

ITS462 FINAL PROJECT

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INTRODUCTION

1.1 Foundation

The application for this project provides a tool for users to easily compare the prices of computer products from various websites. This is a valuable resource for consumers looking to make informed purchasing decisions and get the best deals on computer products. The application is designed as a client application that uses services hosted on a server to access data from a Database and provide it to the user in a user-friendly format. This allows users to compare prices and make informed decisions about which products to purchase quickly and easily. When this app comes out, it will be a great resource for people who want to buy computer products at the best prices.

1.2 Purpose

The purpose of this project is to create a client application that allows users to compare the prices of computer products quickly and easily from different websites. The application will use server-side services to access data from a database and present it to the user in a user-friendly format. This will enable consumers to make informed purchasing decisions and get the best deals on computer products. The project aims to provide a valuable tool for consumers looking to save time and money when buying computer products.

1.3 Scope

The scope of this project includes the development of a server-side application that scrapes and retrieves information from at least two websites that sell computer products, stores this information in a database, and implements ASMX services to provide this information to the client application. The scope also includes the development of a client application that allows users to query this data and view the results in a report format that can be printed.

1.4 Definitions, Acronyms, and Abbreviations

- ASMX: Active Server Method Extension, a technology used by the Microsoft .NET Framework to implement Web services
- DOM: Document Object Model, a platform- and language-neutral interface that allows programs and scripts to dynamically access and update the content, structure, and style of a document
- XPATH: XML Path Language, a query language used to select elements from an XML document
- XSLT: Extensible Stylesheet Language Transformations, a language used to transform XML documents into other formats, such as HTML
- NuGet: A package manager for the Microsoft development platform

1.5 References

- HTML Agility Pack website: <http://htmlagilitypack.codeplex.com/>
- Examples scraper test sites with product information:
<https://webscraper.io/test-sites>, <https://www.discount-computer.com/desktops/>

2. Describing

2.1 Product Perspective

The computer price comparison tool will be a standalone application that allows users to compare the prices of various computer products from multiple websites. The tool will consist of a server-side application that scrapes and retrieves information from websites, stores this information in a database, and implements services to provide this information to the client application. The client application will allow users to query this data and view the results in a report format that can be printed.

2.2 Product Functions

The main functions of the computer price comparison tool are:

- Scraping and retrieving information from websites: The server-side application will use a third-party tool to scrape the website HTML and extract information about computer products, including the site offering the products for sale, the product vendor name, product

model, product description, product price, and any available product specs.

- Storing scraped data in a database: The server-side application will store the scraped data in a database, which can be queried by the client application to retrieve specific data.
- Implementing services for accessing data: The server-side application will implement ASMX services that can be called by the client application to retrieve the specific scraped data from the database. The services must support querying the database based on the type of data selected by the user (e.g. computer type, vendor, model, price).
- Providing a user interface for querying data: The client application will provide a user interface that allows users to select the type of data on which they want to perform a price comparison, such as computer type, vendor, model, or price. The client application will display the results of the query in a list or table format, sorted by price in ascending order.
- Providing a feature for viewing and printing results: The client application will provide a feature for viewing the retrieved data in a report format that can be printed.

3. Specific Requirements

3.1 Server-Side Application Requirements

The server-side application will be responsible for scraping and retrieving information from websites, storing this information in a database, and implementing services for accessing this data. The specific requirements for the server-side application are:

- The server-side application must scrape and retrieve information from at least two websites that sell computer products. The information that must be scraped includes the site offering the products for sale, the product vendor name, product model, product description, product price, and any available product specs.
- The server-side application must use the HTML Agility Pack to scrape the website and extract the desired information.

- The server-side application must store the scraped data in a database. The database system used is at the discretion of the developer.
- The server-side application must implement ASMX services that can be called by the client application to retrieve the specific scraped data from the database. The services must support querying the database based on the type of data selected by the user (e.g. Laptop name, vendor, description, price).

3.2 Client-Side Application Requirements

The client application will provide a user interface for querying the scraped data and viewing the results in a report format that can be printed. The specific requirements for the client application are:

- The client application must be a Windows or Web form application.
- The client application must provide a list or drop-down control that allows the user to select the type of data on which they want to perform a price comparison (e.g. Laptop name, vendor, description, price).
- The client application must display the results of the query in a list or table format, sorted by price in ascending order.
- The client application must provide a feature for viewing the retrieved data in a report format that can be printed.
- User Documentation

4. Software Design

A software design document will be compiled for the computer price comparison tool. The design document will include the following information:

- Detailed design of the server-side application, including the scraping and data storage components, as well as the ASMX services
- Detailed design of the client application, including the user interface and report generation components
- Detailed design of the data flow between the server-side and client applications and the database