One Click

Project Report

ABSTRACT

As we all know, this is the era of technology where all people are concerned about how to keep pace with today's fast and changing era. Now online shopping is the common and most convenient trend in our day-to-day life. People have desire to be equipped with the best of technical gadgets like Smartphone, Laptops, iPad etc.

It becomes overhead sometimes for user when he/she must find the best and lowest price for the same product on different websites. To go to each website and compare the product price each time can be frustrating.

So, as the project name suggests "OneClick" it will display the price of the same product on different websites. When user will search for the product on OneClick it will show the price of the product across all websites along with the ratings and reviews for that product hence eliminating the overhead to search for the product on all websites and compare the best and lowest price of the product.

INTRODUCTION

The main purpose of this project is to find the best price of the product that the user wants to buy along with the website reference where that item is available. OneClick not only gives the price information about the specific product, but it also gives the rating and reviews for the same product across various websites.

1.1 SCOPE

1.1.1 Current Scope

In the current scenario, we have implemented all the procedures which are required to run the website including frontend website development along with the backend programming part.

1.1.2 Future Scope

In future, we will add multiple website references and more information about the product.

1.2 PROJECT SUMMARY AND PURPOSE

1.2.1 Project Summary

“OneClick” project is based on JavaScript and puppeteer programming concept which overcomes the problem of the user to surf different websites to find the best price of the same product.

1.2.2 Purpose

The main purpose of this project is to find the best price of the same product that he/she wants to buy along with the website reference where that item is available. This will also reduce the time of the individual and make it easy to surf.

1.2.3 Alternative Approach

The alternative approach of this project could be to capture the data from the server and save it in the database and fetch the data from database to show it to the user. We didn’t select this approach as we need memory to create and maintain a database. Also, we researched and found out about puppeteer which does not require anything to store and can scrape data directly from the websites. We liked the idea of fetching data directly so; we selected our current approach.

1.3 OVERVIEW OF PROJECT

Nowadays it has become overhead to compare the price of the same product on different websites to get the best and lowest price. OneClick will compare the price of the same product on the different websites and give the results back on a single page. It will not only reduce the overhead of the user but also save the time of the user. Frontend development of the website is done through Angular JavaScript and Backend development is done through Node JavaScript along with puppeteer.

TECHNOLOGIES USED

2.1 Tools

As this project is website development with frontend and backend, no specific hardware tool except smartphone or laptop on which user will surf the website is required.

2.2 Technology

Here is the list of technology which is used for the development of this project.

- Angular JavaScript for Website frontend development
- Node JavaScript for Website backend development
- Puppeteer for extracting data from websites.

HARDWARE AND SOFTWARE REQUIREMENTS

3.1 Hardware

- **User**

1. Smart phone or other smart devices like laptop.
2. Working Wi-Fi connection and cellular data.

- **System**

1. Internet Connection

3.2 Software

- **User**

1. OS: Android or Windows OS

- **System**

1. Operating System: Android or Windows
2. Node JavaScript v14.x
3. NPM

CONTRIBUTIONS

CONTRIBUTIONS

This section describes the contributions of everyone in the project. As the project is a teamwork project it is difficult to understand the individual contributions to the project. This section gives an overview about who worked on which part of the project specifically.

4.1 Supriya

The Frontend part of the project is mainly developed by Supriya Mishra. The details of the specific codes developed are:

4.1.1 Frontend

app.component.html
app.component.css
main-component.component.html
main-component.component.css
retail-component.component.html
retail-component.component.css
amazon.component.html
amazon.component.css
index.html
style.css

4.1.2 Backend

sort.js

4.2 Tirth

The Backend part of the project is mainly developed by Tirth Kothari. The details of the specific codes developed are:

4.2.1 Frontend

merged-component.component.html
merged-component.component.css
online-component. component.html
online-component. component.css

4.2.2 Backend

app.js
filter.js
main.js
scrapers_amazon.js

4.3 Common Code

package.json
angular.json
tsconfig.json
tslint.json
tsconfig.spec.json

PROJECT IMPLEMENTATION

IMPLEMENTATION

The main idea of the project is to capture product specific data from different websites and show them together on a single page. The project is implemented in two modules frontend and backend.

5.1 Frontend

The Frontend part of the project is developed using Angular JavaScript. The main purpose of the front end is to show the data captured. It sets up all the environment and views for the user to see in OneClick. Front end displays all the information for the user to see and use.

The Technology used in Front end are:

1. Angular JavaScript
2. HTML
3. CSS
4. JSON

5.2 Backend

The Backend is used to capture data from different websites using puppeteer. Backend captures the data and processes it after which it sends the product specific data to the front end for the display. The backend of the project is developed using Node JavaScript.

The Technology used in Back end are:

1. Node JavaScript
2. Puppeteer
3. Web Scrapping

5.3 Functionalities

In addition to the displaying data of a specific product we have developed additional functionalities to our project which are:

5.3.1 Retail Stores Merge

If the user wants to see product information from any specific retail or local store, then he/she can use the option to merge the results between online stores and retail stores to see the detailed results. Also, the retail store option can only be used to view data from the specific retail store and the online option to view data from different online stores.

5.3.2 Filter Option

With this filter functionality the user has the option to select and filter the data. This can be done in two ways

1. By price

   Through the price functionality the user has the option to select the price range for the specific product and filter the price for the product.

2. By Rating

   Through the Rating functionality the user has the option to select the product based on the rating and reviews of the product.

5.3.2 View Option

The user has the option to select from two views available in our website

1. List View
   Here the user has the option to see all the details of the products in a list format.

2. Grid View
   Grid View can also be used by the user to see the product specific information.

ANALYSIS AND EVALUATION

6.1 CURRENT SYSTEM

It is quite difficult to compare the price of the same product on different websites. It is not always possible to locate a website with the lowest price of the product.

6.2 PROBLEMS AND WEAKNESSES

Problems and weaknesses of this project are as described below:

- If there is low internet connection, then it might be possible that the website will not work properly.
- This project may not work properly if there is an unrecognized user search entered by the user.

6.3 REQUIREMENTS

User requirements and System requirements of the new system is as described below:

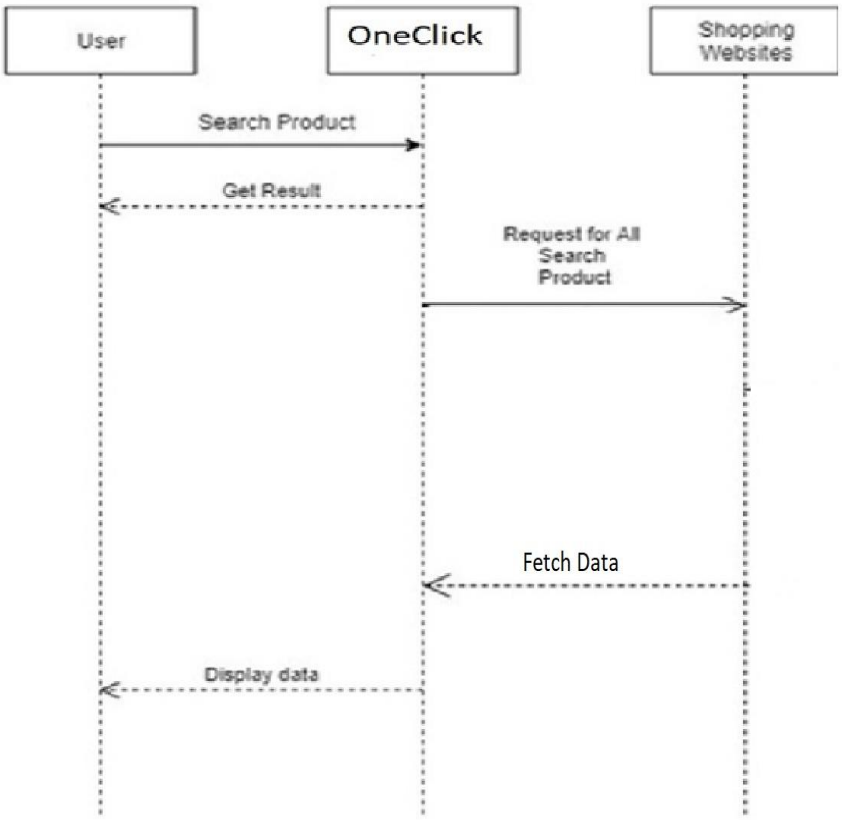
6.3.1 User Requirements

1. Users should have an active internet connection or Wi-Fi.
2. Users should have smartphone or laptop so that he/she can access the features of website.

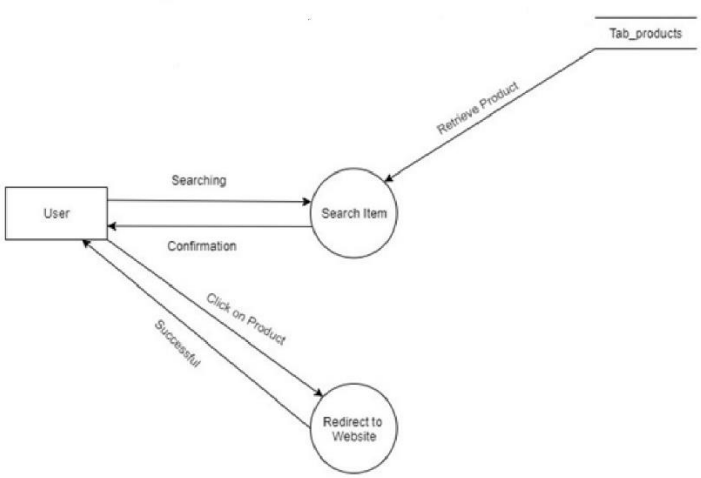
6.3.2 System Requirements

1. System must require the proper knowledge of website and active internet connection.

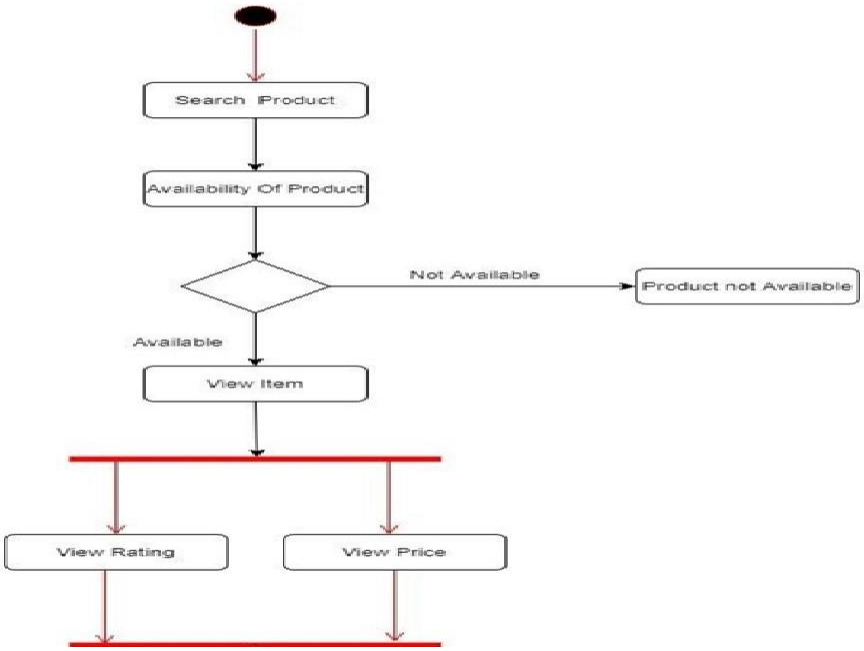
6.5 SEQUENCE FLOW DAIGRAM



6.6 DATA FLOW DAIGRAM



6.6 ACTIVITY DAIGRAM



6.7 PROJECT EVALUATION THROUGH SCREENSHOTS

IMAGE 1: IPHONE 13

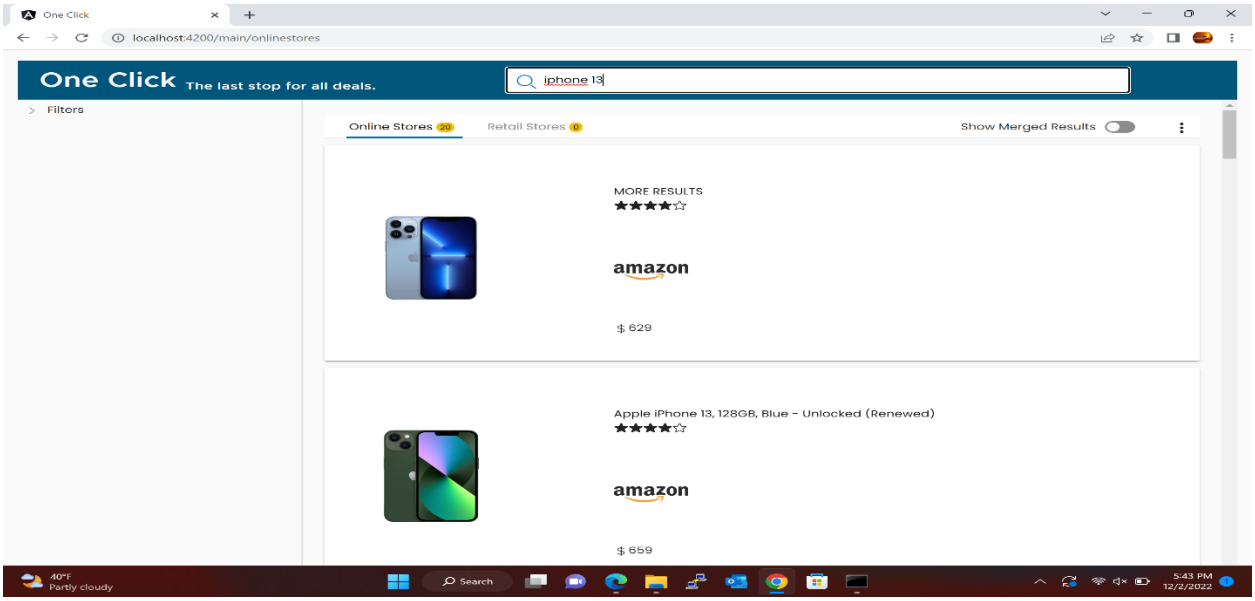


IMAGE 2: SAMSUNG TV

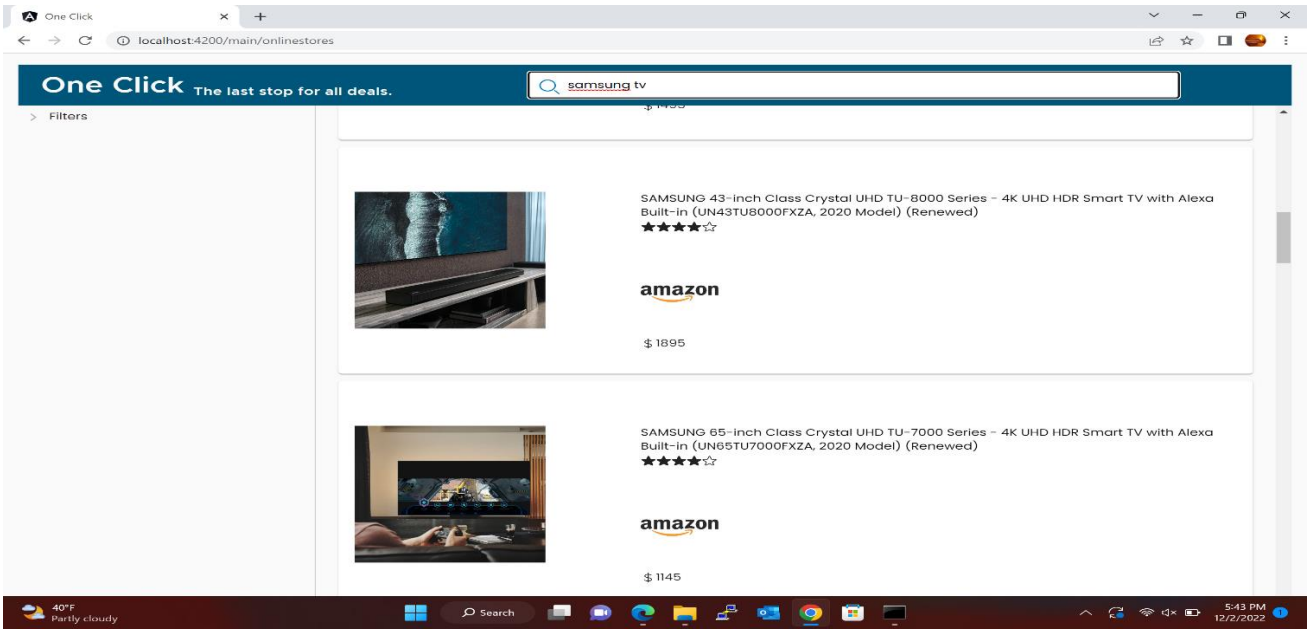


IMAGE 3: THE ALCHEMIST

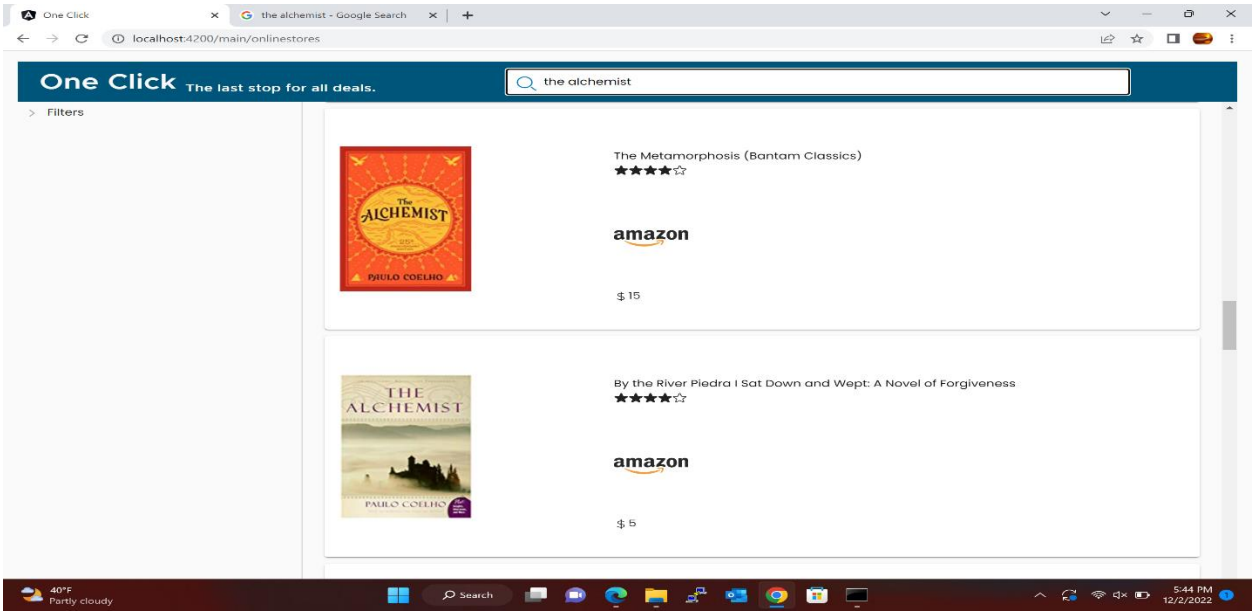
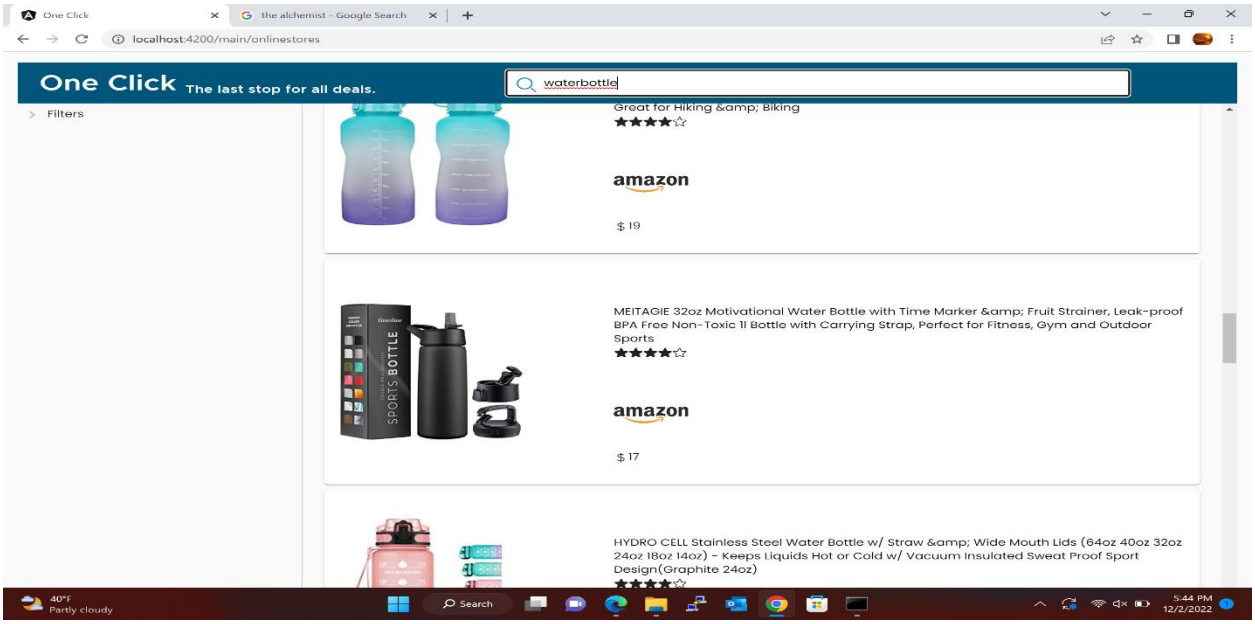


IMAGE 3: WATER BOTTLE



STRENGTH AND WEAKNESS

8.1 STRENGTH

The main strength or benefit of the project is to save time while surfing for the same product online. OneClick is designed to overcome the overhead of user. This project is developed in a modular fashion where in future if we want to add different websites then it can be easily done.

If we want to add websites in future, then the scrappers file is going to be placed in backend and then we must add the website to frontend, and it will start displaying the results.

There is also a dedicated module for Retail Stores**.** Hence, in future if user wants to see product information from any specific retail or local store, then he/she can use the option to merge the results between online stores and retail stores to see the detailed results. Also, the retail store option can only be used to view data from the specific retail store and the online option to view data from different online stores.

With this filter functionality the user has the option to select and filter the data. This can be done in two ways by price and by ratings. For price option the user has the option to select the price range for the specific product and filter the price for the product. Through the rating functionality the user has the option to select the product based on the rating and reviews of the product.

Also, the user has the option to select from two views available on our website which are list view and grid view. In list view the user has the option to see all the details of the products in a list format. Grid View can also be used by the user to see the product specific information.

8.2 WEAKNESS

The weakness of the project is we were planning to implement more than one website for the user to compare but, only online website amazon is running in OneClick, and other websites are not running now. This can be due to many reasons like some websites detect web scrapping and block access. In this case we need to set up a proxy to be able to gain access. We were able to research a few options and are still working on it to get it done.

CONCLUSION

OneClick project is a website which gives the list of the same product with different prices with their respective website on which that product is available. It is an overhead to compare the price of the same product on different websites. In OneClick users have to enter the name of the product on the website and it will show a list of the product details with different prices along with rating and reviews for that particular website.

FUTURE WORK

In future we are planning to add more websites to OneClick so that the user has more options to view the product on other websites and get more information about the specific product.

We are also planning to host our website so that users would be able to access the website easily.

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[17] puppeteer/puppeteer#1944