**Assignment 7: Classes and Objects**

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**Abstract**

Many a times the same code can be repeated several times in the script file. To avoid repetition, the same code can be used once in a function definition and the function can be called several times. Custom classes are written to create multiple instances of it and perform different operations on the instances using functions.

Keywords: Classes, Functions, Global Variables.

**Assignment 7: Classes and Objects**

Assignment 7 is the seventh coding assignment of the IT Fundamentals (IT FDN 110 A) course I am taking at University of Washington. The goal of this assignment is to help me understand the usage of objects. Furthermore, I will be re-factoring my code using constructors and class methods in the assignment. This the [link](https://github.com/ruchanimbalkar/IntroToProg-Python-Mod07) to my GitHub account for Assignment 07.

**Reflection**

I used classes in Module 06 of this course. We used class methods (or functions) to perform file operations. In Assignment 06, I re-organized the code to include classes and class methods that performed the same operations that were written in the previous assignment. I learnt about code reusability and modularity in Assignment 06. In this assignment (07), I closely applied the Separation of Patterns (SoC) using the data, processing, and presentation sections. According to Professor Root, “ Classes are designed to focus on either data, processing, or presentation(input or output)” (2024). In Module 07, I learnt about Object Oriented Programming (OOP) and its feature like Isolation, Reusability and Abstraction while creating more detailed Classes. In this assignment, I created three types of classes, and each class had the purpose of managing data, or processing data in the file and to the file and presentation of data on the console. Professor Root states that, “While processing and presentation classes usually have methods, Data Classes typically have Attributes, Constructors, Properties, in addition to Methods.” (2024).

**Program Summary**

I started assignment 07 using the starter file provided in module 07 files, and I updated the header script with my name in it.

**Figure 1**

*Assignment 07 Script Header is updated with my name*

A screenshot of a computer program

Description automatically generated

After that I re-organized the code with some sections using comments and added the two classes “FileProcessor” and “Person” as shown in figure 2.

**Figure 2**

*Assignment 07 Added two classes “FileProcessor” and “Person”*

A screenshot of a computer program

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As I was learning the module notes provided by Professor root, and working on my code, I realized that my code will have three classes for different purposes. The “Student” class would store student data. The “Person” class would store person data. The “FileProcessor” class would process file data and the “IO” class would present data on the console. So, I added two more classes (“Student” and “IO” to my code).

**Figure 3**

*Assignment 07 Added two additional classes “Student” and “IO”*

A screen shot of a computer

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I added the attributes first\_name, last\_name and course\_name to the “Student” class.

**Figure 4**

*Assignment 07 Added attributes to the class “Student”*

A red circle on a black background

Description automatically generated

**References**

Randall, R.(n.d.). *IT Fundamentals* *110 A* [MOOC]. University of Washington. [Foundations of Programming (Python) - UW Professional & Continuing Education](https://www.pce.uw.edu/courses/foundations-of-programming-python)