

CMPT 661 Web Development - Fall 2017

JavaScript Asynchronous Programming

Objective

The objective of this homework is to practice JavaScript particularly asynchronous programming using Callbacks, Promises and async/await.

In this homework you will implement an application that allows users to ask different kind of queries about countries by querying the following JSON files:

- <https://cmpt661f17.github.io/data/countries.json>
- <https://cmpt661f17.github.io/data/countries-literacy.json>
- <https://cmpt661f17.github.io/data/world-universities.json>

Requirements

You are requested to design and build a World Explorer JavaScript App that deliver the following functionality:

1. Create countryRepository.js module to implement the methods shown in the table below.
Create countryRepository.spec.js file to test the methods implemented in the Country Repository.

The Country Repository class should have the following methods:

getCountryLiteracy	Accepts countryCode as input and returns a country literacy details as json object including countryCode, country, femaleLiteracyRate, maleLiteracyRate.
getUniversitiesCount	Accepts countryCode as input and returns the number of universities.
getCountry	Accepts countryCode as input and returns the country details as json object. The country data should be retrieved from countries.json. The returned country object should also have the following: countryCode, name, capital, region, subregion, population, currency, femaleLiteracyRate, maleLiteracyRate, universitiesCount. (Note that currency should be the 1 st currency in currencies)
getNeighboursLiteracy	Takes as input a countryCode and returns neighboring countries and their literacy rates. The returned list of countries should be sorted based on the average literacy rate.
getRegionLiteracy	Takes as input a region and returns all the countries in that region (e.g., Asia). Sort the list based on the femaleLiteracyRate.
getTop5LowestLiteracy	Get the top 5 countries with the lowest literacy rate. Return countryCode, country, femaleLiteracyRate, maleLiteracyRate.

getTop5UniversitiesCount	Get the top 5 countries with the highest number of universities. Return countryCode, country, universitiesCount.
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You should use async/await (or promises) and other JavaScript features such as arrow functions, array functions (.map, .reduce, .filter, .splice, .sort...), spread operator, object literals, and classes wherever required.

2. Provide a Web user interface to make the following functionality accessible via the Web:

- Allow the user to select a country to display its details
- Allow the user to select a region (e.g., Asia) to get the countries and female and male literacy rates.
- Allow the user to get the top 5 countries with lowest literacy rates.

You are required to complete the ***Hw2-TestingDoc-Grading-Sheet.docx*** and save it inside **Hw2-JavaScript** subfolder. Sync your repository to push your work to Github.