
4	Improving medical stores management through automation and effective communication	Medical stores management in hospitals is a tedious and time consuming chore with limited resources tasked for the purpose and poor penetration of Information Technology. The process of automation is slow paced due	Lt ColAshokKumarCol.M.P. Cariappa	2016

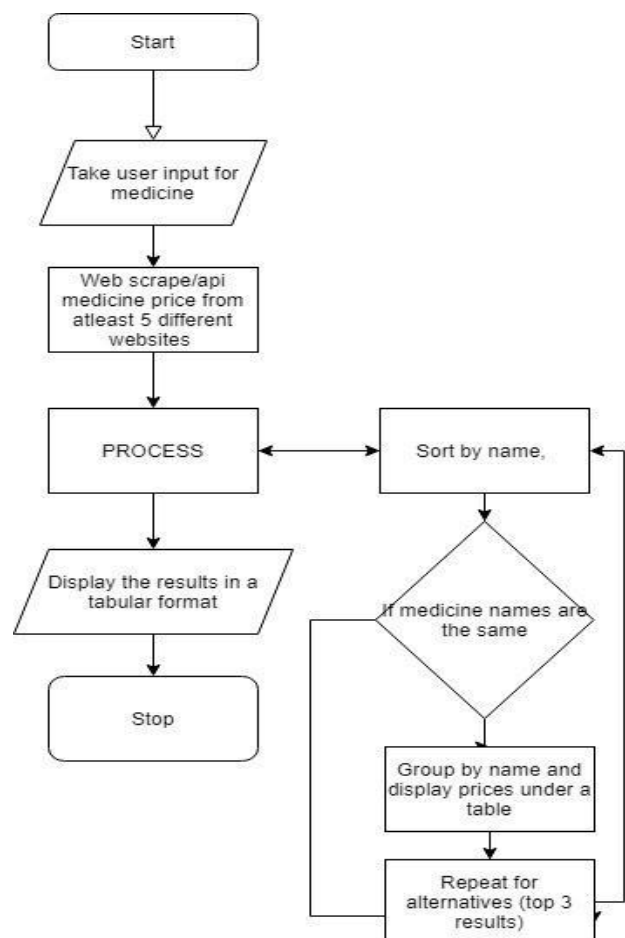
		to various inherent factors and is being challenged by the increasing inventory loads and escalating budgets for procurement of drugs.		
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2. SYSTEM'S DESIGN

The proposed system consists of two phases:

1. Web Scraping.
2. Sorting.

Web Scraping: In this phase we have used a python library called beautiful soup to request and gather information from different pharma websites.



The site scrapes information such as name of the medicine, price of the medicine and the website name from at least five websites and is stored in the MongoDB storage.

2.Sorting : One the data is scrapped from different websites, the proposed system sorts it in an ascending order and shows the results to the user.

The cards display different prices the same medicine has on different websites and the user can click the card to go to the website to buy directly. If a user inputs a general term rather than specific ie: CROCIN instead of CROCIN 650mg 15 tablets then the system matches the most nearest results and returns them from respective websites. In most cases however, the results are identical and future work may include dropdown suggestions for users to autocomplete. This will help users to get more accurate results with marginal price differences.

3. OUTPUT

Following are the prototype use cases for medicines named: Crocin and Rantac.



Fig 1: User interface



Fig 2: Rantac price comparison

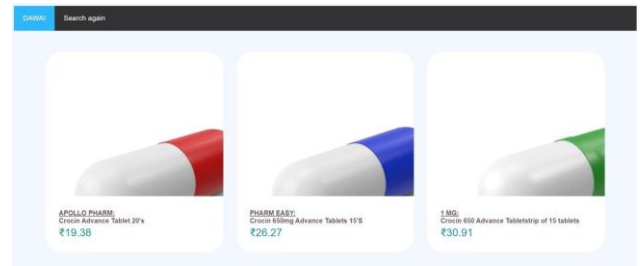


Fig 3 : Crocin price comparison

4. CONCLUSION

- We have also demonstrated the need for a medicine price comparison portal for medicines available in India.
- We can also notice that the prices for medicines differ significantly if the user orders wholesale or belongs to a lower income class bracket.

This project has been developed by our sincere efforts after a lot of research, exploration and testing. According to the specified functionality, it will work in a proper manner. We hope this project makes it easier to buy medicines at the right prices and at the right locations.

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