Module: Web Services (WAT 2124C)

Coursework

Working with XML & JSON Data Formats

You need to design and implement a simple web application which provides Earthquake related information to its users. Earthquake information are available in XML (also known as QuakeML) and JSON (also known as GeoJson) from the United States Geological Survey (USGS) Web site. You can gather further information about the XML and JSON files from the following URLS:
XML (QuakeML): https://earthquake.usgs.gov/earthquakes/feed/v1.0/quakeml.php
JSON (GeoJson): https://earthquake.usgs.gov/earthquakes/feed/v1.0/geojson.php

Your first task consists of accessing, and manually saving the files which provide earthquake details in XML and JSON. The links below provide earthquake details in QuakeML and GeoJson format, for the period 15 January 2020 from 00:00 to 12:00

- **QuakeML:**https://earthquake.usgs.gov/fdsnws/event/1/query?format=quakeml&starttime=2020-01-15T00:00:00&endtime=2020-01-15T12:00:00

- **GeoJson**:https://earthquake.usgs.gov/fdsnws/event/1/query?format=geojson&starttime=2020-01-15T00:00:00&endtime=2020-01-15T12:00:00

Your web application must be implemented in HTML5, CSS3, JS and PHP for server-side scripting. It is also recommended that you use the SimpleXML parser to read and process information from the QuakeML file and either json_decode function from PHP or JavaScript for GeoJson. The main aim of the website is to demonstrate your ability to work with an XML and JSON.

Your web app must read the QuakeML and GeoJson files and properly list all earthquakes therein (you may consider a page for XML and another page for Json). You must also provide important details for each earthquake (e.g. magnitude, location, etc). You must also define another **two** relevant functionalities, using each file format, i.e. Two functionalities based on the QuakeML file and two other functionalities (different from XML functionalities) based on GeoJson format.

Submission

You need to submit a report which completely describes your approach: functionalities, design, implementation(codes) and testing (screen shots). You must also submit a video of maximum 8 minutes which serves as a demonstration for your application whereby you **explain your codes** in as much details as possible. The demonstration video must also include in the lower left corner a recording of you describing the demonstration. You will submit your work in google classroom by uploading your report and video (or link to the video file). Avoid compressing your submission (.zip/.rar), as they will **not be accepted and cannot be marked**.
You may consider the following software for your recording: https://screencast-o-matic.com/
Submission date: Wednesday 16 JUNE 2021 before 9h00(AM)

Marking Scheme (50 marks/50%)

- User Interface Design: 5 marks
- Ability to display/list all earthquakes **(in XML and JSON)**: 2 x 5 marks
- Proper implementation of four relevant functionalities (different ones for each data format): 20 marks
- Report presentation & formatting: 5 marks
- Video demonstration with code explanations: 10 marks
- Plagiarism will be severely penalised.

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