Intro to Programming (Python)

Assignment 08

# Overview

In this activity, you learn about classes, the components inside of them, and how you use them. You also download, install, and use GitHub Desktop.

This assignment includes the following tasks:

1. Watch the module videos.
2. Read Web articles
3. Read a chapter in your book.
4. Apply your knowledge.
5. Document your knowledge.
6. Watch Some Videos on GitHub
7. Post files to GitHub using GitHub Desktop (Optional).
8. Create a GitHub webpage (Optional).
9. Submit your work.

**Tip:** Consider the following questions while you work through the module to help you focus:

* What is the difference between a class and the objects made from a class?
* What are the components that make up the standard pattern of a class?
* What is the purpose of a class constructor?
* When do you use the keyword "self?"
* When do you use the keyword "@staticmethod?"
* How are fields, attributes, and property functions related?
* What is the difference between a property and a method?
* Why do you include a docstring in a class?
* What is the difference between Git and GitHub?
* What is GitHub Desktop?

# Assignment Steps

The following assignment steps ask you to read about, perform, and write about programming.

***Note:*** *Course assignments help you learn through* ***reading****,* ***watching*** *demonstrations,* ***performing*** *programming in Python, and reflecting on what you learned through* ***writing****. You are strongly encouraged to continue your learning by experimentation.*

## Step 1 - Watch my Video Lecture

Please watch my course lecture for this module. You can find this module lecture(s) here: [ITFdn 110 - Python Course Videos](https://youtube.com/playlist?list=PLfycUyp06LG9fZllIqBrxLcNV4CR50HEX)

Please watch these additional vidoes as well:

* [Git, GitHub, & GitHub Desktop for beginners](https://youtu.be/8Dd7KRpKeaE)
* [GitHub Desktop Quick Intro For Windows](https://youtu.be/77W2JSL7-r8)

## Step 2 - Read Web Articles

Please review the following web pages. These are shorter than the book and provide online resources you can use later.

* <https://en.wikibooks.org/wiki/A_Beginner%27s_Python_Tutorial/Classes> (external site)

## Step 3 - Read a book chapter

Please **read chapter eight** in your textbook. You **do not have to perform the exercises or type in the code**, but it is best to open the script files as you read about them. You can find the downloadable **book files** **on Canvas** for your convenience.

***Important:*** *You will still need to read and watch chapters, articles, and videos in modules 9 and 10. However, the Apply and Document your knowledge part of this assignment will count for assignments 9 and 10.*

## Step 4 - Apply your knowledge

Now that you understand what classes are, you will **create a script with three classes**. Using the PyCharm IDE, modify the provided script that manages a "Product Price list" using functions and Classes. The script must read, add, and delete data within a text file. Store the data in a two-dimensional list, where each task and priority are a dictionary "row" of data, and each row is part of the list "table" of data. Let the user repeatedly add or delete data within the list and save the changes to a text file. The code must include error handling as well. This assignment is like the last one, but different enough to be a challenge.

1. Create a Folder

Create a new **sub-folder called Assignment08** inside the \_PythonClass folder.

1. Create a new Project in PyCharm

Create a **new project** in PyCharm that uses the \_PythonClass\Assignment08 folder as its location

1. Add Code to the Script

I have **provided starter** code in the file called **"Assigment08-Starter.py" on Canvas**. Currently, the code does nothing, but does it include pseudo-code (Listing 1). Your task is to **read and understand the pseudo-code, then add code to make the application work**. Make sure to **include error handling!**

1. Run Your Script

With the script created in its proper location, run the script in **BOTH** PyCharm and an OS command/shell window and capture images of it working on your computer.

## Step 5 - Document your knowledge

After you have created and tested your Python script:

1. **Create** a document describing **the steps you took in performing this assignment**.
2. **Use** screenshots and code samples to explain the process, just as was done in your book, my programming notes, and the web pages you reviewed.
3. **Make sure** the document is in a PDF file.

**Note**: Make sure you put it in proper, professional level formatting! It does not have to be perfect, but if you turn in a simple blob of text, you won't get credit for it! Here is a link that may help you understand what I am looking for: https://youtu.be/9ojhSW9ljjo (External Site)

## Step 6 - Submit your work

Place your documents and python script in the Assignment08 folder. Zip this folder into a “.zip” file, then upload the .zip file to the class assignment page. (You are **not** turning in anything for GitHub this time!) **Submit your Python script and knowledge document to Canvas** for grading.

Congratulations! You are done!