Assessment 3 - Web Programming
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GitHub Link: https://github.com/RPaivaniemi/assessment3/tree/main
Render Link: https://assessment3.onrender.com

In the beginning of building my app, the first step was to process the data, and build tests to ensure that the data processing was working. I went with the Test Driven Development approach (*Beck, K., 2022*). My approach to this application was to start with a small chunk of data, and then once everything worked, alongside testing, using the foundations to add the rest of the data was simpler. I began by creating a parse file for only one of the .csv spreadsheets I was going to use, going through one parse of data and testing that the parse was compiled successfully. Once I had succeeded to compile this data, I proceeded with the single data source and built the app, as well as a basic index.html file to display the data. The first step for me was to compile a list of countries in one csv, successfully parse it into a database and then display the country on the web application. When I was successfully building and displaying rudimentary data from the database on the web application, I repeated the process with the rest of the data.

I then wanted to finish the index page, so I fine tuned the index template with basic html and css to view the data (*Duckett, J., 2011*), as well as being able to control which data was showing; I now had a front page which showed the countries, and some benchmark data about them. I then made a categorised library with buttons at the top of the page to sort by continent. This proved to be time consuming because of the approach I took earlier; the data was compiling and displaying on the web page but because of the foundation I built, I had to spend a lot of time to get the data to display in a table format rather than individual chunks of data.

After this, I began working on the second, ‘show’, page which could be accessed by clicking on a country. Because of the foundation I had built earlier within the parse file, getting the rest of the data into the database was not too difficult, however linking the data together proved challenging. A challenge I faced was actually displaying the correct data of a chosen country from the individual country database; my foundation code was able to access the database however there was nothing which would link the row of data to a country that an user selects. For this I took inspiration from the work we had done in class with the polar bears application (*Scharlau, B., 2021*). The knowledge I received from working with that application was very relevant when linking the data from the database to show individual aspects of the data. Eventually I managed to get the app working as I wanted.

Once the fundamental application was working, I spent more time on the templates and the html/CSS aspects to make the application easier to navigate and use. This is where I realised I had made another mistake; the data was not parsed to show up as a table so when it came to layout on the page, I had to spend a lot of time using trial and error to stop the columns from warping around. When I was happy with the overall look and functionality of the application, I uploaded and deployed the project on Render. This turned out a bit more difficult, as I had not programmed the application to run from another source, and I was manually inputting environments and run commands. This was the first time having to take advantage of a ‘requirements’ file as well as root path/launch commands, however in the end I managed to get it working.