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IT FDN 110 A

Module 8

https://github.com/vrplkv/IntroToProg-Python-Mod07.git

## Assignment08 task

Text

Description automatically generated

Figure 1: A screenshot of the script running from a command shell.

Text

Description automatically generated

Figure 2: A screenshot of the script running from Pycharm.

Graphical user interface, text, application

Description automatically generated

Figure 3: A screenshot of the data file

## Knowledge documentation

The main objective of this assignment was to learn more about classes and how to use them.

### Classes

The purpose of classes is to group data and functions together. Classes can be used directly to focus on processing data or indirectly to focus on storing data by creating an object instance. Multiple object instances can be stored in memory.

Classes have:

* **Fields**: variables or constants
* **Constructors:** special functions that automatically run when a new object is created
  + Python automatically calls the “\_\_init\_\_” method and passes arguments to it
  + Self keyword is used in the constructor for the object instance to refer to itself

**Destructors:** special functions that automatically runs when an object is removed from memory

* + **Attributes:** virtual fields that hold internal data
* **Properties:** special functions used to manage fields or attribute data
  + two types of properties are typically made, Getters(Accessors) and Setters(Mutators)
    - *Setters* – code for validation and error handling. If a passed value is valid, then the field or attribute is assigned
      * @name\_of\_method.setter
    - Getters – code to format a field’s or attribute’s data
      * @property
      * Hide the attribute using 2 underscores before the name to make it private and not for direct use.
* **Methods:** functions that organize processing statements into named groups
  + Methods can also be private using 2 underscores. This is useful for counting objects created in a class which is useful for manually cleaning memory. Python is self-cleaning

Abstraction means to only work with data in a class through a method or property to avoid internal changes to fields or attributes.

## Summary

For this assignment I used classes to both process data with static methods and as a way to store data objects using properties and constructors.