# **Assignment 4: World Countries**

## Description

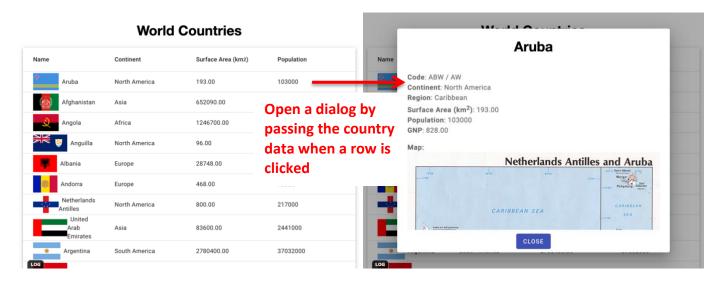
Write an Angular application to load the list of countries remotely, and to display the information of countries with national flags into a table using Material Table. When user clicks on a row of the table, it displays the detail of the selected country with the country map using Material Dialog.

The country data is available at <a href="http://ejd.songho.ca/syst24444/world/">http://ejd.songho.ca/syst24444/world/</a> as a JSON format, and contains a named array of 239 countries and each country consists of the following properties (only BOLD properties are used in your application).

```
"Country": [
    "Code": "ABW",
    "Name": "Aruba",
    "Continent": "North America",
    "Region": "Caribbean",
    "SurfaceArea": "193.00",
    "IndepYear": null,
    "Population": "103000",
    "LifeExpectancy": "78.4",
    "GNP": "828.00",
    "GNPOld": "793.00",
    "LocalName": "Aruba",
    "GovernmentForm": "Nonmetropolitan Territory of The Netherlands",
    "HeadOfState": "Beatrix",
    "Capital": "129",
    "Code2": "AW"
},
{
```

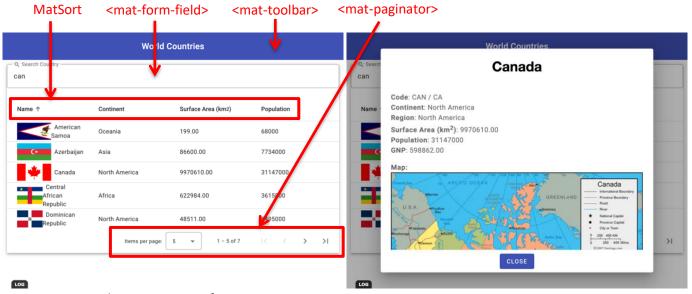
The naming convention of the flag image is 2-character country code with JPEG format, for example Canada flag image is <a href="http://ejd.songho.ca/syst24444/flags/ca.jpg">http://ejd.songho.ca/syst24444/flags/ca.jpg</a>. The map image of a country uses 3-character country code with GIF format; <a href="http://ejd.songho.ca/syst24444/maps/can.gif">http://ejd.songho.ca/syst24444/maps/can.gif</a> for Canada.

## **OPTION A (MAX 80%)**



- Must use Angular **HttpClient** service to load the JSON data remotely. If failed, display the error message to the console.
- Must use Angular Material components; Table, Button, Dialog, etc. for user interface (UI)
- Must use **MatTableDataSource** for the MatTable component.
- Must open the dialog window and pass the country data when a user clicks on a table row.
- Define **getFlagImage(***code: string***)** member function in AppComponent to return the URL to the flag image of each country. The parameter is the 2-character country code. For Canada, the flag file is **ca.jpg**. This function is used for **[src]** property binding.
- Define **openDialog**(*country: any*) member function in AppComponent to open a dialog by passing the selected country object. This function is called whenever a row of the table is clicked.
- Must display the country name in <mat-dialog-title> of the dialog.
- Must display the country codes (2 and 3 digits), continent, region, surface area, population, GNP, and map in the dialog.
- Define getMapImage(code: string) to generate the URL of the map using 3-character country code (All lowercase)

### **OPTION B (MAX 100%)**



- Must implement Option A first.
- Must add **MatSortModule** to sort the country list by clicking the table headers, <u>sorted by Name initially when the app is launched</u>.
- Must add MatFormFieldModule to search (filter) countries by keywords.
- Must add MatToolbarModule to display the title.
- Must add MatPaginatorModule to limit the number of countries per page, 5, 10, 50, 100, 300.
- **HINT**: <a href="https://material.angular.io/components/table/overview">https://material.angular.io/components/table/overview</a> <a href="https://www.angularjswiki.com/material/mat-table/">https://www.angularjswiki.com/material/mat-table/</a>

#### **Deliverables**

An archive file, **Assignment4\_**<**yourname>.zip**, which contains your project distribution folder under **dist** subdirectory. It should be runnable on any system after download it;

**NOTE**: You must build your project with "ng build --base-href ./ --configuration development" at the terminal. (An incorrect build/submission will be deducted)

**NOTE**: You must include the file header at the beginning of each file. The header must contain a short description, your name, email, date, etc.

#### Submission and Due Date

Submit your deliverables to SLATE/Assignments/Assignment4 by Friday, Aug. 18, 11:59 PM.

You may submit multiple versions, but only the latest version will be evaluated.

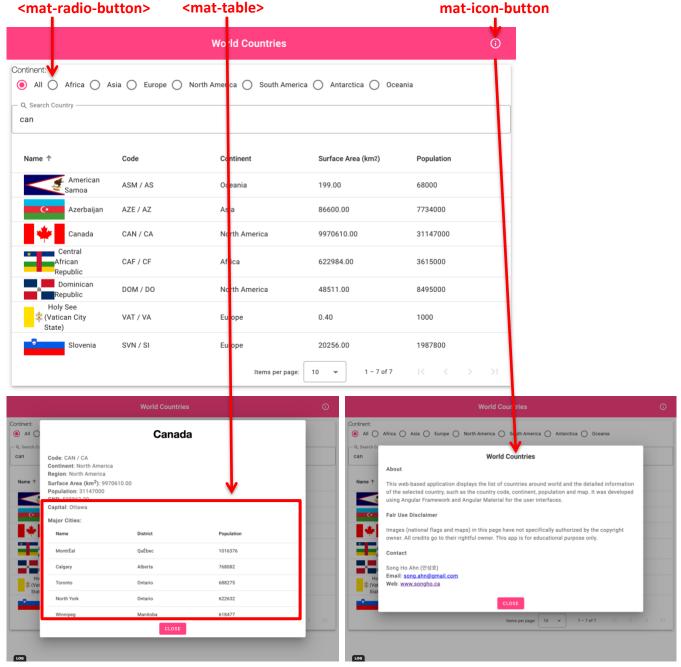
NOTE: Late submission will be deducted 10% per day. (max. 3 days)

**NOTE**: Partial implementation will be accepted.

**NOTE**: This assignment is individual work and subject to Sheridan Academic Integrity Policy.

#### Bonus (20 points max)

- Use other Material components such as Icon, Radio Buttons, etc. (10 points)
- Load the list of cities in the dialog to display the capital and other cities of the selected country (5 points) http://ejd.songho.ca/syst24444/city/
- Add an additional dialog to display the application description and credits (5 points)
- Add additional features to enhance your application (5 points)



```
The JSON structure of the cities are below, and linked with the corresponding country by "CountryCode" property;
  "City": [
    {
      "ID": "1",
      "Name": "Kabul",
      "CountryCode": "AFG",
      "District": "Kabol",
      "Population": "1780000"
    },
    . . .
Q & A (Extra Notes)
Q1. How to pass data to a dialog component?
A1: Create a MatDialogConfig object and attach a custom data to it
// in parent component
let config = new MatDialogConfig();
config.data = country;
                             // attach a country object
dialog.open(MyDialogComponent, config);
// inject the data to the dialog component
constructor(@Inject(MAT DIALOG DATA) data: any) {
    this.country = data; // receive a country object
Q2. How to sort or paginate the data of MaTable?
A2: Assign MatSort and MatPaginator references after the data is loaded
// in component
countrySource = new MatTableDataSource();
@ViewChild("sortCountry") sortCountry!: MatSort; // get reference from html
@ViewChild("pageCountry") pageCountry!: MatPaginator; // reference from html
// assign objects after the JSON is loaded
this.countrySource.data = json.Country;
this.countrySource.sort = this.sortCountry;
this.countrySource.paginator = this.pageCountry;
// in html (template)
<mat-table [dataSource] = "countrySource" matSort #sortCountry = "matSort">
</mat-table>
<mat-paginator #pageCountry ...>
Q3. How to search/filter the data of MatTable?
A3: Convert the string in <input> to all lowercases, then assign it to the filter of MatDataSource
// in component
filterCountry = ""; // to hold search keyword
this.countrySource.filter = this.filterCountry.trim().toLowsercase();
```