ACS 567 Software Project Management

HW1 (Due on Tuesday, January 16, 2024, 11:59pm)

The goal of this homework assignment is to practice using git and a programming language.

1. Create a github account using your PFW account. Add the instructor and TAs to your repository. See the class Brightspace for account names.
2. On github, create a new branch HWK1 for your ACS_567_HWK repository.
3. Find data that you can perform some simple data analysis (e.g. mean, median). The data must have at least 4 fields. The data should be saved to a text file or comma separated value file. Appropriate types of data would be monthly bills, financial sales, workout data, calorie intake, etc. Add the data to your project.
4. Create a console application that handles the following:
    1. Reads data from the file
    2. Adds data to the file
    3. Edits existing data
    4. Deletes existing data
    5. Provides analysis of the data (mean and median)
    6. Provides ability to filter the data in at least two different ways and display the filtered data
    7. Uses a menu approach for the console application
    8. Uses an object-oriented approach. Three classes are required: one that encapsulates your data, one that is a manager for the data, and one for driving the application. The data encapsulation class shall have appropriate fields, use constructor to set the fields, and provide methods to interact with the fields. The manager class shall be a singleton. Only the driver class may perform display operations
5. PRIOR TO STARTING IMPLEMENTATION…write a plan for how implementation should happen. This must be posted on the Brightspace link by Wednesday, January 10!
6. Code is well documented (E.g. use Javadoc, pydoc, etc)

7. On brightspace submission, provide the link to your github repository.
8. On Brightspace submission, provide summary that reflects on the plan you set out for yourself. (Would you reuse the plan, change the plan, etc.) Also, in this summary paste containing screenshots for the following functionality:
    1. Data displayed
    2. Data added
    3. Data edited
    4. Data deleted
    5. Data analysis
    6. Data filtered

Scoring Rubric

	Exemplary (10)	Needs Improving (7)	Not Present (0)
Data displayed	All data is displayed	Most data is displayed	
Data added	Data is added. No duplicates allowed.	Data is added.	
Data edited	Data fields editable (with exception of IDs)	Most data is editable	
Data deleted	Data is deleted.	Code is in place, but does not delete	
Data analysis	All data analysis provided	Most data analysis provided	
Data filtered	All data filters provided	Most data filters provided	
Data encapsulation class	Fields used, constructors set fields, getters used	One or more object oriented principles not applied	
Manager class	Created as singleton, handles all operations, no input/output	One or more design principles not applied	
Plan posted	Plan shared on time with details regarding all implementation	Plan not shared on time or missing details regarding implementation	
Reflection summary	Reflects on how plan worked including whether the plan would be reused or modified	Some reflection present	