

## Exercises day 8

Use the typing package for all tasks!

Translated with ChatGPT:

Task 1)

Write a function that takes one or more lists as parameters. Within the function, check whether the elements of the list(s) are even or odd. All even elements should be returned in one variable, and all odd elements in another.

Task 2)

Write a function that counts all uppercase letters, lowercase letters, and spaces in a string and outputs the result as a dictionary.

Task 3)

Write a function that outputs a sorted argument (list or string). Optionally, it should be possible to specify whether a sorting function is used and whether the sorting should be in ascending or descending order.

Task 4)

Write a function for calculating the volume of a cone, sphere, cuboid, and any arbitrary shape respectively. Each function should take the relevant dimensions (diameter, ...) as parameters.

Then, write a function where, based on a string input ('sphere' or similar), the appropriate function is automatically selected and the volume is outputted. The necessary parameters (such as radius) should also be provided.

Task 5)

Write a function that receives `*args` and a `**kwargs`. Lists should be provided in `*args` and an integer for the position of the desired list in `**kwargs`. `**kwargs` should have a default value. If this is given, the function should first output the list and then its elements. If a value is given to `**kwargs`, only that list and its elements should be printed.