

CIS 3344 Lab 5 – JQuery, AJAX, and Web APIs

The goal of this assignment is to give you some experience working with JQuery, AJAX, and a Web API. 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 for a real estate management system.
 - a. Create tables in your MS SQL Server database (cis-mssql1.temple.edu) to store houses and homeowners.
 - i. The database needs to store houses that are available for sale or rent. Be sure to create a field like HomeID that uniquely identifies a home stored in the database. An address is not good enough because homes may have the same address, but they will not have the same HomeID.
 - ii. The database needs to store home owners that own the home that is available for rent or sale. Home owners will not be using the system, so they do not need to login to your application.
 - iii. The database needs to record the status of a home (available, sold, or off the market).
 - b. The Web API will provide most of the functionality for this assignment. Create a Web API that performs all database operations.
 - i. Create a POST action method used to add a home to the database. This method should receive a home object with all the necessary information (homeowner, address, description, price, square footage of the house, number of bedrooms, number of bathrooms, the year the home was built, image URL for a house, availability, etc...) and store the home in the database.
 - ii. Create a GET action method that retrieves a list of homes based on their category (single family home, town house, condo, rental) from the database.
 - iii. Create a GET action method that retrieves a list of homes based on their zipcode.
 - iv. Create a GET action method that retrieves a list of homes based on the search criteria (max price, square footage, number of beds, and number of bathrooms).
 - v. Create a GET action method that retrieves a home based on the HomeID.
 - vi. Create a PUT action method that receives a HomeID and all the home's information that is used to update an existing home's information including status (available, sold, or off the market) in the database.
 - vii. Create a DELETE action method that receives a HomeID and deletes the home from the database.
 - viii. It's a good idea to create classes and objects for any entities the program uses, too.

2. Create a Web Application that uses the Web API you built in the previous step. The Web Application will be responsible for providing the user interface (GUI) and making the appropriate calls to the Web API.
 - 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 new home to the database.
 - c. The application must allow the user to delete a home from the database.
 - d. The application must allow the user to update the data for an existing home in the database.
 - e. The application should allow the user to select a category of homes (single family home, town house, condo, rental) and display a list of homes along with their information (address, description, price, square footage of the house, number of bedrooms, number of bathrooms, the year the home was built, image URL for a house, availability, etc...).
 - f. The application should allow the user to search for homes based on search criteria (max price, square footage, number of beds, and number of bathrooms) and view the results of the search along with the information for each home.
 - g. The application should allow the user to display all homes the real estate agent is responsible for selling/renting.
 - h. The application must allow the user to select a home and change the home’s availability.
 - i. All database operations must be done in the Web API. Your application must call the appropriate Web API methods to perform the necessary operations described in the requirements listed above.
 - j. You must use JQuery & AJAX to call the Web API methods to perform all the described operations.
 - k. Make sure to perform the necessary client-side input validation where necessary. Your programs shouldn’t crash for any reason.
 - l. 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.