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**DEPARTMENT OF INFORMATION SCIENCE AND ENGINEERING**

**A MINI PROJECT REPORT ON**

**“Shopper’s Search”**

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**CERTIFICATE**

Certified that the project work entitled “Shopper’s Search” carried out by Mr. Nikhil, bearing USN 1NH20IS094 and Mr. Niranjan J Gowda, bearing USN 1NH20IS096, bonafide students of III semester in partial fulfilment for the award of Bachelor of Engineering in Information Science & Engineering of New Horizon College of Engineering, an autonomous institute affiliated to the Visvesvaraya Technological University, Belagavi during the year 2022-23. It is certified that all corrections / suggestions indicated for Internal Assessment have been incorporated. The project report has been approved as it satisfies the academic requirements in respect of Mini Project work prescribed for the said Degree.

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**Abstract**

# **INTRODUCTION**

## **Introduction**

## In today's fast-paced and competitive market, it is important for consumers to be well-informed and make smart decisions when shopping online. One way to do this is by comparing prices across different retailers and sources. In this mini-project, we will use web scraping to automate this process and find the best deals for a specific product.

## Scraping the best prices for a product from different websites can be a useful way to save money when shopping online. In this mini-project, we will explore how to use JavaScript and the Puppeteer library to automate the process of visiting multiple websites and extracting the relevant information.

## To do this, we will first identify the websites that we want to scrape and the elements on the page that contain the product price and name. We will then use Puppeteer to visit each website and extract the information we need. Finally, we will compare the prices across websites and choose the best deal based on a specific criterion (e.g., lowest price).

## Web scraping is a technique that involves using a computer program to extract data from websites. It can be a useful tool for collecting large amounts of data in a short amount of time, and it has many applications in the field of economics, such as price comparison, market research, and demand forecasting.

## Through this project, we will learn how to use JavaScript and the Puppeteer library to scrape prices from different websites and compare them to find the best deal. We will also explore the economic implications of web scraping and discuss how it can be used to benefit consumers and businesses.

## **Motivation of the project**

## While scrolling through an E-commerce website we noticed abnormal pricing of products. When we studied prices in ecommerce websites, we were sure of the manipulation of prices and inflation of markup price. While some offer heavy discounts in a few ranges of products at the same time they set high pricing on some very specific products.

## Lowing pricing goods attracts the consumers towards their platform and high marked up goods make sure e-commerce giants remained profitable. Manipulation of prices, assortment of products and marking discounts specific to every user to maximize profitability. To avoid these issue’s for consumers and to make sure they always get their desired product at best possible price we are building “Shopper’s Search”.

## **Problem Definition**

## The problem that we are trying to solve with this mini-project is to find the best deal on a particular product by comparing prices across different retailers and sources. We want to automate this process using web scraping and use data analysis techniques to identify the best price based on a specific criterion (e.g., lowest price, highest discount).

## To solve this problem, we will need to:

## Identify the websites that we want to scrape and the elements on the page that contain the product price and name.

## Use a web scraping library like Puppeteer to visit each website and extract the relevant information.

## Store the collected data in a structured format, such as a spreadsheet or a database.

## Analyse the data to identify the best deal based on the chosen criteria.

## Present the results in a clear and concise manner, such as in a table or a chart.

# **LITERATURE SURVEY**

### **2.1 Existing System**

# The existing system for a mini-project that scrapes the best prices for a product from different websites would typically involve manually visiting each website and comparing the prices manually. This can be a time-consuming and tedious process, especially if there are many websites to visit or if the prices are constantly changing.

# The existing system would typically involve manually visiting each website and navigating to the relevant product page. This could involve searching for the product on the website, or manually entering the URL of the product page.

# Once on the product page, the user would need to locate the price of the product and manually compare it to the prices on other websites. This could involve using a calculator or spreadsheet to perform the comparison, or simply remembering the prices and comparing them in their head.

# Depending on the number of websites and products being compared, the existing system could be quite time-consuming and error-prone. It may also be difficult to accurately track and compare prices over time, or to analyse the data in more depth.

# In contrast, the proposed system for the mini-project would use web scraping to automate the process of visiting multiple websites and extracting the relevant information. This would allow for more efficient price comparison and data analysis, as well as the possibility of automating the process to run on a regular basis.

**2.2 Proposed System**

The proposed system for a mini-project that scrapes the best prices for a product from different websites would typically involve using web scraping to automate the process of visiting multiple websites and extracting the relevant information. This would involve using a tool or library, such as Puppeteer, to visit the websites and extract the data using techniques such as HTML parsing or XPath expressions.

The proposed system would also likely include some form of data storage and analysis, such as a spreadsheet or a database, to organize and manipulate the collected data. This would allow for more detailed and flexible analysis of the data, as well as the ability to visualize the results in a clear and concise manner.

**2.3 Objectives of the Proposed System**

The objectives of a web scraping system to find the best price for a product on e-commerce websites might include:

Gathering data: The primary objective of the system is to retrieve and collect data from multiple e-commerce websites in order to identify the best price for a specific product. This could involve scraping the HTML of product pages, extracting information like the product name, price, and seller, and storing it in a structured format for analysis.

Analysing data: Once the data has been collected, it needs to be analysed in order to identify the best price for the product. This could involve sorting the data by price, applying filters to eliminate irrelevant results, and calculating the total cost of a product based on factors like shipping costs and seller ratings.

Scalability: As the system is used by more users and gathers data from more websites, it will be important to ensure that it is scalable and can handle the increased workload without performance degradation.

Overall, the objectives of the web scraping system will depend on the specific goals and requirements of the project. By carefully considering the needs and expectations of users, you can design a system that meets these objectives effectively.

# **CHAPTER 3**

# **SYSTEM REQUIREMENTS SPECIFICATION**

### **3.1 Hardware Requirements**

The following are needed to efficiently use the application.

Processor - Intel Core i3 and above

Speed - 2.5 GHz

RAM - 8 GB (min)

Hard Disk - 50 GB

### **3.2 Software Requirements**

Software requirements define software resource fundamentals that need to be installed on a workstation to provide optimum working of a software. The following are required for optimal development and usage of the application.

Operating System - Windows 7 and above

Programming Language - Python 3.7 or above version

Compiler - IDLE

Libraries - Socket, Threading, OS

# CHAPTER 4

# **SYSTEM DESIGN**

## **4.1 System Architecture**

A system architecture for a web scraping project to find the best price for a product on e-commerce websites, implemented using JavaScript, might include the following components:

Web scraping script: This is the core component of the system, responsible for retrieving and parsing the HTML from the target websites, extracting the relevant information, and storing it in a structured format. This could be implemented using a JavaScript library like cheerio or axios.

Data analysis: Once the data has been collected and stored, it needs to be analyzed in order to identify the best price for the product. This could involve sorting the data by price, applying filters to eliminate irrelevant results, and calculating the total cost of a product based on factors like shipping costs and seller ratings.

User interface: Depending on the goals of the project, you may want to provide a user interface or web application that allows users to search for and compare prices for different products. This could be implemented using a JavaScript framework like React or Angular.

Server infrastructure: If you plan to make your web scraping project available to a wider audience, you will need to set up a server infrastructure to host the web application and handle requests from users. This could involve setting up a web server like Node.js or Express and deploying the web application to a cloud platform like AWS or Azure.

Overall, the architecture of a web scraping project will depend on the specific goals and requirements of the project. By choosing the appropriate tools and technologies, you can design an effective and scalable system for finding the best prices on e-commerce websites using JavaScript.

## **4.2 Flowchart of Proposed System**

# **CHAPTER 5**

# **IMPLEMENTATION**

## **5.1 Code Implementation**

## **CHAPTER 6**

# **RESULTS**

## **6.1Outcome of Proposed System**

# CHAPTER 7

# **CONCLUSION AND FUTURE ENHANCEMENT**

## 7.1 Conclusion

Implementing the mini project to scrape e-commerce websites in order to find the best price for a specific product was a successful and informative endeavour. By analysing the data collected from multiple websites and sellers, it was possible to identify the best deal available and make an informed decision about where to purchase the product. This project highlighted the value of shopping around and considering multiple factors, such as shipping costs and seller ratings, when determining the overall cost of a product. It also demonstrated the usefulness of web scraping as a tool for gathering and analysing data from online sources. Overall, the project was a valuable exercise in gathering, processing, and analysing data to make informed decisions.

## 7.2 Future Enhancements

There are many potential enhancements that could be made to a mini project to scrape e-commerce websites in order to find the best price for a product. Some ideas might include:

* Expanding the scope of the project to cover a wider range of products or websites. This could provide a more comprehensive view of price trends and help identify the best deals for a wider range of products.
* Incorporating additional data sources, such as reviews or ratings, to get a more complete picture of the quality and reliability of different products and sellers.
* Implementing features to track price changes over time, such as alerts when prices reach certain thresholds or graphs showing price trends. This could help identify the best time to purchase a product.
* Adding functionality to compare prices across different countries or regions, in order to find the best global deals.
* Developing a user interface or web application to make it easier for users to search for and compare prices for different products.
* Integrating the project with other tools or services, such as a shopping list or a budget tracker, to make it more useful and convenient for users.

Overall, there are many ways that this mini project could be enhanced and expanded in order to provide more value and functionality for users.

# **REFERENCES**