



Price Comparision

Student Name:- Manjot Kaur

Student Number:- M00735429

CST3130

Advanced Web Development and Applications

Price Comparison

Overview-

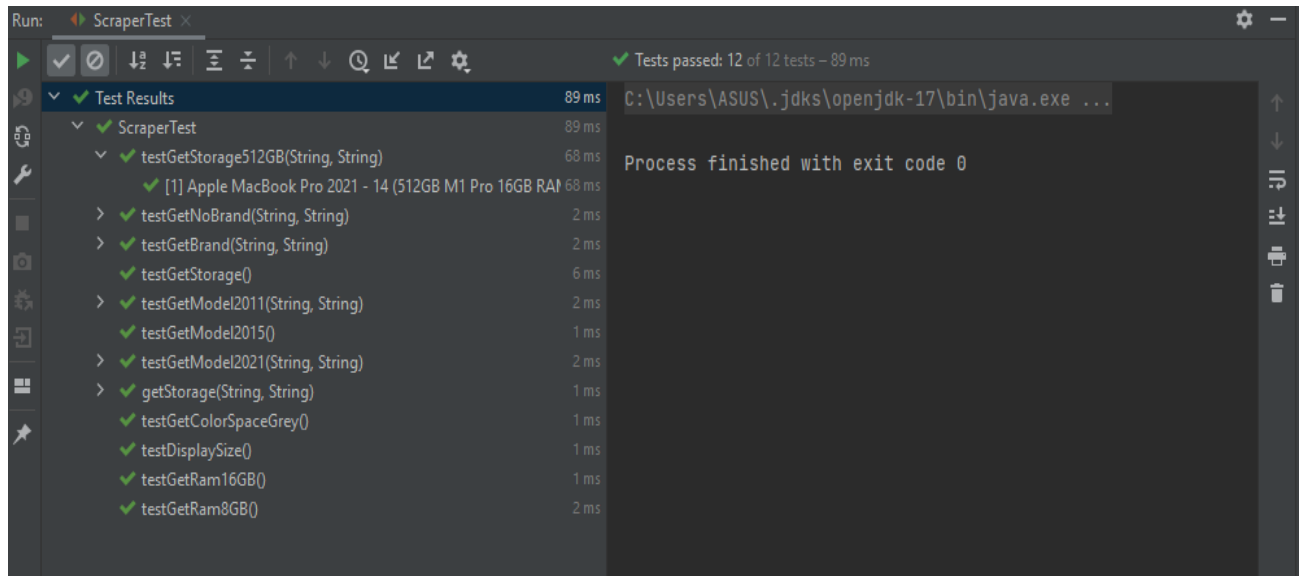
Price comparison website for laptops that displays prices and products from various online retailers. By searching for the name of the products, the user can compare the prices of the products. In addition, the user can check the pricing of the products on the original website. In order to implement the price comparison website, scraped data from five websites using Selenium and used MySQL to send the data to the database. Pages on the website are divided into multiple portions, and pagination is available for going to subsequent pages and previous pages. A sorting function is available on the website for sorting prices and sorting laptops by name.

Web Scraping-

Web scraping which uses Selenium is carried out to scrape data from different websites. In Java, different threads are used to scrape data. Additionally, Spring, Maven, and Hibernate are used in order to implement the website's back end. Over 450 rows of information were scraped from Ebay, TechInTheBasket, Currys, Ebuyer, and JDWilliams. Furthermore, implementation of some unit tests in order to verify the method's functionality.

Results of Unit Tests with JUnit-

Tests are written to validate the functionality of Java classes containing scraping methods and methods to extract specific information from websites.



Restful Web Services and Displaying Products with JavaScript-

In order to implement REST APIs, Node.js is used. Data is pulled from the database using a get request, which processes path and query string and calls functions to return the data. To get general information about a product, as well as specific information about a particular product, SQL queries are used. By retrieving requests from the server, vue displays products from mysql.

Results of JavaScript Tests-

The following JavaScript tests check the number of products, names of products, number of products, and product ID, price, and total number of products.

```
> CST3130_Coursework1@1.0.0 test C:\Users\ASUS\Downloads\CST3130_Coursework1\src\node
> node node_modules/mocha/bin/mocha
```

Database

```
#getTotalProductsCount
  ✓ should return the count of products in the database
#getProductName
  ✓ should return the one product with specific name in the database
#getProductID
  ✓ should return the products with only ids in the database
#getProductPrice
  ✓ should return the all products with prices
#getAllProducts
  ✓ should return the all products
```

5 passing (61ms)

Functionality-

The website offers the following features:

1. Search Function: Search functionality is available on the website to allow users to search for products by name or by specifications, such as color, RAM, brand, storage, and display.



2. Sort: There is an option to sort products by name and price on the website. Clicking on the Sort by name or Sort by price button allows the user to sort products. By choosing the sort by price option, the prices

will be sorted ascending or descending, as well as by selecting the sort by name option. Sorting is accomplished by using vue.

Sort By Price

256GB SSD 13.3" Laptop - Space Grey

£ 954.99 inc. vat

Low

12GB SSD 13.3 Inch MacOS Laptop - Silver

£1,004.96

12GB SSD 13.3 Inch MacOS Laptop - Silver

£1,004.96

intel Core i5 8GB RAM 256GB SSD Laptop - Gold £1,012.00

High

3. Pagination: Additionally, the site has a pagination feature to navigate between the next and previous page. It will count the number of pages as the user moves from one page to the next.




Page Number =1

4. Compare: By clicking on the compare button (shown below), the user can compare the prices of the products:

Products	
	
Price: £1,590.00 Compare	
	
Price: £1,950.00 Compare	

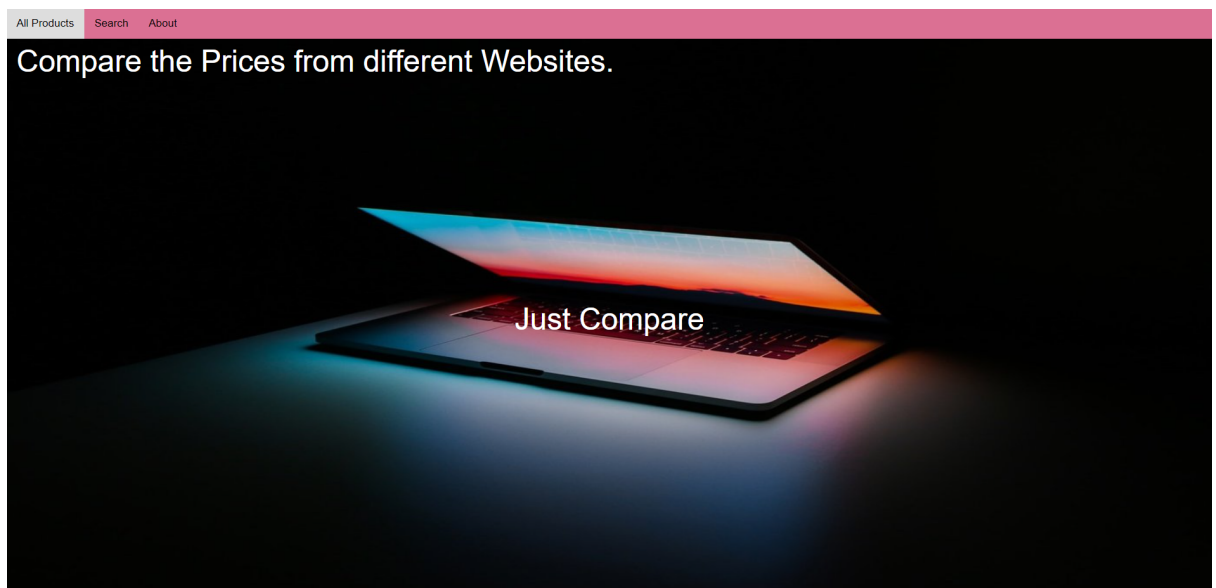
Which will open the following page with the price comparison between the products.

Compare	
	Specifications- Storage: 512 GB Ram: 16GB Display Size: 14 inch Color: Silver Model: 2021 Price: £1,590.00
Ebay Apple MacBook Pro 2021 - 14" (512GB, M1 Pro, 16GB RAM) - Silver - SEALED / NEW Price: £1,590.00	
Currys No Product found at currys.	
EBuyer Apple MacBook Pro 2021 M1 Chip 16GB 512GB SSD 13.3" Laptop - Silver Price: £1,352.99	
TechInTheBasket Apple 13.3" MacBook Pro 2021 10th, i5 16GB Ram 512GB SSD - Silver	




The products on this page are linked to the actual websites. These websites depict the original prices of the product listed here.

Screenshots-

1. **Home Page-** The home page of the website contains links to the search page and product page. In the about section, instructions are provided on how to navigate the website.

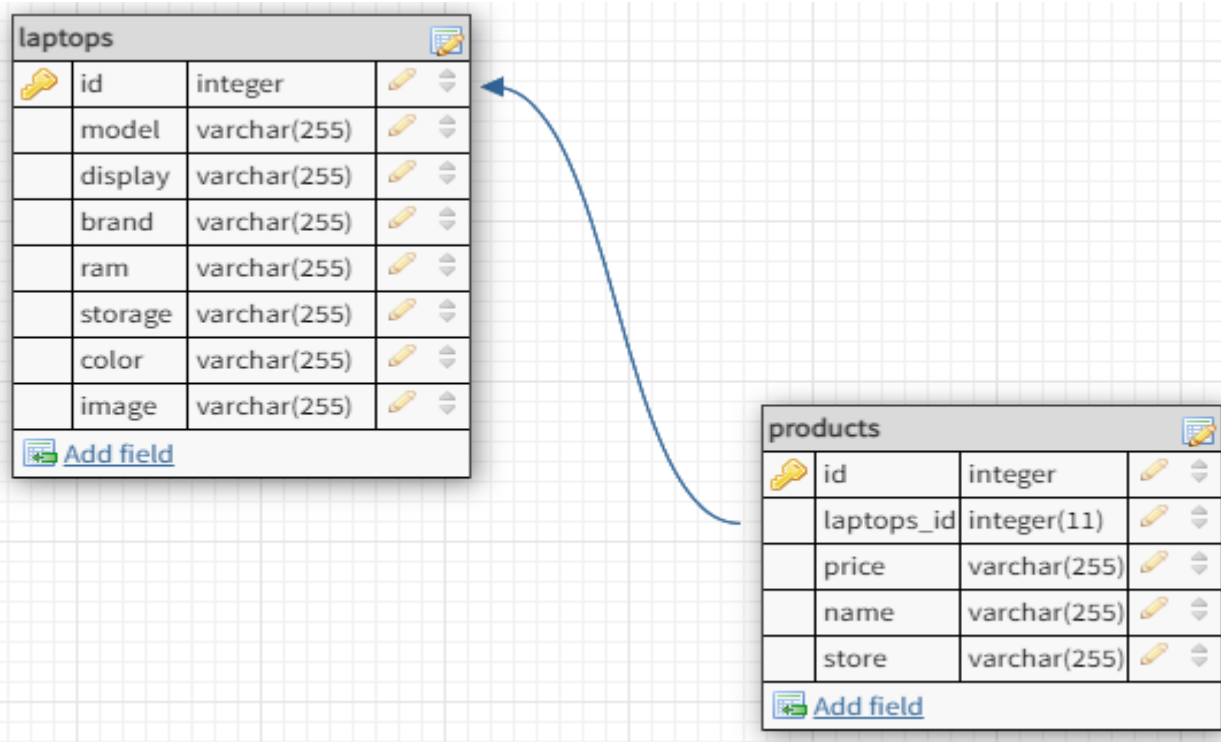


2. **Search Page-** On the search page the user can find a number of products, buttons for sorting products and pagination.

Macbooks		
<input type="text" value="search products"/>		
Page Number: 1		
<input type="button" value="Sort By Name"/> <input type="button" value="Sort By Price"/>		
	Apple MacBook Air M1 Chip 8GB 512GB SSD 13.3" Laptop - Gold	£ 1,150.04 inc. vat
	Apple MacBook Air M1 Chip 8GB 512GB SSD 13.3" Laptop - Silver	£ 1,159.95 inc. vat
	Apple MacBook Air M1 Chip 8GB 512GB SSD 13.3" Laptop - Space Grey	£ 1,180.64 inc. vat

A search will allow for flexibility in selecting the desired products.

Database Design-



Data:- The web scraping gathers 700 rows of information.

```
{ "totNumItems": 700, "products": [ { "name": "MacBook Pro (M1) 512GB", "url": "https://www.jdwilliams.co.uk/shop/macbook-p-512gb/ek416/product/details/show.action?"
```

Summary-

As a result, this website is equipped with all of the functionality and technology described in the coursework description. In addition to searching for products, the user can use other features of the website, such as sorting and comparing prices to compare products on different websites. Using this website, the user will be able to find the best deal tailored to your needs at the lowest cost. This will be beneficial to the clients in many ways, such as saving them money and time, as well as providing them with a variety of choices.