Lesson 07: Sets, Frozenset & Garbage Collection

📖 Research Work

1️⃣ Why are sets useful in Python?

- They store only **unique** elements (no duplicates).
- Very fast membership checking using `in`.
- Ideal for mathematical set operations like **union**, **intersection**, and **difference**.

2️⃣ Difference between `.remove()` and `.discard()`

- `.remove(item)` → Raises an **error** (`KeyError`) if the item is not found.
- `.discard(item)` → Does **not** raise an error if the item is not found.

3️⃣ What does immutability mean for a frozenset?

- Once created, you **cannot** add, remove, or change elements.
- It is a **read-only** type of set.

4️⃣ Why might `.pop()` return an unpredictable element?

- Sets are **unordered**, so `.pop()` removes and returns a random element.

5️⃣ How does `.clear()` differ from creating a new empty set?

- `.clear()` → Empties the **existing** set but keeps the same object in memory.
- `set()` → Creates a **brand new** empty set object.