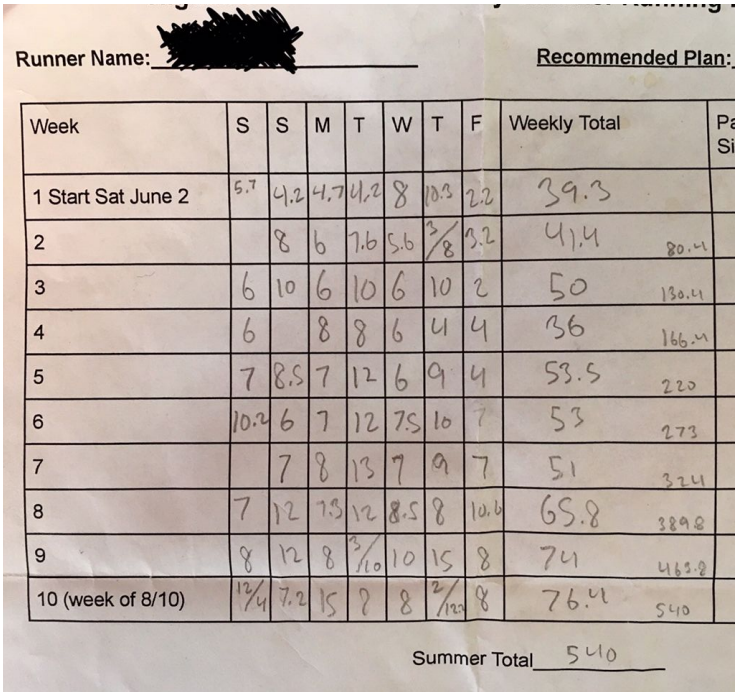
Criterion A - Planning

Defining the Problem

My client Mr. X, coaches my high school's Cross Country Running and Nordic Ski teams. In order to monitor his athletes training, he asks them to keep logs of their training over the summer and during the year. This helps him find what works best for each athlete as far as training.



Runner Name: [redacted] Recommended Plan:

Week	S	S	M	T	W	T	F	Weekly Total	Pa Si
1 Start Sat June 2	5.7	4.2	4.7	4.2	8	10.3	2.2	39.3	
2		8	6	7.6	5.6	3/8	5.2	41.4	80.4
3	6	10	6	10	6	10	2	50	130.4
4	6		8	8	6	4	4	36	166.4
5	7	8.5	7	12	6	9	4	53.5	220
6	10.2	6	7	12	7.5	10	7	53	273
7		7	8	13	7	9	7	51	324
8	7	12	7.3	12	8.5	8	10.6	65.8	389.8
9	8	12	8	3/10	10	15	8	74	463.8
10 (week of 8/10)	12/4	7.2	15	8	8	2/12	8	76.4	540

Summer Total 540

Fig. 1 - Example training log for recording running over the summer.

Presently, he distributes logs such as the one above to his athletes, which he collects at the end of the summer. In addition to this, some athletes keep their own logs in notebooks, or using online services such as Strava or Running2Win. These allow both the athlete and the coach to view how much the athlete has been exercising, as well as what the athlete has been doing, be it a run, ski, bike, or other activity.

Fig. 2 - Running2Win example

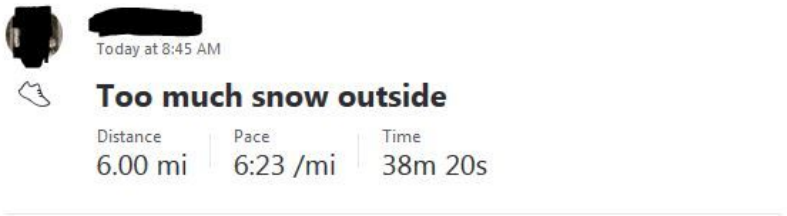


Fig. 3 - Strava example

With a variety of ways of logging activities, Mr. X has no one location to go to when wishing to view his athletes' information. I saw that having a centralized and easy to use program would simplify his work and allow him to more closely monitor his athletes' training.

Word Count : 178

Stating Success Criteria

1. A window allowing users to login or signup
2. A window where users can view their activities for a given week
    a. Able to see time, distance, sport, etc.
    b. Able to change week
    c. Able to fetch changes (if activities are edited or deleted)
3. Able to view all users' activities in chronological order
4. Able to view all user' ac
5. A database where all activities are stored
    a. Accessible from any internet-connected computer

6. A window where statistics are viewable for a given user
    a. Able to see average and total time or distance for sports
7. A window allowing users to change their password
8. A window allowing users to add new activities
    a. Specify time, distance, sport
    b. Add descriptions
    c. Only accepts valid mm/dd/yyyy for activities

Rationale for Proposed Solution

I decided to choose TkInter to create the GUI for the application, as it is a widely used GUI creation tool for python, and there are many resources available. We have also used a small amount of TkInter in our class, so it is not entirely unfamiliar to me. I chose Google Sheet and the Google Sheets API for storing all data. This was because it allowed me to quickly create a broadly available document that was simple to access and edit.

I chose not to use a more mainstream database such as mySQL because it would become much more difficult for the database to be available online. Additionally, the time devoted to the database would mean a lower quality end-user experience. However, the program could be easily modified to support a different data structure, as all the methods that interact with the database are stored in a single file, referenced by the other classes.

I chose to use Python 3.7 combined with PyCharm due to its familiarity and ease of operation. I had previous experience with Python OOP that allowed me to devote more energy to the program itself, rather that learning and adhering to programming conventions.

Word Count : 199