Intro to Programming (Python)

Assignment 08 - Final

# 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.

We are trying to answer the following questions:

* 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?

***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.*

# 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 the Module Videos

Please **watch the course video**, found **on Canvas under modules -> module08**. **Then watch these two videos as well.**

* [**Foundations of Python Module-08 Playlist**](https://youtube.com/playlist?list=PLfycUyp06LG8Ev2PwrOxBMBjZLp-oYuj-)

## 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 - Part of the Final (130 points)

Now that you understand what classes are, you **create a script with three classes**.

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 6 - Document your knowledge - Part of the Final (110 points)

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 07 - Write and Post a Report - Part of the Final (50 points)

At the end of the final, **take some time and reflect on your progress** and ask yourself; "what did I learn in this course that will help me going forward?"

After that:

1. Write a one-page report on what you learned during this class. It can be a partial page, but let's make it a bit more than a single paragraph. Tell me what you discovered about programming, the learning process, and programming specifically. Save your document as a PDF file and turn it in with the other files.
2. Once your Word document is written, **post its contents (not the file) on the Discussion board** (Lessons Learned). This process helps everyone get a chance to see how others experienced the course!

## Step 08 - Submit your work (The last day of class.) - Part of the Final (10)

Place your documents and python script in the Assignment08-Final 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, knowledge document, and lessons learned document to Canvas** for grading.

Congratulations! You are done!

**Important: The Final cannot be late!**

Each quarter, students forget that they must submit their work no later than the last day of the course. If it is late, you will lose out on all 300 points. So, turn in what you have, even if it is not completely

**Pay attention to this or you will likely fail the course!**