

WEB422 Assignment 1

Submission Deadline:

Friday, May 17th @ 11:59pm

Assessment Weight:

5% of your final course Grade **Objective:**

In this assignment you will:

1. practice how to work with AJAX to update an area of a web page without reloading a web page.
2. get the "Teams" Web API ready for use with the WEB422 course as well as reinforce the use of the jQuery and Bootstrap frameworks for rendering API data.

Specification:

Part 1 (1 mark)

For this part of assignment 1, you will be updating a part of a web page with tabulated data from an xml file. Required:

1. Create a xml file hosting data from one of these four sectors: (i) Healthcare (ii) Education (iii) Banking (iv) Real Estate. Your xml file must have 10 records each containing 4 fields. Its up to you to choose meaningful fields.
2. Write an HTML markup code that will display four images of your own choice on the right side when the page loads the first time. Images must be relevant in the sector from which xml data is drawn.
3. Add AJAX code to your HTML mark code with relevant functions that will update that will update the left area of the web page with table containing data read from the xml file. Choose the names of the functions and create them. The page's left-hand side update is to be triggered by a button click event. Before the AJAX update the web page should display the button to be clicked on the top of left-hand side of the page and the four sector-relevant images on the right-hand side.
4. Save the two program files in one folder named 'HTML-XML-AJAX-PRAC' .

Part 2 (4 mark)

For this part of assignment 1, we will be publishing our own personal version of the "Teams" API on Heroku. We will then write jQuery code to request data and render it on the page using Bootstrap (3.3.7).

Step 1: Obtaining the Code Examples / teams-api from GitHub

The first step will be downloading ("cloning") The web422 repository, located here:

<https://github.com/sictweb/web422>

This can be done by opening a Command Prompt / terminal window and entering the command:

```
git clone https://github.com/sictweb/web422.git
```

Once this operation completes successfully, open the newly received folder (this will be "web422") and open the "Code Examples" folder. Here you will see a "**teams-api**" folder - this is the main folder with all of the API / Server logic in it, so it's best to copy this whole folder out of "Code Examples" and into another location that's easy to remember. We will be updating it during this and *future* assignments.

Once you have the "**teams-api**" folder in a more permanent location, open it in Visual Studio Code.

Step 2: Following the Guide

Now that you have obtained the source code and have the folder open in Visual Studio Code, the next step involves following along with the instructions located [online here](#). This will help you to get a new MongoDB Atlas Database set up, as well as configure the server.js file correctly and push the solution to Heroku.

Step 3: Boilerplate Client Side Code

Once you have completed the guide (Step 2), and have the Teams API running on Heroku (this can be tested by accessing the newly-created Heroku URL in a web browser and using one of the API routes such as "/teams") we need to create some code on the client-side to work with the data.

To get started, create a new Assignment 1 folder and open it up in Visual Studio Code (this folder is what we will be submitting as the completed assignment)

- First, create the following folder / file structure

```
o css
  + main.
css o js
  + main.j
s o index.html
```

- Next, we will use some boiler-plate code to start our index.html. You can copy and paste the index.html file from the WEB422 "static-server" example - this can be found [online here](#).
- Be sure to add a CSS reference to "css/main.css" and a JavaScript reference to "js/main.js"
- Lastly, ensure that the <title> element is changed from "Welcome" to "*student* - WEB422" where *student* is your first and last name, ie: "Patrick Crawford - WEB422"

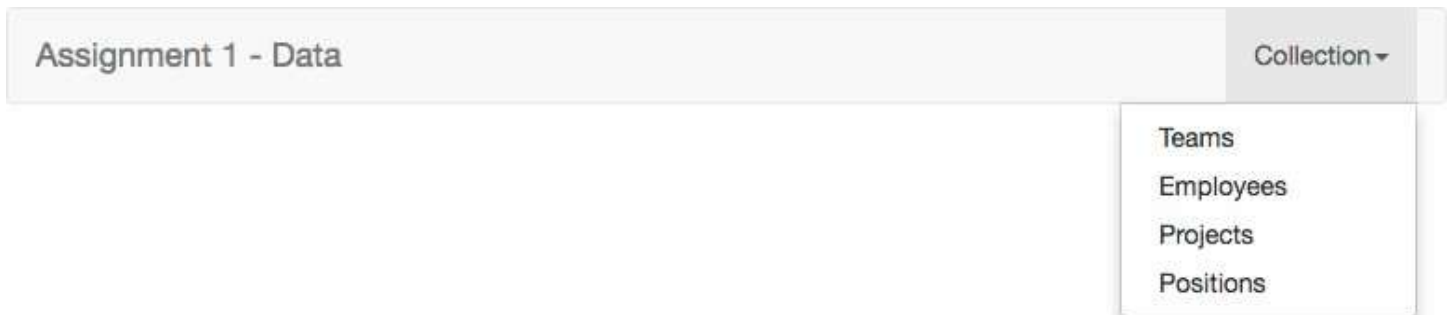
Step 4: Static Content

Before we start accessing the API and populating our page with data, we should create some static page elements that support our dynamic data. Make use of the [Official Bootstrap 3 Documentation](#) to create the following static page elements on your index.html page:

- A [Navbar element](#) (using the main example) consisting of the following:
 - The "navbar-brand" text should read "Assignment 1 - Data" ○ **Do not** include the element: `<ul class="nav navbar-nav">...`
 - **Do not** include the element: `<form class="navbar-form navbar-left">...</form>` ○ The element: `<ul class="nav navbar-nav navbar-right">...` must consist of a **dropdown** menu, with a **dropdown-toggle** that reads "**Collection**" containing the following items:

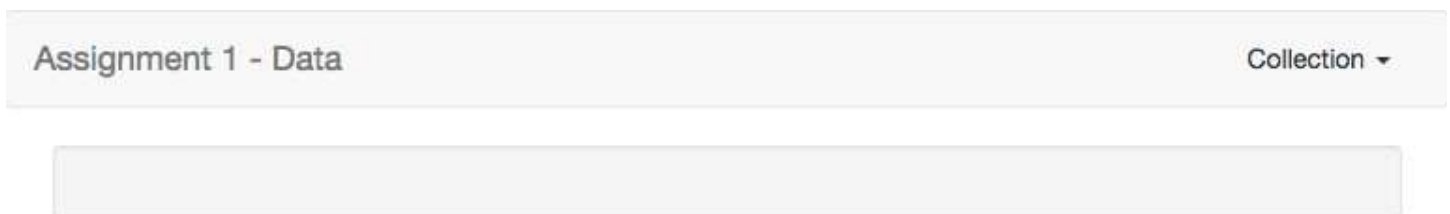
```
<li><a href="#" id="teams-menu">Teams</a></li>
<li><a href="#" id="employees-menu">Employees</a></li>
<li><a href="#" id="projects-menu">Projects</a></li>
<li><a href="#" id="positions-menu">Positions</a></li>
```

- When complete, the navbar should look like the image below:



- Next, you must include A responsive grid with a single column (ie, "col-md-12" - see the notes on "[Responsive Grid System](#)" from Week 11 in WEB322) that contains a single ["well"](#) with id="data". Essentially, we're creating a horizontally centered container for our data.
- To ensure that the "well" doesn't grow too large when populated with data, add some CSS to your main.css file to ensure that it **does not** exceed **300px** high (HINT: use the **max-height** and **overflow-y** properties)

When complete, the page should look like this:



Step 5: Accessing the API and updating the DOM

Now that we have a reliable WEB API that we can use to access data, as well as an HTML page with the correct controls and container, we can start writing code to fetch the data and update the DOM.

The first step is to create a DOM [ready handler](#) inside your main.js file to execute all of your jQuery code. Inside the ready callback, output some text to the console (ie: "jQuery working") so that you know that jQuery is working properly before you proceed.

Next, we need to wire up all 4 menu items in the "Collection" menu to fetch some data and update the DOM when clicked (HINT: use the ["on" method](#) for each element to bind the "click" event) according to the following specification:

Teams is Clicked

- Prevent the "default action" using [event.preventDefault\(\)](#). This will stop the element from behaving like a regular link.
- Make an AJAX GET request to your Teams API hosted on Heroku to GET all teams (/teams). When this is "done":
 - Clear the contents of the "well" (id="data") element using the [.empty\(\)](#) method
 - Add the element **<h3>Teams</h3>** to the "well"
 - [Append](#) the results of the AJAX query to the "well". HINT: Be sure to call [JSON.Stringify\(data\)](#) on the returned data, so that it can render as plain text in the browser
- When complete, it should look like this:

```
Teams
[{"_id":"599b0af0fc13ae20630004a6","TeamName":"Team 1","TeamLead":{"_id":"5997456604a898b529b5ed3f","FirstName":"Zsa zsa","LastName":"Mannering","AddressStreet":"7471 Burning Wood Crossing","AddressState":"CA","AddressCity":"Santa Monica","AddressZip":"90410","PhoneNum":"+1-(310)552-1997","Extension":1,"Position":{"_id":"5997339b04a898b529b5ec07","PositionName":"Back End Developer","PositionDescription":"Responsible for server-side web application logic and integration. This includes writing the web services and APIs used by front-end developers and mobile application developers.","PositionSalary":68000,"__v":0},"HireDate":"2010-11-07T04:00:00.000Z","SalaryBonus":24901,"__v":0},"Employees":[{"_id":"5997456604a898b529b5ed40","FirstName":"Andy","LastName":"Ellingsworth","AddressStreet":"947 Lake View Parkway","AddressState":"CA","AddressCity":"Fresno","AddressZip":"93715","PhoneNum":"+1-(559)533-3179","Extension":2,"Position":{"_id":"5997339b04a898b529b5ec08","PositionName":"System Architect","PositionDescription":"Systems architects are responsible for the the architecture of the system including identifying hardware and software patterns and strategies to solve a specific business problem","PositionSalary":73500,"__v":0},"HireDate":"2008-06-23T04:00:00.000Z","SalaryBonus":11219,"__v":0}]}
```

Employees is Clicked

- Prevent the "default action" using [event.preventDefault\(\)](#). This will stop the element from behaving like a regular link.

- Make an AJAX GET request to your Teams API hosted on Heroku to GET all employees (/employees). When this is "done":
 - Clear the contents of the "well" (id="data") element using the [.empty\(\)](#) method
 - Add the element **<h3>Employees</h3>** to the "well"
 - [Append](#) the results of the AJAX query to the "well". HINT: Be sure to call [JSON.Stringify](#)(data) on the returned data, so that it can render as plain text in the browser
- When complete, it should look like this:

```

Employees
[{"_id":"5997456604a898b529b5ed3f","FirstName":"Zsa zsa","LastName":"Mannerling","AddressStreet":"7471 Burning Wood Crossing","AddressState":"CA","AddressCity":"Santa Monica","AddressZip":"90410","PhoneNum":"+1-(310)552-1997","Extension":1,"Position":{"_id":"5997339b04a898b529b5ec07","PositionName":"Back End Developer","PositionDescription":"Responsible for server-side web application logic and integration. This includes writing the web services and APIs used by front-end developers and mobile application developers.","PositionSalary":68000,"__v":0},"HireDate":"2010-11-07T04:00:00.000Z","SalaryBonus":24901,"__v":0}, {"_id":"5997456604a898b529b5ed40","FirstName":"Andy","LastName":"Ellingsworth","AddressStreet":"947 Lake View Parkway","AddressState":"CA","AddressCity":"Fresno","AddressZip":"93715","PhoneNum":"+1-(559)533-3179","Extension":2,"Position":{"_id":"5997339b04a898b529b5ec08","PositionName":"System Architect","PositionDescription":"Systems architects are responsible for the architecture of the system including identifying hardware and software patterns and strategies to solve a specific business problem","PositionSalary":73500,"__v":0},"HireDate":"2008-06-23T04:00:00.000Z","SalaryBonus":11219,"__v":0}]

```

[Projects](#) is Clicked

- Prevent the "default action" using [event.preventDefault\(\)](#). This will stop the element from behaving like a regular link.
- Make an AJAX GET request to your Teams API hosted on Heroku to GET all projects (/projects). When this is "done":
 - Clear the contents of the "well" (id="data") element using the [.empty\(\)](#) method
 - Add the element **<h3>Projects</h3>** to the "well"
 - [Append](#) the results of the AJAX query to the "well". HINT: Be sure to call [JSON.Stringify](#)(data) on the returned data, so that it can render as plain text in the browser
- When complete, it should look like this:

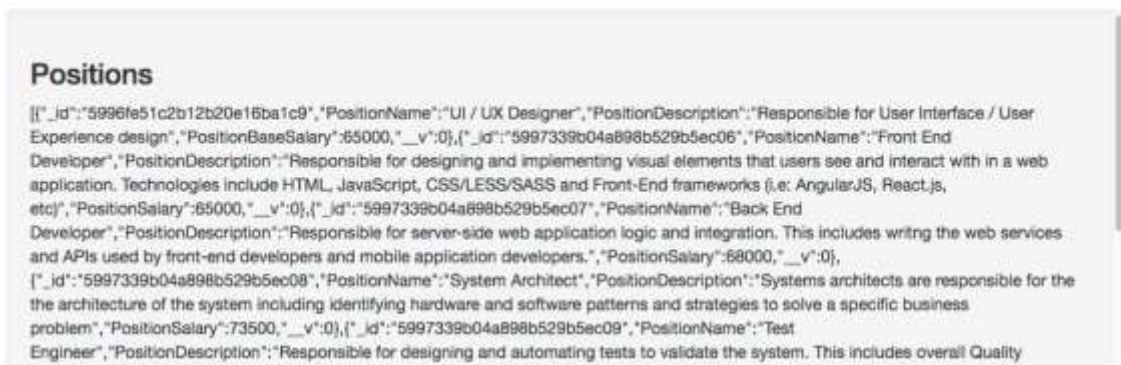
```

Projects
[{"_id":"599af650fc13ae7e60000064","ProjectName":"Project 1","ProjectDescription":"Lorem ipsum dolor sit amet, consectetur adipiscing elit. Quisque lobortis vel nunc non tincidunt. Proin elementum facilisis ipsum id tincidunt. Phasellus ut orci placerat, cursus ante sed, feugiat elit. Nullam at velit metus. Morbi suscipit fringilla tellus, id tristique massa mollis a. Cras non tincidunt diam. Morbi rutrum enim eget facilisis aliquet. Ut mattis euismod fermentum. Vestibulum ut tincidunt purus, et porttitor mi.", "ProjectStartDate":"2007-01-17T05:00:00.000Z","ProjectEndDate":null,"__v":0}, {"_id":"599af650fc13ae7e60000065","ProjectName":"Project 2","ProjectDescription":"Nunc at imperdiet purus. Nullam tincidunt orci nibh, eget pellentesque metus rutrum tincidunt. Donec diam purus, dictum non mollis id, facilisis at urna. Nunc euismod bibendum ipsum sed pellentesque. Proin faucibus urna nisi, quis vulputate dolor facilisis vitae. Donec enim magna, posuere id hendrerit sit amet, elementum id dui. Mauris lectus ligula, volutpat eget lacus non, lobortis vestibulum enim. Fusce id pretium risus. Morbi in porttitor arcu, vitae malesuada nunc. Vestibulum mattis bibendum ligula et congue. Pellentesque tempor magna ut magna tempus ullamcorper.", "ProjectStartDate":"2009-01-21T05:00:00.000Z","ProjectEndDate":null,"__v":0}, {"_id":"599af650fc13ae7e60000066","ProjectName":"Project 3","ProjectDescription":"Morbi aliquam sodales fringilla. Praesent eget ultricies

```

Positions is Clicked

- Prevent the "default action" using [event.preventDefault\(\)](#). This will stop the element from behaving like a regular link.
- Make an AJAX GET request to your Teams API hosted on Heroku to GET all positions (/positions). When this is "done":
 - Clear the contents of the "well" (id="data") element using the [.empty\(\)](#) method
 - Add the element **<h3>Positions</h3>** to the "well"
 - [Append](#) the results of the AJAX query to the "well". HINT: Be sure to call [JSON.Stringify](#)(data) on the returned data, so that it can render as plain text in the browser
- When complete, it should look like this:



Assignment Submission:

1. Add the following declaration at the top of your main.js file

```
/******  
WEB422 – Assignment 1  
* I declare that this assignment is my own work in accordance with Seneca Academic Policy. * No part  
  of this assignment has been copied manually or electronically from any other source * (including web  
  sites) or distributed to other students.  
*  
* Name: _____ Student ID: _____ Date: _____  
*  
*  
*****/
```

2. Compress (.zip) the files in your Visual Studio working directory (this is the folder that you opened in Visual Studio to create your client side code).
3. NOTE: Put part 1 and part 2 in one zip folder and submit on Blackboard.

Important Note:

- **NO LATE SUBMISSIONS** for assignments. Late assignment submissions will not be accepted and will receive a **grade of zero (0)**.

- Submitted assignments **must** run locally, ie: start up errors causing the assignment/app to fail on startup will result in a **grade of zero (0)** for the assignment.
- After the end (11:59PM) of the due date, the assignment submission link on My.Seneca will no longer be available.