Algonquin College - Business Intelligence System Infrastructure

CST2216 Individual Term Project

Modularizing and Deploying ML Code

In this project, you will take the machine learning code you developed in Jupyter Notebook in Level 1 and modularize it using VS Code (or other IDE of your choice) and deploy the models with Streamlit Cloud. This will involve modularizing your code and ensuring that your code is efficient, readable, and maintainable.

Requirements:

1. **Modularize your code**: Break down your Jupyter Notebook code into separate modules or functions, each with a specific purpose. This will make your code more organized, reusable, and easier to maintain.
2. **Create a VS Code project**: Set up a new VS Code project and create a folder structure that reflects the modularization of your code.
3. **Ensure code quality**: Ensure that your code adheres to best practices in terms of coding style, documentation, and testing.
4. **Implement logging and error handling**: Add logging and error handling mechanisms to your code to ensure that it can run robustly in a production environment.
5. **Create a README file**: Write a README file that explains the purpose of your code, how to run it, and any dependencies or requirements.
6. Using Streamlit, build an app and deploy it on Streamlit Cloud
7. **Publish your code**: Publish your VS Code project folder, including all code files, modules, and the README file to GitHub.
8. **Demo the working code:** During the last week, prior to your final exams week, demo your code.
9. **Submission:** In a word file, copy all individual links to your GitHub projects repository. There should be 4 links for 4 project codes mentioned below.

Level 1:

Week 10 - Real_Estate_Solution.ipynb

Week 11 - Loan_Eligibility_Model_Solution.ipynb

Week 12 - Unsupervised_Clustering_Solution.ipynb

Week 13 - UCLA - Neural_Networks_Solution.ipynb

Project due date is April 13th, 11:59 pm. No extension in any form will be provided. It is your duty to ensure that you submit the correct file, and it displays the links that I should be able to be able to access. Any blank file or missing submission will incur 50% penalty.

Project Rubric (Total: 20%)

1. **Code Modularization (4%)**

   Code is organized into clear, reusable modules or functions.

2. **VS Code Project Structure (4%)**

   Project has a well-structured folder organization in VS Code.

3. **Code Quality, Logging, and Error Handling (4%)**

   Follows best coding practices, with proper logging and error handling.

4. **README Documentation & GitHub Publishing (4%)**

   Clear README with setup instructions and complete GitHub repository.

5. **Streamlit App Development & Demo (4%)**

   Deployed Streamlit app and effective project demonstration.