**Criterion E: Evaluation**

**Evaluation:**

The macronutrients calculator program for backpackers/hikers met all the success criteria from Criterion A. However, there were many changes made to the program since the initial planning since Criterion B. Firstly, I intended to create a GUI for the user to interact with the program. This included the option for the user to save any entries they created/deleted/edited, but after learning how to create a non-overwriting PrintWriter, the save options was no longer needed, and the user can save automatically. Initially, two objects, Person and Event, were planned to be made extending, but I condensed those two objects into one objects of Entries make the objects easier to access from the code. Furthermore, I added methods for reading a text file, turning each line in the text file into an array of strings, loading only entry, and additional mathematical calculations. With the new changes, the initial GUI, Data Table, Test Plan, and Pseudocode from Criterion B changed for reasons of convenience and organization of the code.

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| ***Success Criteria/Test Plan*** | | |
| **Step Description** | **Expected Outcome** | **Successful?** |
| User opens the program | The program opens with the main menu visible. | *Success* |
| User creates a new entry | User is prompted to add a new entry, requiring them to input data. Multiple entries can be added at a time. | *Success* |
| User loads all entries | The program loads all entries in the database with accurate calculations. | *Success* |
| User searches for an entry to load | The program searches the current list of entries and loads entries with matching keywords as the input. | *Success* |
| User edits an entry | The program asks for the user to select an entry to edit. Then it asks which attribute of that entry the user would like to edit. The user is able to replace old data with new data. | *Success* |
| User deletes an entry | The user will be asked if they would like to delete the selected entry. The entry will be deleted if the user agrees. | *Success* |
| User deletes all entries | The program will clear the entry list, and the database will be empty. | *Success* |
| User exits program | The program will exit an option from the main menu. | *Success* |

The program was demoed to the client on 2/26/2018, and Mr. Hoang An Nguyen said he was satisfied with the outcome.

**Recommendations for Further Development**

* GUI:  
    
  Currently, there is not GUI for this program, and prompts the user to do all actions through text inputs and print statements. Adding a GUI to this program will improve user-friendliness, thus allowing the user to be more productive and time-efficient through the actions of this program, and the purpose it provides for the backpacker/hiker using the program.
* General Improvements:  
    
  The program does not have “Go back” option, so the user would have to complete whatever action they are on to navigate to the main menu. Doing this will provide easier navigation of the program for the user in case they made a mistake in their keyboard inputs. Additionally, the program can only delete or edit one entry at a time. Creating a continuous loop where the user can delete or edit multiple entries will prevent the user from going back to the main menu after every delete. In the Edit() method, the program only allows for the user to edit one attribute of an entry at a time. Creating a similar continuous loop for this method will allow the user to edit multiple attributes of entries as well as edit multiple entries without returning to the main menu. These changes to the program will decrease the time they spend on the program, thus improving the user’s productivity in completing their goals using the program.

Word Count: 410