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| Faculty of Applied Sciences and Technology |
| **XML/JSON Data Processing** |
| ITC5202 - Project |
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| **[Pick the date]** |

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| This document explains how to process XML/JSON data …………………………. |

Table of Contents

[Question 1: Use JavaScript/Ajax to process XML data 2](#_Toc519253004)

[Question 2,3,4,6: Use JavaScript/jQuery to process JSON data 3](#_Toc519253005)

[Question 5 and 7(Bonus) : XSLT and XPath 4](#_Toc519253006)

[Summary 5](#_Toc519253007)

# Question 1: Use JavaScript/Ajax to process XML data

(Describe the major steps for designing the JavaScript function(s), how you test this program, add some screenshots of the output )

In order to do the first question we have to understand the given country.xml data set properly. It’s a very bi file with the lot of parent and child node. We have shown the output in table format as asked in question from country.xml using Ajax.

We write the Ajax part of code in the $(document).ready( function () {} to load the code for compilation. The major steps in this question was getting the data from the four node and by calling them with jQuery. So name was the child node and capital was one of the attribute of the country node. Unemployment and GDP total was not in every country so we had to write the if else condition to check whether that country has this node or not and if not than print N/A there.

Table

Description automatically generated

# Question 2,3,4,6: Use JavaScript/jQuery to process JSON data

(Describe the major steps for designing the JavaScript function(s), how you test this program, add some screenshots of the output)

**Question-2:**

**Output:**

**Graphical user interface, table

Description automatically generated**

**Json Validator:**

**Graphical user interface, text, application

Description automatically generated**

**Function and Body:**

**Text

Description automatically generated**

We are using a script tag to get the jquery methods and functions that needs to be used from the server using the link.

Next we using document.ready() method so that the code written inside it will be executed only after the html page is loaded and we are giving a function as a parameter.

We are taking country.json file to process the json data in it.

We are taking the country name from the user through an input box and assigning the value to the countryname variable.

Next, I looped through the entire json data and getting the json data where the country name is matched with the user given ‘countryname’ and processing the json data to get the required data.

As we have 4 columns:

**1.Province Name:**

I’m checking whether the province is there or not and looping through the province with its length, and displaying the province name .

**2. Local Name:**

After getting the province name, I’m searching whether there is a local name or not. If it is present, I’m printing the value to the table or saying that no local name is there.

Text

Description automatically generated

**3. Population:**

As for the population first I’m checking whether there is population element or not if it is there then I’m looping through the population array and searching for the year, if the year is (= 2011) I’m printing the value otherwise saying that there is no value for year 2011.

**Text

Description automatically generated**

**4. No of cities in province:**

For counting the no of cities I’m using a variable which is given a default value of ‘0’. First I’m checking whether there are cities or not, if the cities are there then the I’m looping through the array to get the length.

**Body Code:**

**A screenshot of a computer

Description automatically generated with medium confidence**

A label is given which specifies the user to Enter a country name

An input text box is also given to take the country name from the user .

A button is displayed so that if user clicks the button the Data regarding the country is displayed in the table format as designed in the jquery in the head tag.

# Question 3:-

For the question-3 first we have to register for the free API in order to aces them for displaying the Exchange rate of each country currency vs EURO or USD. We register with the fixer.io for the free API got the api key to access their data. After that to get the data of different country with their name and country currency rate vs EURO, we simply write that link to call the API from the html and wrote $.each jQuery method for each country and called the country and rate nodes.

Table

Description automatically generated with medium confidence

**Question-4:**

**Output:**

**Graphical user interface, website

Description automatically generated**

**Function and Body Code:**

**Text

Description automatically generated**

We are using a script tag to get the jquery methods and functions that needs to be used from the server using the link.

Next we using document.ready() method so that the code written inside it will be executed only after the html page is loaded and we are giving a function as a parameter.

We are taking country-data.json file to process the json data in it.

We are taking the country name from the user through an input box and assigning the value to the countryname variable.

Next, I looped through the entire json data and getting the json data where the country name is matched with the user given ‘countryname’ and processing the json data to get the required data.

As we have 4 columns:

**Region**

**Capital**

**Currency\_code**

**Language\_native\_name**

These 4 columns or data can be fetched easily as the json data is not complicated.

We need to call the names from the json data and put them in table data.

After completing the collection of data into the table variable we are inserting it into the inner html of the <p> tag having id=demo

A screenshot of a computer

Description automatically generated with medium confidence

A label is given which specifies the user to Enter a country name

An input text box is also given to take the country name from the user .

A button is displayed so that if user clicks the button the Data regarding the country is displayed in the table format as designed in the jquery in the head tag.

**Question-6:**

Graphical user interface, website

Description automatically generated

**Function and body:**

**Text

Description automatically generated**

We are using a script tag to get the jquery methods and functions that needs to be used from the server using the link.

Next we using document.ready() method so that the code written inside it will be executed only after the html page is loaded and we are giving a function as a parameter.

Instead of using the json file directly here we should use the link provided to get the json data needed.

We are taking the country name from the user through an input box and assigning the value to the countryname variable.

Next, I looped through the entire json data and getting the json data where the country name is matched with the user given ‘countryname’ and processing the json data to get the required data.

**Getting the Currency Code:**

**Text

Description automatically generated**

To get the currency exchange rate vs euro we need the API used in the question 3.

So by using $.getJson() I connected with the API and the data is taken into the variable exchangerates which is inside the function so that the code inside that function can use the data.

I’m iterating through the entire exchangerates data using $. each() and the countrycode and rate are the variables storing the data while iterating through the file.

I’m comparing the country code with the code which is taken from the current json file i.e json[i].currencies[0].code, and if the condition satisfies it returns the rate into the table.

**Getting the Border Names:**

**Text

Description automatically generated**

This is a challenging task which I’ve done for 2 days to get the solution.

First I’m iterating through the border codes that are returned from the current json file and inside I’m using getJson() to get the json file by giving the country code as the input in the link and then I’m getting the name from that json file and storing in a variable.

After looping through every border code the names are stored in the variable borders, and also a relevant ‘,’ or ‘.’ Is given after the name is entered based on the length of the border codes.

Finally, the border names are returned to the table by taking the id of that particular table data tag and returned there.

Same Is done with the currency code in case of displaying the output into the table.

A screenshot of a computer

Description automatically generated with medium confidence

A label is given which specifies the user to Enter a country name

An input text box is also given to take the country name from the user .

A button is displayed so that if user clicks the button the Data regarding the country is displayed in the table format as designed in the jquery in the head tag.

# Question 5 and 7(Bonus) : XSLT and XPath

(Describe the major steps for designing the XSLT. How did you use XPath in the XSLT?

Add screenshot of the XPath testing and the output of XSLT)

# Question 5 :-

In this question we have to just redesign question-1 by using XSLT/XPath. So this was more of a simple question since we have done this type of question before in the semester. We use for-each loop and value-of methods to go iterate through every and get value from the desired node. Again to check whether the unemployment and gdp\_total node are there or not we wrote the if test method so if the value of node is not zero then print the data otherwise print N/A. The output for this question look same as the output of the first question.

Table

Description automatically generated

# Summary

(Describe how did you divide the work, share your feedback about this project like new points that you learn, challenges, …)

**Sairam Avala:** Questions 2, 4, 6

The New points that I’ve learnt are the jQuery methods and how they work. Question 6 is very challenging where we should display the whole country name, which is quite a task.

**Chirag Jaswanth Kumar:** Questions 1,3,5

Understanding the country.xml data file is hard and doing the 1st question is also quite challenging.

We divided the work in the following way because we can work on the similar questions so that they can be completed easily, and work load is balanced well.