We are going to practice reading from a file, processing the content of the file using string operations, and writing the processed content back into a new file. *This miniproject involves a lot of work. Feel free to form group and split the tasks among your collaborators.*

First task: Open the file 'things_to_sort' in the read mode. Then try the following three ways of getting the content of the file:

1. use the .read() function to get the content of entire file as a single string;

2. use the .readline() function to get the lines one by one;

3. use the .readlines() function to get a list of lines.

Question: Can you simply run another 'read' function right after a call of one 'read' function to get the content again? More specifically, what do you get when run .readline() or .readlines() right after a call of .read()? If that is not what you expect, what do you do to get the content again?

Second task: After you get a list of lines from the file, you can see that one of them contains a bunch of integers, and the other a bunch of names of fruits. We want to store the numbers into a list of integers and store the names of fruits into another list of strings. You need the following two functions for precessing the strings:

• .strip() to get rid of the leading and trailing white spaces, and

• .split() to split a string into words.

If you are not familiar with the functions, try first search online for usage explanation and examples.
Question: Remember that we need a list of integers, while the .split() function can only help us get the numbers in the string form. Can you write a list comprehension to get a list of integers from a list of integers in string form?

Third task: Sort the numbers in ascending order and the names in Alphabetical order (the ordering of words dictionaries use) using the built-in list function .sort().

Final task: Open a new file 'sorted_things' in either the appending or writing mode, and write the sorted numbers into the file as the first line, and the sorted names of fruits as the second line. There are a lot of different ways to accomplish the task. Be creative and see how much different ways you can come up with.

Oh wait! Did you close the files to avoid accidental tampering of the file and also to free up system resource taken up by open files?