

1. Comment about the possible output values of the following code in Python and how you would overcome the drawbacks when using different Python versions

```
result = 7 / 5
use_result_somewhere(result)
```

2. Given the following code, please rewrite generate_list and use_list functions using at least one different iterator

```
def generate_list():
    res = []
    for i in range(5):
        res.append(i)

    return res

def use_list(input):
    for i in input:
        print(i)

x = generate_list()
use_list(x)
```

3. An isogram is a word with no repeating letters. Please complete the function is_isogram, which returns true if the word has no repeating letters. Could you do the same for a heterogram: a sentence with no repeating letters?

```
def is_isogram(word : str):
    # Your code

def is_heterogram(sentence : str):
    # Your code
```

4. Is there any issue with the following code that may alter the expected behaviour?

```
def append_to_list(value, list_=[]):
    list_.append(value)
    return list_

l1 = append_to_list(3)
l2 = append_to_list(1, [2])
l3 = append_to_list(5)
```

5. Write a python program following the requirements below:

- The program must retrieve, on startup, the users, the first 10 posts (sorted by ID) and the comments of those posts from <https://jsonplaceholder.typicode.com/> API (see the link to get all the information)
- The data, had not been written before, shall be stored in a DB
- The program will expose an API with the following functions:
 - Return info from a user ID
 - Return all posts from the same user
 - Return a particular post and its comments
- The code shall include the means to generate a pip wheel to be installed in any target machine by pip, including installing a script to call the program from the CLI, alongside a small README file with the necessary instructions