
**Submissions:** This assignment is due in class on T Feb 11th 2020. Each student must submit his or her own assignment. Solutions can either be typed in Latex, MSWord or other such word processing software, or printed clearly. You must write your name and UUID clearly on your submitted assignment. For the programming problems the code must be in Python and should be submitted in a Dropbox folder (called “HW2 submission”).

**Academic Integrity:** You are encouraged to work in groups, but everyone must write out their own solutions. Absolutely no word to word copying is allowed. Please refer to the course policies and schedules about this. If you have worked with other students on the assignment or referred to external sources, please mention all names and sources on your assignment.

**Partial solutions:** If you are sure that you know how to arrive at a solution, but you get stuck in some place, it is better to write the partial solution. Honest attempts at partial solutions will be awarded.

**4030/6030 points:** Students enrolled in 4030 can solve only the first two problems correctly for full points. The corresponding points for 6030 students are also mentioned. They need to solve another one for full points.

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Problem 1 [70/40 pts] Write code in Python for the following problem: Given a list of numbers, print the sum of all high frequency occurring items where a high frequency occurring item is a number that occurs at least 5 times in the list. For example if the given list is:

10, 0, -1, 0, 0, 2, 2

the answer is 0. If the input is,

1,10,-1,0,1,1,2,1,9,10,1,10,11,10,20,10,10

the answer is 1 + 10 = 11 since 1, 10 are the only numbers that occur at least 5 times.

Also mention, as a comment in the code the runtime of your algorithm. For example, if your analysis comes out quadratic time you could say:

#The runtime is O(n^2) where n is the length of the list.

Problem 2 [30/30 pts] Solve problem 1.33 from the textbook.

Problem 3 [0/30 pts] Solve problem 1.19 from the textbook.