Loren Ormerod
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IT FDN 110 B
Assignment08

Purpose:

Document actions taken and knowledge gained while working through Module08 course content.

Weekly Content:

This week we began tackling Object-oriented Programming (OOP – an appropriate acronym as one is prone to make this sound a lot while learning this content).

Class vs. Object

A class is used to define object properties, including value ranges and default values. In other words, it is the blueprint for an object. [1] An object is a member/instance of a class. Object property values are defined either via default settings or explicit assignment. [2]

Constructor

OOP has a special method called Constructors. A constructor is used to pre-populate default values to fields in a class. They can also be used to ensure appropriate datatypes are used in each field.

```
    # -- Constructors -- #
    def __init__(self,pos, ttl, lgth):
        # -- Attributes -- #
        self.position = pos
        self.title = ttl
        self.length = lgth
```

Figure 1 - Constructor __init__ LAB08_C example

Keywords

The python community collectively uses “self” as a universal keyword for the first parameter in every method. The keyword, upon receiving a method call from an object, tells the associated class which objects to run the methods. It is possible to use keywords other than “self”, but this could be confusing to programmers that read your code as “self” is the standard practice method.

Property vs. Method

We also began working with Properties and Methods. These are concepts that are easy to confused. A property is implicitly called using calling convention, through compile and runtime. Whereas a method is a chunk of code that contains several statements, methods must be called explicitly in a program.

We specifically worked with getter and setter properties in Module 08. A getter property allows you to add formatting for fields/attributes. Setter properties are used to add validations and error handling around statements. They can also be used to evaluate parameters that are being passed into an argument. For example, in Figure 2 below, we are using the getter (@property) to call and return

[1] FDN_Py_Module_08.pdf
[2] https://www.ncl.ucar.edu/Document/HLUs/User_Guide/classes/classoview.shtml

position. @Position.setter is used to evaluate the value of position, in this case, position value must be an integer, if not the Exception will print to the user.

```
    # -- Properties -- #
    @property
    def position(self):
        return self.__position

    @position.setter
    def position(self, value):
        if type(value)== int:
            self.__position = value
        else:
            raise Exception('Position must be an integer')
```

Figure 2 - getter/setter LAB08_D example

Summary

Overall, Object oriented programming is confusing but fascinating. I can see how it would make script writing scalable for larger data sets. It is something I look forward to sinking my teeth into further. Appendix I holds screenshots of my executed code in Anaconda Prompt, the full script is available on GitHub.

APPENDIX I

```
Menu

[l] load Inventory from file
[a] Add CD
[i] Display Current Inventory
[s] Save Inventory to file
[x] exit

Which operation would you like to perform? [l, a, i, s or x]: i


======= The Current Inventory: =======
ID      CD Title         (by: Artist)

1,       sdf     (by: fds)
2,       asdf    (by: gds)
======================================
```

```
Menu

[l] load Inventory from file
[a] Add CD
[i] Display Current Inventory
[s] Save Inventory to file
[x] exit

Which operation would you like to perform? [l, a, i, s or x]: a

Enter ID: 3
What is the CD's title? Hi
What is the Artist's name? There

======= The Current Inventory: =======
ID      CD Title         (by: Artist)

1,       sdf     (by: fds)
2,       asdf    (by: gds)
3,       Hi      (by: There)
======================================
```

```
Which operation would you like to perform? [l, a, i, s or x]: s


======= The Current Inventory: =======
ID      CD Title         (by: Artist)

1,       sdf     (by: fds)
2,       asdf    (by: gds)
3,       Hi      (by: There)
======================================

Save this inventory to file? [y/n] y
CD Inventory has been saved to "CDInventory.txt"
```