Python Programming – Final Project.
COP4045 - Fall 2018 - Dr. Jaramillo

Due: December 2nd, 11:59pm 20% Final Grade

Final Project will require the submission of the parts – Project document, Project Source Files in a Zipfile and Project Presentation Video. All three of these will need to be uploaded on Canvas as part of the submission. DO NOT BE LATE WITH YOUR SUBMISSION. Don't put yourself or me in that situation. Start working on the project as soon as possible and ask questions on the discussion forum if you have any uncertainties. Grades will be based on completeness of each section, not just on submission. In other words, if you do a really good job, you will more than likely get a good grade, on the other hand, any incomplete or sloppy work will more than likely get a mediocre or poor grade. This project will help you see how well you absorbed the material in the class.

Project deliverables:

1. Project Design – 15%
Project needs to use object-oriented programming as covered in section 3 (ch14-16) in the book and the project document needs to include a high-level design of your application that includes UML class diagrams showing their relationships. Describe the use-case and application flow. This will all go in as part of the Project Document and also be presented as part of the presentation.

2. Project Code – 50%
Project needs to be written in a modular fashion as we learned through course. You need to use modules and import them into the main program. Your classes have to be in their own module along with its methods. Code should be properly structured and documented separated into separate modules/files. There should be use of **object-oriented** programming as covered in section 3 - ch14/16 in the book. Code needs to be complete and program should run as well. In the case where you are not able to complete, make sure you include the appropriate functions and also explain in the Project Document your results.

3. Push Code to GitHub & Deploy to Cloud – 10%
Project code needs to be stored in GitHub and provide the link in your Project Document and Presentation. As part of the final step, you will also need to deploy your project to IBM Cloud or other of your choice and you need to provide the link to your running application in your Project Document and Presentation.

4. Project Document – 15%
Treat this section as if it were like a term paper. Give an introduction to your project, then proceed to give the whole description of the application, use case and flow. Talk about the work that you did what was involved and any challenges you encounter. Feel free to include screenshots of your program and descriptions of the running program. Do not include source code into this document. Finally, include a conclusion about the project and also include a description of future work that you would do if you were to continue with the project.

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5. Project Presentation – 10%
Create a short video presentation up to 5 minutes of your project and include a one-page summary slide of the project which you will use in the video presentation. Talk about the project specification, design and finally show the running of the application.

Project Topics - select one of the two options below:

Application Option #1: Shopping Cart
Enhance the shopping cart application from Chapter 16 and implement it using GUI or Web and Sqlite3 as learned in chapters 17 and 18. Create and include a SQL script that populates the database and use the prepopulated inventory for the shopping cart actions. You will need to design a UI that allows the user to view the products available and then be able to add / remove items from the cart. User will have the option to checkout from the cart and place the order, which will then show a screen with the order placed along with the total cost.

Application Option #2: Cloud + Cognitive Services
Students can come up with their own idea for a project that has similar level of complexity with Option #1. The implementation must use Web UI and deploy to a Cloud Service like IBM Cloud. The application can use Sqlite3 Database or one of the cloud databases or as an alternative use one or more of the Cloud/Cognitive Services. Application must implement at least 3 classes and follow an objected oriented approach.