Lab 5 – JQuery, AJAX, and WebAPIs

The goal of this assignment is to give you some experience working with JQuery, AJAX, and WebAPIs. You will create a RESTful Web API in ASP.NET Core that will be used by a client-side Web application written in JQuery.

Requirements:

1. Create a Web API that will provide a public records service for a town.
    a. Create tables in your MS SQL Server database (cis-mssql1.temple.edu) to store home ownership and tax information.
        i. Home ownership information is like a deed that records the ownership of a home. Some of the information for a deed include the owner's name and contact info, the block and lot (these are simply numbers that represent a plot of land on a town's map), date of sale, and sale price of the home.
        ii. Tax information includes the home's accessed value, the land value the home is built on, the value of additions (this includes pools, guest houses, etc…), the tax rate, the tax amount for the year. The real estate tax for a home is based on the entire assessed value, which includes the home's value, land value, and additions.

    b. Create a Web API that provides the town's deed service, which includes adding a record of a home and changing information for a home.
        i. The Web API's Post action method must accept a Home object using JSON as its input and stores it in the appropriate database table. This method will create a new home record rather than updating an existing home record.
        ii. The Web API's PUT action method will be used to change the home's owner and sale information. The purpose of this method is to record a sale of a home to a new owner. The home will contain a new owner, date of sale, and sales price.
        iii. The Web API's Delete action method will delete a home and any related tax information stored in the database.
        iv. The Home object should contain all the necessary information about the home to be stored in the database.
        v. It's a good idea to create classes and objects for any entities the program uses like an Owner, too.

    c. Create another Web API that provides a tax service to a town. This Web API will be used to get tax information for a home.
        i. This Web API must contain a Get action method that retrieves tax information based on the block and lot for a home.
        ii. The Web API must contain a separate Get action method that retrieves tax information based on the address of the home.
        iii. The Web API must contain a separate Get action methods that retrieves a list of Home objects and tax information based on the owner's name.
        iv. This Web API's Put action method must accept a Home object used to update an existing home's value data in the database. The purpose of this method is to

update the value of the home during reassessments that are done by a town every few years.

2. Create a Web Application that uses the two Web APIs you built in the previous step.
    a. Add ".html" files to your project that will contain JQuery code to implement the application's functionality.
    b. The application must allow the user to add a home to the database. The page must allow the user to enter information about a home, validate the input, and use JQuery & AJAX to call the correct Web API to add the home to the database.
        i. Display a message regarding the result of the operation.
    c. The application must allow the user to record a change to the ownership of a home that would occur when a home is sold.
    d. The application must allow the user to delete a home and any related tax information stored in the database.
    e. Parts "c" and "d" described above require the user searching for a home and seeing it's information before proceeding with the update.
    f. Provide a search tool to allow the user to look up and find tax information on a house. You need to allow the user to search based on the block and lot, address, or owner's name. The search tool should proved the ability to search either of these ways and let the user's choose which search they like to perform.
        i. Display the home and tax information using CSS to make the display look professional and attractive; don't just simply display the text.
        ii. The search by owner may return multiple records, so you will need to handle the display for multiple records.
    g. You must use JQuery & AJAX to call the Web API methods to perform all the described operations.
    h. Use CSS to style the page and make it look professional and attractive. You are allowed to use BootStrap or related tools to style your pages.

3. Remember to add a section to the labs.html page created in Lab 1 for this lab.
    a. Include a description of what you learned, what elements you liked/disliked, and a link to the page you created for Lab 5.