Objectives

1. To build an Inventory Management System with ASP.NET Core, Html, CSS, JavaScript and SQL.
2. To add database in this project and learn data manipulation for the project.
3. To learn how to integrate them together in a website.

Introduction

A **website** (also written as **web site**) is a collection of web pages and related content that is identified by a common domain name and published on at least one web server. Examples of notable websites are Google, Facebook, Amazon, and Wikipedia. Websites are typically dedicated to a particular topic or purpose, such as news, education, commerce, entertainment, or Social Networking. Hyperlinking between web pages guides the navigation of the site, which often starts with a home page. Users can access websites on a range of devices, including desktops, laptops, tablets, and smartphones. The app used on these devices is called a web browser.

The **HyperText Markup Language** or **HTML** is the standard markup language for documents designed to be displayed in a web browser. It can be assisted by technologies such as Cascading Style Sheets (CSS) and scripting such as JavaScript.

Web browsers receive HTML documents from a web server or from local storage and render the documents into multimedia web pages. HTML describes the structure of a web page semantically and originally included cues for the appearance of the document.

Cascading Style Sheets (**CSS**) is a style sheet language used for describing the presentation of a document written in a markup language such as HTML or XML (including XML dialects such as SVG, MathML or XHTML). CSS is a cornerstone technology of the World Wide Web, alongside HTML and JavaScript.

CSS is designed to enable the separation of presentation and content, including layout, colors, and fonts. This separation can improve content accessibility; provide more flexibility and control in the specification of presentation characteristics; enable multiple web pages to share formatting by specifying the relevant CSS in a separate .css file, which reduces complexity and repetition in the structural content; and enable the .css file to be cached to improve the page load speed between the pages that share the file and its formatting.

JavaScript often abbreviated **JS**, is a programming language that is one of the core technologies of the World Wide Web, alongside HTML and CSS. As of 2022, 98% of websites use JavaScript on the client side for web page behavior, often incorporating third-party libraries. All major web browsers have a dedicated JavaScript engine to execute the code on users' devices.

JavaScript is a high-level, often just-in-time compiled language that conforms to the ECMAScript standard. It has dynamic typing, prototype-based object-orientation, and first-class functions. It is multi-paradigm, supporting event-driven, functional, and imperative programming styles. It has application programming interfaces (APIs) for working with text, dates, regular expressions, standard data structures, and the Document Object Model (DOM).

ASP.NET Core is a free and open-source web framework and successor to ASP.NET, developed by Microsoft. It is a modular framework that runs on both the full .NET Framework, on Windows, and the cross-platform .NET. However ASP.NET Core version 3 works only on .NET Core dropping support of the .NET Framework.

The framework is a complete rewrite that unites the previously separate ASP.NET MVC and ASP.NET Web API into a single programming model.

Despite being a new framework, built on a new web stack, it does have a high degree of concept compatibility with ASP.NET. The ASP.NET Core framework supports side-by-side versioning so that different applications being developed on a single machine can target different versions of ASP.NET Core. This is not possible with previous versions of ASP.NET.

Blazor is a recent (optional) component to support WebAssembly and since version 5.0 it is dropping support for some old web browsers. While current Microsoft Edge works, the legacy version of it, i.e. "Microsoft Edge Legacy" and Internet Explorer 11 are dropped when you use Blazor.

SQL (**Structured Query Language**) is a domain-specific language used in programming and designed for managing data held in a relational database management system (RDBMS), or for stream processing in a relational data stream management system (RDSMS). It is particularly useful in handling structured data, i.e. data incorporating relations among entities and variables.

SQL offers two main advantages over older read–write APIs such as ISAM or VSAM. Firstly, it introduced the concept of accessing many records with one single command. Secondly, it eliminates the need to specify how to reach a record, e.g. with or without an index.

Features

1. Registration with email confirmation.
2. Login/ Logout with Remember me option.

3. Inventory list with add/edit inventory, purchase inventory.
4. Product list with add/edit/delete product, produce product, sell product.
5. Inventory Transaction Report from any date to any date.
6. Product Transaction Report from any date to any date.
7. The reports can be printed.

Project Description

The project is about the management of inventories. The users work as suppliers of some product for some companies or any industries. Now they can use their whole management system in this website. In this project, I use html as frontend and asp.net core as backend. I have made page for inventories and its functions.

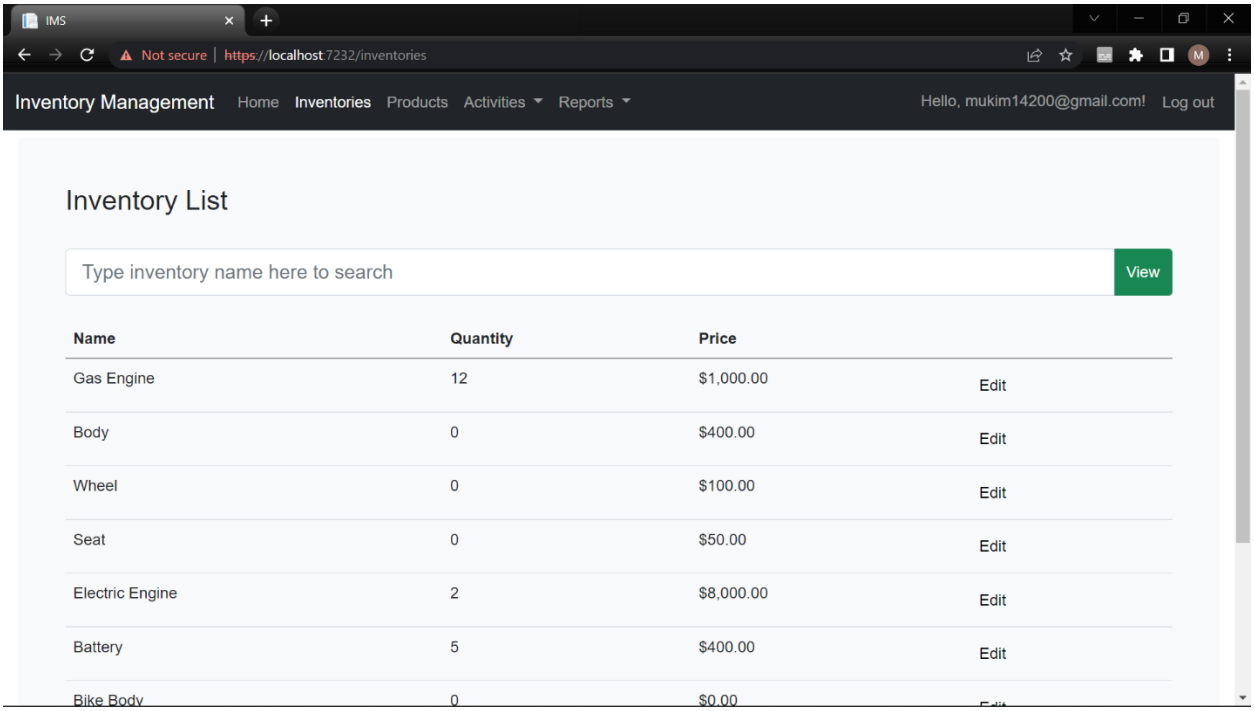

Figure: Inventory Page

Then I made page for Products and all its functionalities.

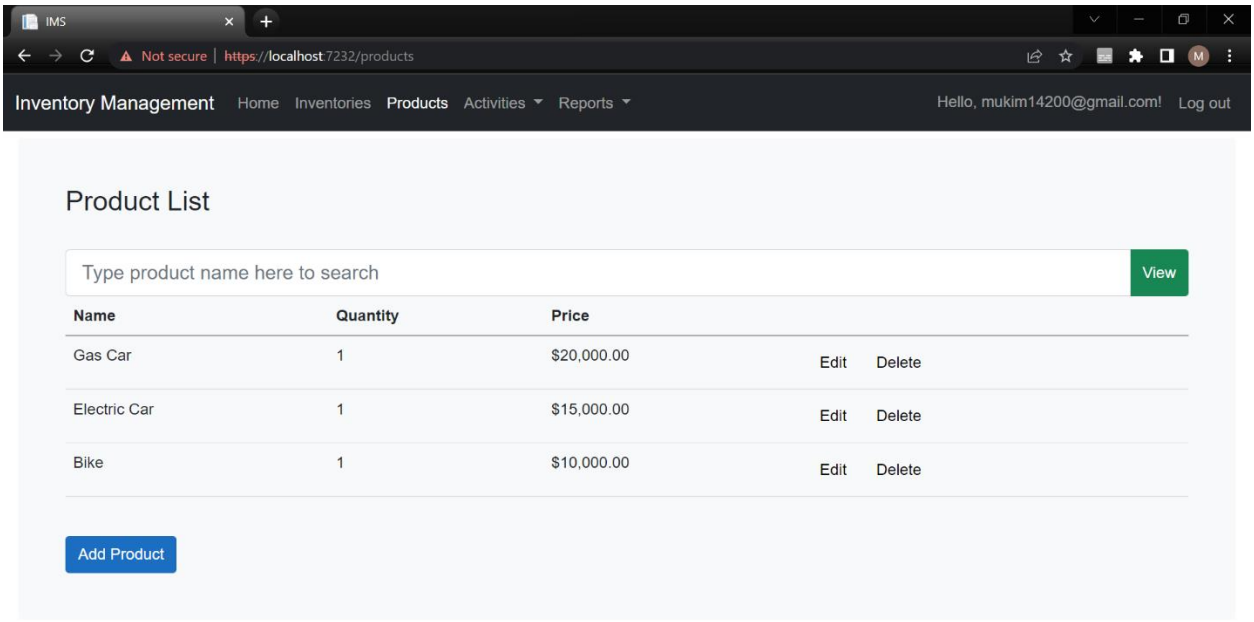

Figure: Product Page

After that, the activities like produce, purchase and sell are done.

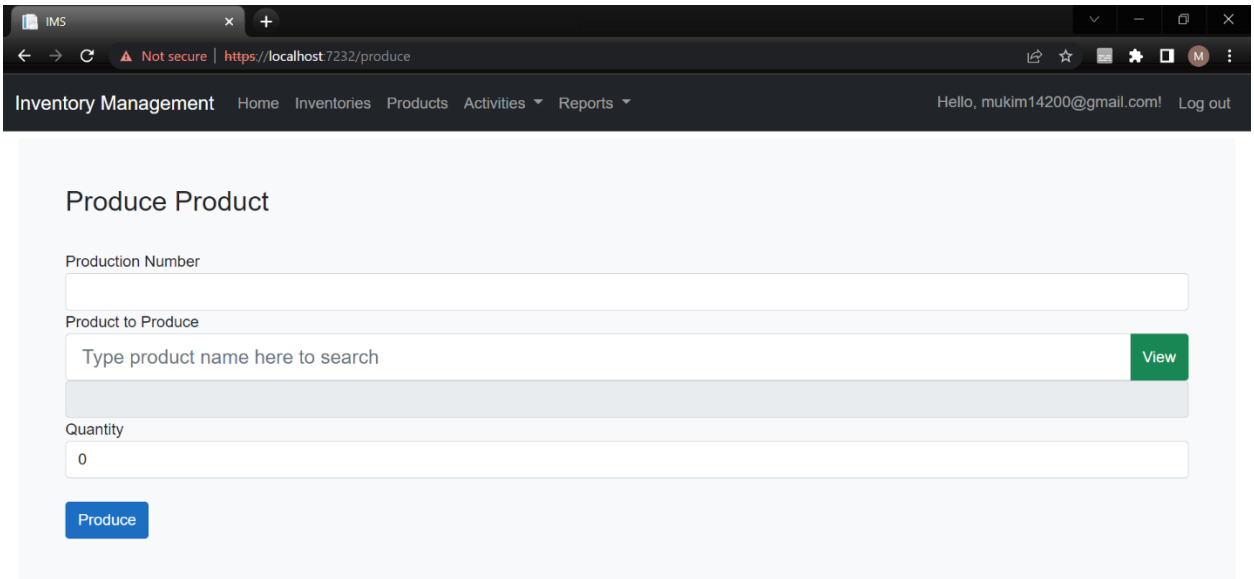

Figure: Produce Activity

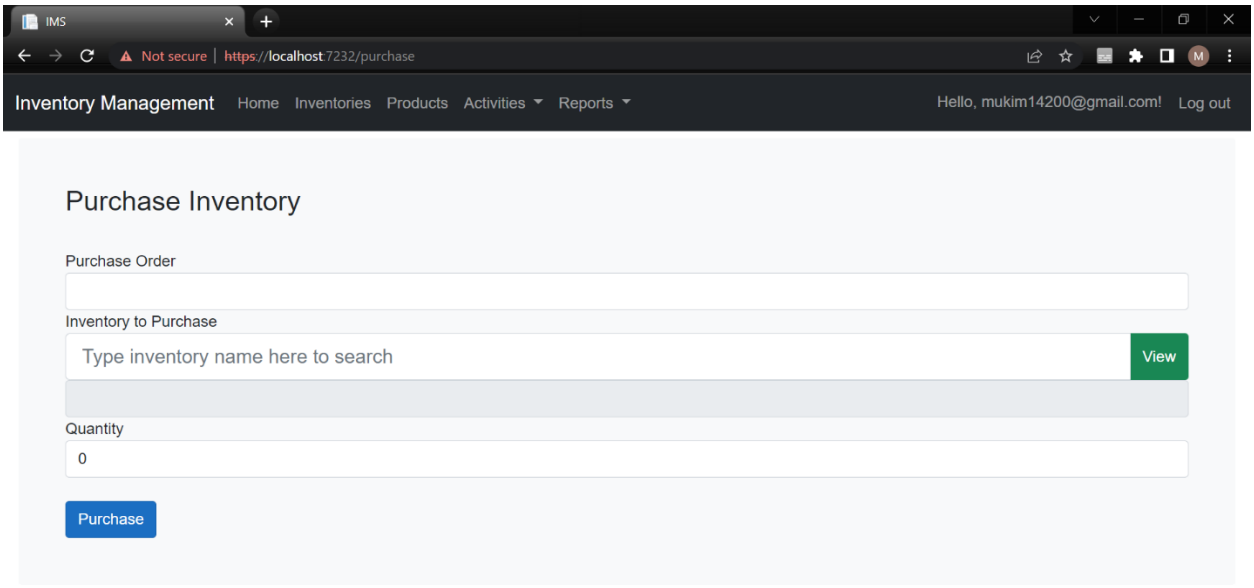

Figure: Purchase Activity

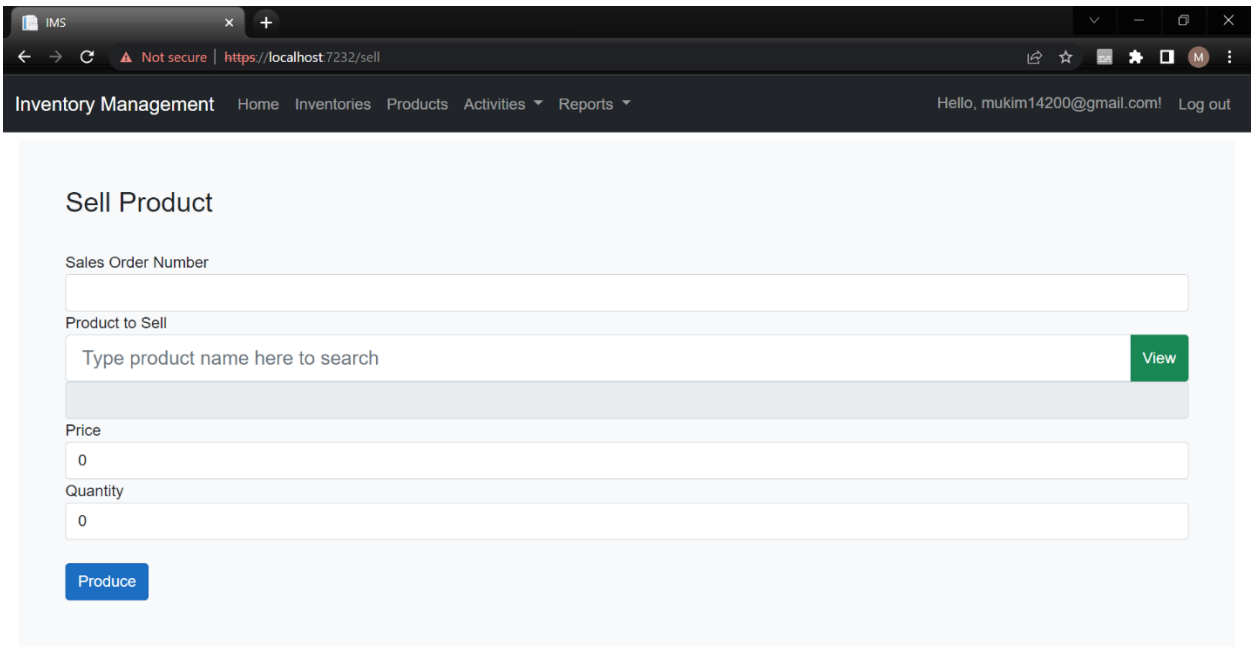

Figure: Sell Activity

At last, I added the Inventory Transaction Report Page and Product Transaction Report Page.

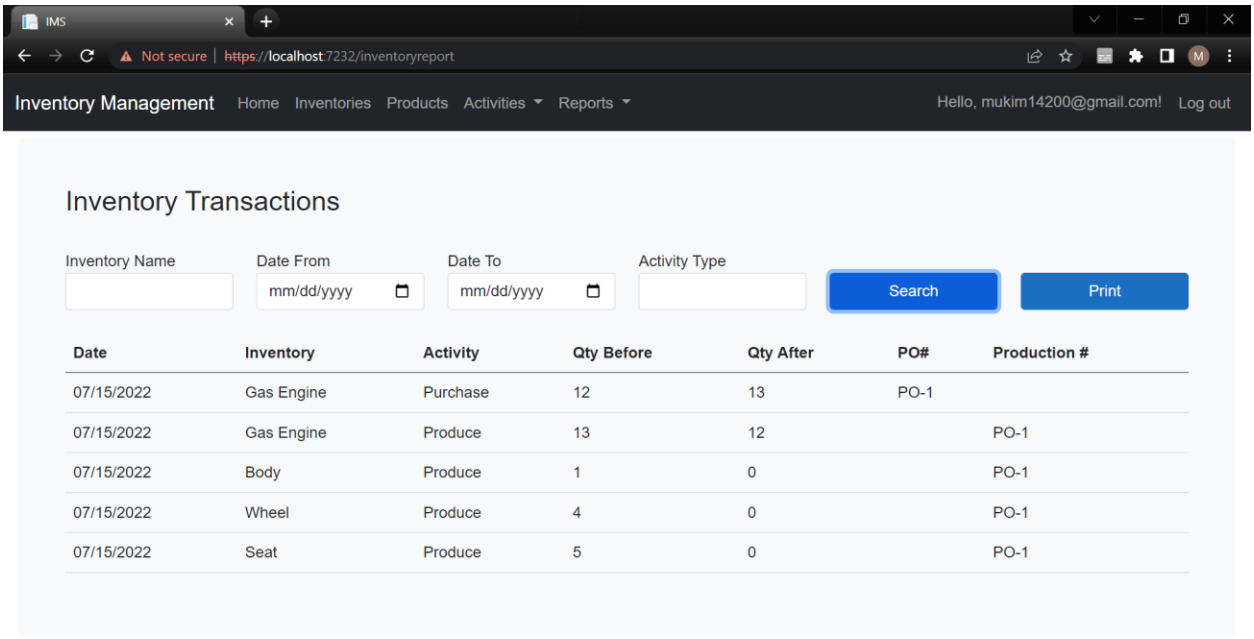

Figure: Inventory Transaction Report Page

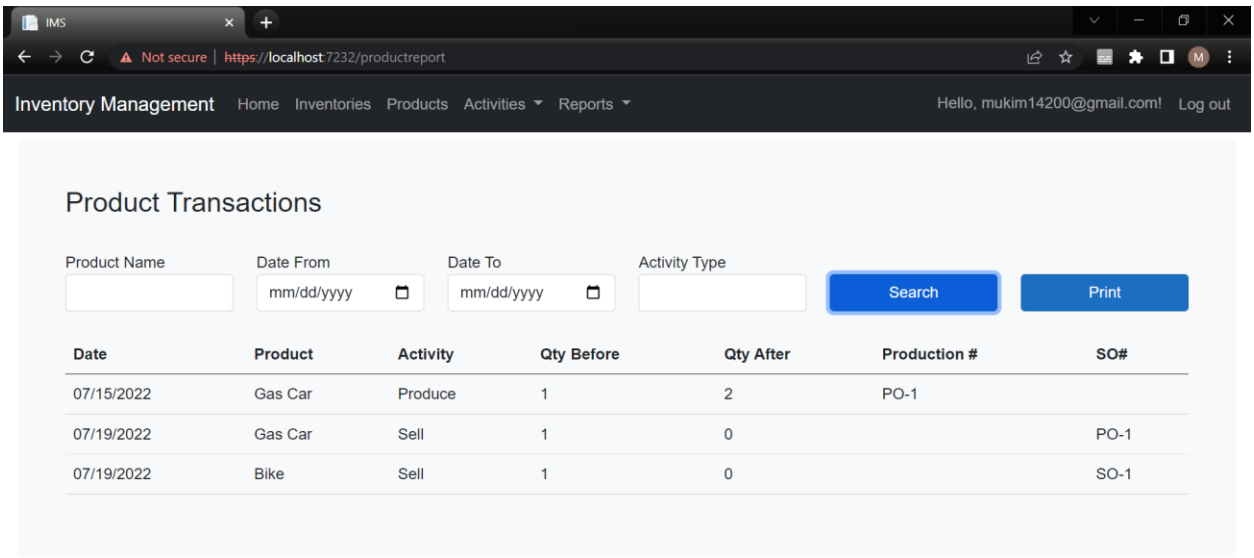

Figure: Product Transaction Report Page

Discussion

Inventory Management is a web-based management system where suppliers manage and maintain all kinds of information for their inventories. The main goal of the project is to make a platform for the suppliers and other users to easily manage their inventories and deal with the dealers. The database is connected and working fine. Sql server is also working fine. And the other functionalities. In this project, I use some tables in database to store data like Inventories, InventoriesTransactions, Products, ProductInventory and ProductTransactions.

Conclusion

The system is developed using ASP.NET Core and SQL. In future some features may be added. Some errors have been showed when connecting to database and some other functionalities and I fix them. All codes are written in VS Code 2022.

References

1. Wikipedia.com
2. w3schools.com