Lists & Tuples Level-1

Practice Problem 17

📌 Description:

> - Write a Python program that multiplies all the items in a list by the value of the variable `factor`.
> - The program must print the list as the output.
> - The program should also allow multiplying the variable `factor` by a string in case the list contains strings.
> - You may assume that the value of `factor` will be a positive integer.

🔹 Expected Output:

List	factor	Output
[3, 4, 5, 6]	2	[6, 8, 10, 12]
["a", "b", "c"]	3	["aaa", "bbb", "ccc"]

Practice Problem 18

📌 Description:

> - Write a Python program that prints the elements of a list on the same line.
> - The elements should be separated only by a space (not by a comma).
> - The output should **not** include the opening and closing square brackets `[ ]`.

🔹 Expected Output:

List	Output
[3, 4, 5, 6]	3 4 5 6
["a", "b", "c"]	a b c

Practice Problem 19

📌 Description:

> - Write a Python program that prints the **largest** and **smallest** values in a list
> - Print the two values on the same line, separated by a space.
> - The largest value should appear first and the smallest value should appear second.

- You may assume that the list only contains numeric values.
- If the list is empty, print `None`.

🔹 **Expected Output:**

List	Output
[3, 4, 5, 6]	6 3
[-1, -2, -3, -4]	-1 -4
[0, 0, 0, 0]	0 0
[]	[]

🔸 **Hints:**

- The functions `min()` and `max()` can be helpful for this challenge.

Practice Problem 20

📌 **Description:**

- Write a Python program that checks if a list is empty or not.
- If the list is empty, print `"Empty"`. Else, print `"Not Empty"`.

🔹 **Expected Output:**

List	Output
[]	"Empty"
[4]	"Not Empty"
[4, 5, 6, 7]	"Not Empty"

🔸 **Hints:**

- The `len()` function returns the number of elements in a list.

Practice Problem 21

📌 **Description:**

- Write a Python program that prints the elements of a list followed their corresponding indices.
- Each element and its index must be on the same line separated by a space.

- If the list is empty, print `"Empty List"`.

🔹 **Expected Output:**

List	Output
[1, 2, 3, 4]	1 0 2 1 3 2 4 3
["a", "b", "c"]	a 0 b 1 c 2
[]	"Empty List"

🔸 **Hint:**

- The `enumerate()` function can be used to iterate over a counter and the elements of a sequence in parallel.

Practice Problem 22

📌 **Description:**

- Write a Python program that removes all occurrences of the element `elem_to_remove` from a list.
- The output of the program should be the new list with the element removed.
- If the element is not found in the list, print the message `"Not Found"`.
- If the list is empty, print `"Empty List"`.

🔹 **Expected Output:**

List	Element to Remove	Output
[1, 2, 3, 4]	2	[1, 3, 4]
[3, 3, 2, 1]	3	[2, 1]
["a", "b", "c", "b"]	"b"	["a", "c"]
[3, 4, 5, 6]	7	"Not Found"
[]	0	"Empty List"

🔸 **Hints:**

- The list method `.remove()` only removes the first occurrence of an element in a list.
- The program must remove **all** occurrences of the element from the list.
- You can get the number of occurrences of an item with the `.count()` list method.

Practice Problem 23

📌 **Description:**

> - Write a Python program that removes duplicate elements from a list, only keeping one occurrence of each element in the list.
> - The original list should be mutated (modified).
> - The program must print the final version of the list.

🔹 **Expected Output:**

List	Output
[1, 1, 2, 3, 4, 4]	[1, 2, 3, 4]
["a", "a", "b", "a"]	["a", "b"]
[1, 2, 3]	[1, 2, 3]
[]	[]

🔸 **Hints:**

- **Sets** are commonly used to remove duplicates from lists and tuples in Python.

Practice Problem 24

📌 **Description:**

- Write a Python program that counts the number of elements in a list with value **greater than 3**.
- You may assume that the list only contains numbers.
- Print the final count.

🔹 Expected Output:

List	Output
[1, -1, 0, 2, 2, 3]	0
[1, 2, 3, 4]	1
[7, 8, 9, 10]	4
[]	0

🔸 Hints:

- You will need to define a variable that will act as the counter and print the value of this counter.
- "Greater than" means **strictly** greater than a value. It does not include cases where the value is equal to 3.
- You may want to use a for loop, list comprehension, or generator expressions.
