Champlain College - Lennoxville
Final project: Implementation

PROGRAM:	420.B0 Computer Science Technology	
COURSE:	Transactional Web Applications 1	
COURSE CODE:	420-430-LE	
WEIGHT:	15% of the final score (7% out of 29% for the final project)	
SEMESTER:	Winter 2023	
INSTRUCTOR:	Francis Gauthier fgauthier@crcmail.net	Office C-239

Context

You are a small team of consultants specialized in web applications. You are known for producing web applications managing a lot of data.
Last week, you were approached by a large governmental firm called GreenLab that specializes in greenhouse gas emissions, and they are currently developing a technology to reduce the CO_2 emissions of many large industry companies. They are about to open a new branch focused on applications to visualize the benefits of their new technology. They will offer a high-paying contract for 2 to 3 consultants for the next 3 years. Your last contract is about to expired, therefore your team will apply for the contract.

An interview and demonstration will happen on May 9th. In the meantime, you have a few weeks to prepare a solid web application that will impress the deciders of GreenLab that you are the best team for the job.

Main requirements

Registration and login

The registration and login page must be publicly accessible.

The registration page should ask for this information:

- Email
- Password
- Confirm password
- Date of birth

- Field of work (dropdown)
    - Should contain minimally *Education, Information Technology, Health and Social Services, Manufacturing*

The login page should ask for:

- Email
- Password

The home page

The home page should only be accessible to logged in users.

The home page should provide a simple way to access the graph view page. (Explore the data)

The home page should provide quick and simple access to previously saved graphs.

Through a list, the home page should provide access to list of saved graphs. The interface should list:

- The saved graph **name**
- A button to consult the graph
    - On click, the user should be redirected to the graph page, with the controls set to the right values saved (countries, emission type, count, etc.).
- A button to delete the graph presets.
    - On click, ask for confirmation
    - On click, the graph presets should be deleted from the database.

See Appendix 1 for a mock-up.

The graph view page

The graph page should only be accessible to logged in users.

The graph view should display one graph displaying some information about greenhouse gas emissions.

The graph content

The **graph** should contain minimally:

- A title
- Some labels (x and y axis)
- Some data plot

The content of the graph is based on the database application course requirements.

The graph update controls

Around the graph, there should be some **controls**, such as:

- A list of countries to select

    - At least ten different countries should be listed
- Two dropdown menus, controlling:
    - The emission type (CO_2, methane, nitrous oxide)
    - The count type (per country, capita or $ of GDP)
- A checkbox for “relative to world” total

Careful: some combination of parameters should not be available for select. Consult the database application directives for this.

Finally, add one control, such as a button, to **update** the graph to the chosen parameters.
On click, the button should call the server and display a new, updated graph.

The graph save controls

At the bottom of the graph, there should be two controls to provide the ability to save the graph.

1. Download the graph: offer the possibility to save the graph to an image file directly in the downloads folder of the device.

2. Save the graph: offer the possibility to save the presets of the graph parameters (countries, emission type, count, etc.).
   The save button should prompt a modal window to enter a name for the graph.
   The saved graph should then be saved into a database collection and be displayed on the home page for quick reference.

See Appendix 1 for a mock-up.

Deliverables

Final submission - May 9th, 8:00 AM

Finalized application completed and pushed through git.

Oral presentations - May 9th - More details next week…

Submission

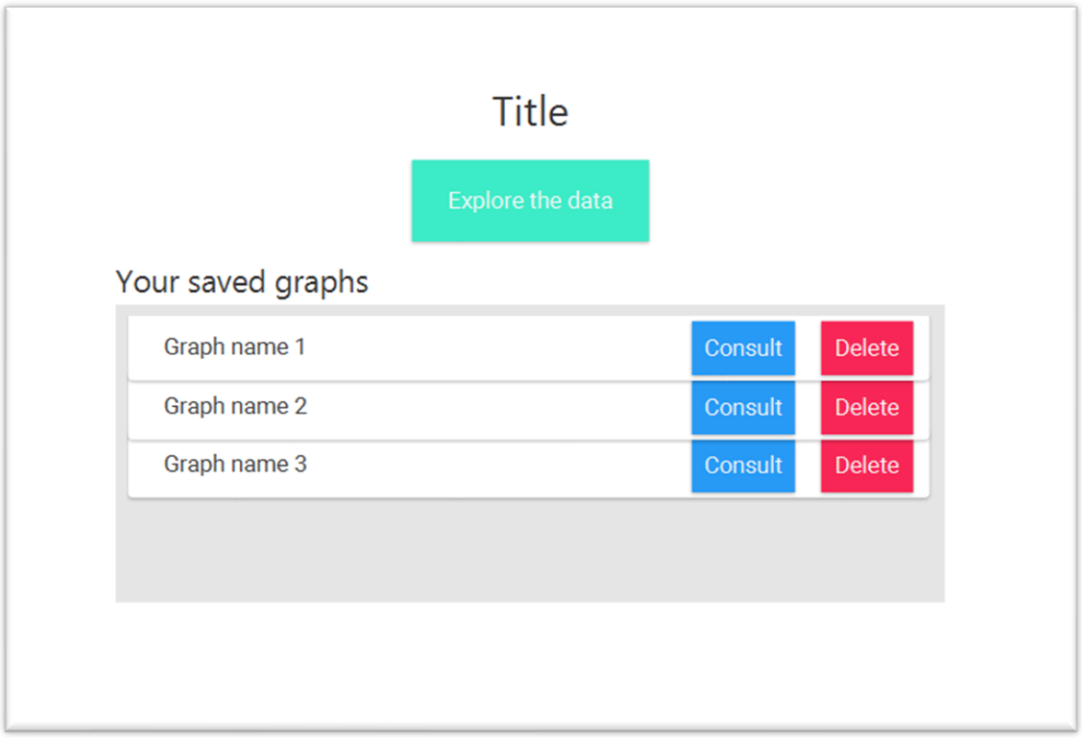
Submission will be made through a Github repository.
Create a private repository and add the members of your team. Also, add me as a collaborator (**frangauthier** username)
Your project must contain many files, but these files are mandatory:
At the root of the project:

- Your source code for your application, **organized in different folders**

The deadline for the proof of concept is **Tuesday April 25th 2023**, End of Day.

Appendix 1 - mock-ups

Home page



Graph page