■ Research Work – Lesson 07

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1■■ Why are sets useful in Python?

Sets are useful because they automatically remove duplicates and allow fast membership checking. They are also helpful for performing mathematical operations like union and intersection.

2■■ Explain the difference between .remove() and .discard().

- remove(): Deletes the element but raises an error if the element is not present. - discard(): Deletes the element but does nothing if the element is not present.

3■■ What does immutability mean for a frozenset?

Immutability means that once a frozenset is created, it cannot be changed. No new items can be added or removed.

4■■ Why might .pop() on a set return an unpredictable element?

Sets are unordered collections, so Python does not track positions. This is why pop() removes a random element.

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

- clear(): Removes all elements from the existing set but keeps the same object. - set(): Creates a completely new empty set (a different object).