Introduction to Web Technology

Lab Programming Exercise (Week 11)

(this is not an assignment)

Initial Setup: Create a directory to store the code of this lab exercise. Follow the instructions below to start a web server at the newly created directory.

Running web server on **Mac** using command:

```
python3 -m http.server [port-number] -d [web-directory]
```

For example, to run on port 50000 and directory /Users/jsmith/Desktop/myweb

```
python3 -m http.server 50000 -d "/Users/jsmith/Desktop/myweb"
```

The website will be at the address: `http://localhost:50000/`

Running web server on **Windows** using command:

```
python -m http.server [port-number] -d [web-directory]
```

For example, to run on port 8000 and directory "C:\Users\jsmith\Desktop\my web"

```
python -m http.server 8000 -d "C:\Users\jsmith\Desktop\my web"
```

The website will be at the address: `http://localhost:8000/`

This is a sample code for making AJAX call to get JSON:

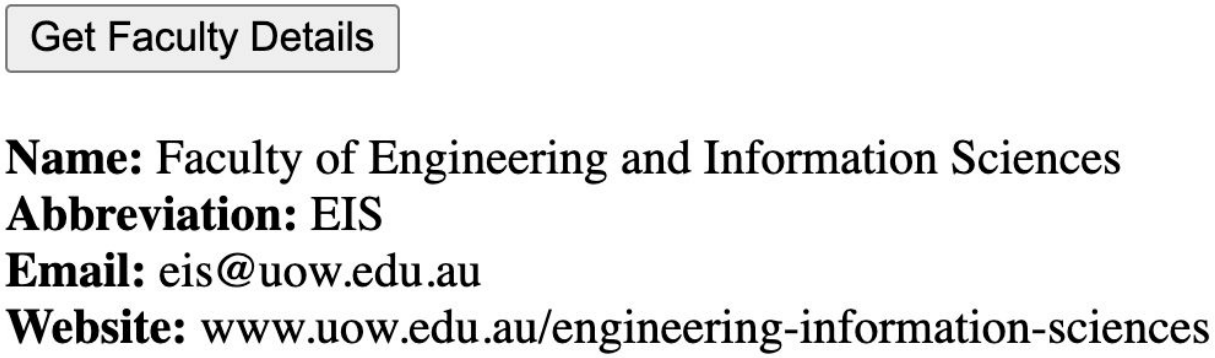
```
// make ajax query
function makeAjaxQuery()
{
  // create an XMLHttpRequest
  var xhttp = new XMLHttpRequest();

  // create a handler for the readyState change
  xhttp.onreadystatechange = function() {
    readyStateChangeHandler(xhttp);
  };

  // making query by async call
  var queryUrl = "url-to-query-the-server";
  xhttp.open("GET", queryUrl, true);
  xhttp.send();
}

// handler for the readyState change
function readyStateChangeHandler(xhttp)
{
  if (xhttp.readyState == XMLHttpRequest.DONE)
  {
    if(xhttp.status == 200)
    {
      // status = 200 means OK
      handleStatusSuccess(xhttp);
    }
    else
    {
      // status is NOT OK
      handleStatusFailure(xhttp);
    }
  }
}
```

```
// XMLHttpRequest failed
function handleStatusFailure(xhttp)
{
  alert("AJAX request fail");
  alert("readyState = " + xhttp.readyState);
  alert("status = " + xhttp.status);
}


// XMLHttpRequest success
function handleStatusSuccess(xhttp)
{
  alert("AJAX request success");

  // get the response json
  var jsonText = xhttp.responseText;
  alert(jsonText);

  // parse the json into an object
  var obj = JSON.parse(jsonText);

  // display the object on the page
  display(obj);
}

// display the javascript object info on the webpage
function display(obj)
{
  // TODO
}
```

Question 1. Create a JSON document `faculty.json` with the following content:

```
{
  "name": "Faculty of Engineering and Information Sciences",
  "abbreviation": "EIS",
  "email": "eis@uow.edu.au",
  "web": "www.uow.edu.au/engineering-information-sciences"
}
```

Create a web page `Question1.html`.
On the web page, display a button "Get Faculty Details".
When the user clicks this button, write an AJAX call to get the above JSON file, parse the JSON into a Javascript object, and then display the Javascript object on the webpage as follows:



Question 2. Create a JSON document `airport.json` with the following content:

```
{
  "searchQuery": "Australia",
  "searchResult": [
    {
      "airportName": "Sydney Airport",
      "ICAO": "YSSY",
      "IATA": "SYD",
      "city": "Sydney",
      "country": "Australia"
    },
    {
      "airportName": "Canberra Airport",
      "ICAO": "YSCB",
      "IATA": "CBR",
      "city": "Canberra",
      "country": "Australia"
    },
    {
      "airportName": "Brisbane Airport",
      "ICAO": "YBBN",
      "IATA": "BNE",
      "city": "Brisbane",
      "country": "Australia"
    },
    {
      "airportName": "Adelaide Airport",
      "ICAO": "YPAD",
      "IATA": "ADL",
      "city": "Adelaide",
      "country": "Australia"
    },
    {
      "airportName": "Hobart International Airport",
      "ICAO": "YMHB",
      "IATA": "HBA",
      "city": "Hobart",
      "country": "Australia"
    },
    {
      "airportName": "Melbourne Airport",
      "ICAO": "YMML",
      "IATA": "MEL",
      "city": "Melbourne",
```

```
      "country": "Australia"
    },
    {
      "airportName": "Perth Airport",
      "ICAO": "YPPH",
      "IATA": "PER",
      "city": "Perth",
      "country": "Australia"
    },
    {
      "airportName": "Darwin International Airport",
      "ICAO": "YPDN",
      "IATA": "DRW",
      "city": "Darwin",
      "country": "Australia"
    }
  ]
}
```

Create a web page `Question2.html`.
On the web page, display a button "Search Airport".
When the user clicks this button, write an AJAX call to get the above JSON file, parse the JSON into a Javascript object, and then display the Javascript object on the webpage as follows:

Search Airport

Search Query: Australia

Airport	ICAO	IATA	Location
Sydney Airport	YSSY	SYD	Sydney, Australia
Canberra Airport	YSCB	CBR	Canberra, Australia
Brisbane Airport	YBBN	BNE	Brisbane, Australia
Adelaide Airport	YPAD	ADL	Adelaide, Australia
Hobart International Airport	YMHB	HBA	Hobart, Australia
Melbourne Airport	YMML	MEL	Melbourne, Australia
Perth Airport	YPPH	PER	Perth, Australia
Darwin International Airport	YPDN	DRW	Darwin, Australia

END OF THE PROGRAMMING EXERCISE