



Python Software Developer
Task: Function and Hashing

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Introduction

Welcome to the Function and Hashing Task!

Please feel free to visit www.hyperiondev.com and view the tools and methods that will help you throughout the course.

For any queries regarding the course, need help understanding the task or general comments, please contact us at help@hyperiondev.com.

Overview

This Task is aimed to ensure that you have a concrete understanding of Strings, Lists and Lists manipulations, as these will be needed for upcoming more advanced tasks. In `example.py`, you will see examples that deal with lists and operations that can be applied to elements in lists.

The Task also re-introduces Functions and how they can be used to compute certain values on list elements and/or text file contents.

-The Hyperion Team





Instructions

First read example.py, open it using Notepad++ (Right click the file and select 'Edit with Notepad++').

- Example.py should help you understand some simple Python. Every task will have example code to help you get started. Make sure you read all of example.py and try your best to understand.
- You may run example.py to see the output. The instructions on how to do this are inside the file. Feel free to write and run your own example code before doing Task 5 to become more comfortable with Python.
- You are not required to read the entire of Additional Reading.pdf, it is purely for extra reference.

Compulsory Task

Follow these steps:

- Create a Python file called "amazon.py" in this folder.
- Write code to read in the input of the text file "input.txt", for each line in input.txt, write a new line in the new text file "output.txt" that computes the answer to some operation on a list of numbers.

- If the input.txt 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 output.txt 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 operations given in the input file are min, max and avg, and that the operation is always followed by a list of comma separated integers. You

should define the functions min, max and avg that take in a list of integers and return the min, max or avg 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 integers and the list is never empty.

Bonus Optional Challenge:

Change your program to additionally handle the number “px” where x is the number from 10 to 90 and defines the x percentile of the list of numbers. E.g.,

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

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 70th percentile of [1,2,3] is 2.

You will be awarded 4 Hyperion Stars for correctly completing this task.

Things to look out for:

1. Make sure that you have installed and setup all programs correctly. You have setup **Dropbox** correctly if you are reading this, but **Python or Notepad++** may not be installed correctly.
2. If you are not using Windows, please ask your tutor for alternative instructions.

Still need help?

Just write your queries in your comments.txt file and your tutor will respond. Alternatively you can email us on help@hyperiondev.com.

Task Statistics

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