Final Project

College of DuPage

Course Title:	Academic Semester:	Last Update:
Intro to Python	Spring 2022	May 13, 2022

Part 3: Using Modules and Functions

Migrate the functionality that you wrote in Part 2 into a Python module for handling your database I/O. Save your module in a file named `databaseio.py`. Your module should contain the following 3 functions.

- `read_data()` performs the input validation loop that you wrote for Part 2 and returns the three attributes that you collected. You may reuse (copy-paste) parts of your work from Part 2, as needed.
- `print_data(a, b, c)`. Assume that the arguments `a`, `b`, and `c` are the three attributes collected above. This function will print those three values, using similar formatting as you did in Part 2. Again, you may reuse (copy-paste) parts of your work from Part 2, as needed. You do not need to name your parameters `a`, `b`, and `c`; you should name these parameters to reflect the 3 attributes that were returned by `read_input()`.
- `display_menu()` implements a new functionality. This function should print a "pretty menu," which prompts the user to select one of four options:

  1. Add a new data point to the database
  2. Delete an item in the database
  3. Display the current database
  4. Exit

  You have creative freedom over how the menu will look and what inputs correspond to each option, but the menu must be legible and the keystroke corresponding to each option must be clear. After displaying the menu, accept an input from the command prompt and return its value. **Plus 5 extra credit points: if you use an input validation loop to make sure that one of the four options above is entered**.

To test your module, create a second file named `main_pt3.py`. In this file, you will write a Python program that begins by importing the module you created in Step 1. Note: make sure both files are saved in the same directory.

After importing your module, you will perform the following 3 steps.

1. Call your `databaseio.display_menu()` function to display your options menu and get an input from the user. Just print this value, you don't have to use it for anything until Part 4.

2. Call your `databaseio.read_data()` function to read an input data from the user. Store your three attributes (returned by `databaseio.read_data()`) in 3 separate variables.

3. Print the three attributes obtained above by calling `databasio.print_data(a, b, c)`.

Deliverable:
Turn in 3 items for this assignment.

- The module/file `databaseio.py` containing the 3 functions described above: `read_data()`, `print_data(a, b, c)`, and `display_menu()`.
- The file `main_pt3.py`, which contains a program using your module.
- Copy-paste the output from running `main_pt3.py` into an output file `main_pt3_test.txt`.

Example:
For my NFL players example, I would write 3 functions with the following signatures:

- `read_data()`: **returns** name (str), position (str), years (int)
- `print_data(name, position, years)`: **returns** [none]
- `display_menu()`: **returns** option (str) – option can be one of "a" for add, "d" for delete, "p" for print, or "e" for exit.

After running, the contents of my `main_pt3_test.txt` file might be

```
>>> python3 main.py
-----------------------------------------------------
Welcome to the database of NFL players!
-----------------------------------------------------
Select one of the following options:
-----------------------------------------------------
a -- add a player to the database
d -- delete a player from the database
p -- print the database of players
e -- exit the NFL Player Database
-----------------------------------------------------
Make your choice here:  b
Please enter one of ['a', 'd', 'e', 'p']:  e
e
Enter the name of a NFL Player: Peyton Manning
Enter the abbreviated position of the player: quarterback
That was not a legal abbreviation. Please select from list:
['QB', 'HB', 'FB', 'WR', 'TE', 'C', 'OG', 'OT', 'DT', 'DE', 'MLB', 'OLB', 'CB', 'S', 'K', 'P', 'LS

Enter the abbreviated position of the player: QB
```

```
Enter the number of years the player has been in the NFL: -7
Years cannot be negative. Please try again.

Enter the number of years the player has been in the NFL: 18

NFL Player:
Name: Peyton Manning
Position: QB
Years in NFL: 18
```

You may discuss the project with your classmates, but you may **not** share code. Each student must complete their own individual project, and all code must be written by the student. Honor code violations will be handled in accordance with COD policy.