Moavi | Exercise list | Python

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Below are 4 functions you should implement.
Each one has a description of the functionality and a table with examples of expected returns.
You can use any Python library you deem suitable.

Frequency sort

def frequency_sort(items):

Sort the given list of integer items so that its elements end up in the order of decreasing frequency, that is, the number of times that they appear in items. If two elements occur with the same frequency, they should end up in the ascending order of their element values with respect to each other, as is the standard practice in sorting things.

items	Expected result
[4, 6, 2, 2, 6, 4, 4, 4]	[4, 4, 4, 4, 2, 2, 6, 6]
[4, 6, 1, 2, 2, 1, 1, 6, 1, 1, 6, 4, 4, 1]	[1, 1, 1, 1, 1, 1, 4, 4, 4, 6, 6, 6, 2, 2]
[17, 99, 42]	[17, 42, 99]
['bob','bob','carl','alex','bob']	['bob','bob','bob','alex','carl']

Reverse the vowels

def reverse_vowels(text):

Given a text string, create and return a new string constructed by finding all its vowels and reversing their order, while keeping all other characters exactly as they were in their original positions. To make the result more presentable, the capitalization of each position must remain the same as it was in the original text. For example, reversing the vowels of 'Ilkka' should produce 'Alkki' instead of 'alkkI'. For this problem, vowels are the usual 'aeiouAEIOU'.

text	Expected result
'Bengt Hilgursson'	'Bongt Hulgirssen'
'Why do you laugh? I chose the death.'	'Why da yee leogh? I chusa thu dooth.'
'These are the people you protect with your pain!'	'Thisa uro thi peoplu yoe protect weth year peen!'
'We had to sacrifice a couple of miners to free Bolivia.'	'Wa hid ti socrefeco e ciople uf monars te frii Balovae.'

Collapse positive integer intervals

def collapse_intervals(items):

Given a nonempty list of positive integer items guaranteed to be in sorted ascending order, create and return the unique description string where every maximal sublist of consecutive integers has been condensed to the notation first-last.

If some maximal sublist consists of a single integer, it must be included in the result string all by itself without the minus sign separating it from the now redundant last number. Make sure that the string returned by your function does not contain any whitespace characters, and that it does not have a silly redundant comma hanging at the end.

items	**Expected result**
[1, 2, 4, 6, 7, 8, 9, 10, 12, 13]	'1-2,4,6-10,12-13'
[42]	'42'
[3, 5, 6, 7, 9, 11, 12, 13]	'3,5-7,9,11-13'
[]	''
range(1, 1000001)	'1-1000000'

Calculate employee distribution

def calc_employee_dist(filepath):

The working day of an employee can be defined in 4 time stamps: entry, departure for break, return from break and exit.

Given a CSV file with employee working days for a 24-hour store, calculate a list with the number of employees in each 10-minute interval along the day. The CSV file contains 4 time stamps per line, separated by commas, and each line represents an employee.

The calculated list should contain 144 integers, since 24 hours contains 144 10-minute intervals. The first integer should represent 00:00-00:10, while the last one should represent 23:50-00:00.

CSV content	**Expected result**
00:00,04:50,05:30,08:00 04:50,06:20,07:00,12:50 08:00,11:20,12:00,16:00 10:50,15:30,16:10,18:50 15:30,17:20,18:00,23:30 16:00,18:00,18:40,00:00	[1,1,1,1,1,1,1,1,1,1,1,1,1,1,1,1,1,1,1,1,1,1,1,1, 1,1,1,1,1,1,2,2,2,2,2,1,1,1,1,2,2,2,2,2,2,2,2,2,2, 2,2,2,2,2,2,2,2,2,2,2,3,3,3,2,2,2,2,3,3,3,3,3,2,2,2, 2,2,2,2,2,2,2,2,2,2,2,2,2,2,2,2,3,3,3,3,3,3,2,2,2, 2,2,2,2,2,3,2,2,2,2,2,2,2,2,2,2,2,2,2,2,2,2,2,2,2, 2,2,2,2,2,2,2,1,1,1]