Task : Test that you understand the concepts!

Welcome to Task 2.5. This task is aimed to ensure you have a concrete understanding of Strings, Lists and List manipulations that will be needed for the more advanced tasks.

Instructions:

Read **example.py**. Open it using **Notepad++**. This should help you understand more advanced Python. You are not required to read the entirety of **AdditionalReading.pdf**, it's purely for extra reference.

This example deals with lists and operations that can be applied to elements in lists. It reintroduces functions and how they can be used to compute certain values.

Compulsory exercise to finish Task 2.5:

After you've read and understood all of **example.py**, create a new python file called amazon.py inside this folder. This programming problem is one posed to new software developer applicants to Amazon, the software development company you've probably bought a book or dvd from once in your life. Inside amazon.py, write Python code to read in the input of the textfile 'input.txt', and for each line in input.txt, write out a new line in a new text file output.txt that computes the answer to some operation on a list of numbers.

If the input.txt file has the following:

min: 1,2,3,5,6
max: 1,2,3,5,6
avg: 1,2,3,5,6

Your program should generate an output.txt file as follows:

The min of [1, 2, 3, 5, 6] is 1
The max of [1, 2, 3, 5, 6] is 6
The avg of [1, 2, 3, 5, 6] is 3.4

Assume that the only operatings given in the input file as 'min', 'max' and 'avg', and that the operation is always followed by a list of comma seperated integers.

You should define a functions min, max and average that take in a list of integers and return the max, min or average of the list.
Your program should handle any combination of operations and any length of input numbers.
You can assume that the list of input numbers are always valid ints and is never empty.

BONUS Optional Challenge:

Change your program to additionally handle the operation 'px' where x is a number from 10 to 90 and defines the x percentile of the list of numbers. For example:

input.txt:

min: 1,2,3,5,6
max: 1,2,3,5,6
avg: 1,2,3,5,6
p90: 1,2,3,4,5,6,7,8,9,10
sum: 1,2,3,5,6
min: 1,5,6,14,24
max: 2,3,9
p70: 1,2,3

Your output.txt should read:

The min of [1, 2, 3, 5, 6] is 1
The max of [1, 2, 3, 5, 6] is 6
The avg of [1, 2, 3, 5, 6] is 3.4
The 90th percentile of [1, 2, 3, 4, 5, 6, 7, 8, 9, 10] is 9
The sum of [1, 2, 3, 5, 6] is 17
The min of [1, 5, 6, 14, 24] is 1
The max of [2, 3, 9] is 9
The 70th percentile of [1, 2, 3] is 2