**Champlain College - Lennoxville**

**Final project: An open-source web application**

|  |  |  |  |
| --- | --- | --- | --- |
| **PROGRAM:** | 420.B0 Computer Science Technology | | |
| **COURSE:** | Transactional Web Applications 2 | | |
| **COURSE CODE:** | 420-530-LE | | |
| **WEIGHT:** | 20% of the final score | | |
| **SEMESTER:** | Fall 2023 | | |
| **INSTRUCTOR:** | Francis Gauthier  [fgauthier@crcmail.net](mailto:fgauthier@crcmail.net) | Office C-239 |  |

Project overview

The goal of the project will be to use some code from an open-source web application. The students will install and document the application. After a review of the application, they will come up with a CI/CD pipeline with stages to build, prepare, enhance, and deploy the web application.  
This project is meant as a complete review and application of the concepts seen in this course so far. It is also an opportunity to showcase one’s ability to understand any web application based on our current knowledge.

## Working in Teams

This project should be done in teams of two. If a student wants to work alone on the project, they can, but the scope will be only slightly reduced.  
Each team must be approved by the teacher to avoid any problematic collaboration.

Team approbation and application validated by Nov. 27th 2023.

# Part 1 - Locate, install, and document the application

*Intended timeline: Nov. 20th - Nov. 30th*

## Locate

Your first locate an open-source web application publicly available online. Verify that the license allows public access.

*You will be evaluated on:*

* The complexity of the web stack (backend only, frontend only or full-stack, with DB or no DB)
* The complexity of the application chosen (number of features, technologies used)

\**Think about part 2 of the project. A simpler application can result in losing points for this task but might make it easier to achieve the part 2 of the project. Choose one project within your reach.*

## Install

Next, you will be to clone the application on your machine. Then, you must install and run the application locally.

To do so:

* Follow the documentation provided by the application owners (usually in Readme.md)
* Install the required dependencies
* Provide the environment variables needed (if any)
* Provide a database connection (if any)
* Run the application locally

*You will be evaluated on:*

* The ability to run the application locally

## Document

Next, you should document that the application does.

Using a text editor or any other tools, write a summary of:

* What is the general purpose of the application?
* If the application has a back-end:
  + The routes available on the API
  + The purpose of these routes
* If the application has a front-end:
  + The different views (take screenshots to document them)
  + What are the actions possible?
  + Is there authentication required?
* If the application has a database:
  + The different collections/table names
  + What are the models used in the database?

*You will be evaluated on:*

* The thoroughness of the documentation
* The exactitude of the documentation
* The format/organization of the documentation

# Part 2 - CI/CD pipeline

*Intended timeline: Nov. 30th - Dec. 11th*

Each team will then have to build a CI/CD pipeline on GitLab.

To do so:

* Clone the application
* Create a new GitLab project
* Add the remote to your repository cloned (git remote add …)
* Push on GitLab

## Stages required

**For a team of two:**

* (Required) Install stage (setting up, installing node\_modules, etc.)
* At least **two** of:
  + A Lint stage
  + A documentation stage (produces automatic documentation based on annotations)
  + A test stage (unit tests)
  + A test stage (integration tests)
* (Required) Build stage (preparing resources for the deployment stage)
* (Required) Deploy stage (deploying the web application on AWS)

**For students working alone:**

* (Required) Install stage (setting up, installing node\_modules, etc.)
* At least **one** of:
  + A Lint stage
  + A documentation stage (produces automatic documentation based on annotations)
  + A test stage (unit tests)
  + A test stage (integration tests)
* (Required) Build stage (preparing resources for the deployment stage)
* (Required) Deploy stage (deploying the web application on AWS)

*More details to come on Nov. 27th…*

# Part 3 - Presentations

*Intended date: Dec. 11th*

Each team will do a small presentation to present the result of the application that they worked on.

*More details to come…*