

09 Teach: Team Activity

Lists of Numbers

Instructions

Face-to-face students will complete this activity in class.

Online students should arrange for a one hour synchronous meeting to work through the activity together.

Overview

When you work with a list of strings, you might only need to add and remove items, or find an item in the list. However, once you start working with lists of numbers, you have an additional set of tasks you may want to perform, such as summing, averaging, or finding the highest or lowest value in the list. In this activity you will practice some of these operations.

Assignment

Ask the user for a series of numbers, and append each one to a list. Stop when they enter 0.

Once you have a list, have your program do the following:

I. CORE REQUIREMENTS

Work through these core requirements step-by-step to complete the program. Please don't skip ahead and do the whole thing at once, because others on your team may benefit from building the program up slowly.

01. | Compute the sum, or total, of the numbers in the list.
02. | Compute the average of the numbers in the list.
03. | Find the maximum, or largest, number in the list.

The following shows the expected output:

```
Enter a list of numbers, type 0 when finished.  
Enter number: 18  
Enter number: 36  
Enter number: 2  
Enter number: 48  
Enter number: 6  
Enter number: 12  
Enter number: 9  
Enter number: 0  
The sum is: 131  
The average is: 18.714285714285715  
The largest number is: 48
```

II. STRETCH CHALLENGE

01. | Have the user enter both positive and negative numbers, then find the smallest positive number (the positive number that is closest to zero).
02. | Sort the numbers in the list and display the new, sorted list. Hint: There are python libraries that can help you here, try searching the internet for them.

The following shows the expected output after completing the stretch challenges:

```
Enter a list of numbers, type 0 when finished.  
Enter number: 3  
Enter number: 5  
Enter number: 7  
Enter number: 3  
Enter number: 2  
Enter number: -1  
Enter number: -4  
Enter number: -8  
Enter number: 0  
The sum is: 7  
The average is: 0.875  
The largest number is: 7
```

```
The smallest positive number is: 2
The sorted list is:
-8
-4
-1
2
3
3
5
7
```

Sample Solution

When your program is finished, please view the sample solution for this program to compare it to your approach.

You should work to complete this team activity for the one hour period first, without looking at the sample solution. However, if you have worked on it for at least an hour and are still having problems, you may feel free to use the sample solution to help you finish your program.

» Sample solution (core requirements and stretch challenges):
[teach09_sample.py](#)

Submission

When complete, please report your progress in the associated I-Learn quiz.

If you decided to do additional work on the program after your team activity, either by yourself or with others, feel free to include that additional work when you report on your progress in I-Learn.