

■ Research Work – Assignment

Student: Muhammad Ali

1■■■ What are the differences between lists, tuples, and dictionaries?

- List → Ordered, mutable (we can change values), written with [].
- Tuple → Ordered, immutable (cannot be changed), written with ().
- Dictionary → Stores data as key-value pairs, written with {}.

2■■■ Why are tuples immutable? When should we use them?

- Tuples are immutable to keep data safe and unchangeable.
- Use them when you want data that should never change (e.g., date of birth, coordinates).

3■■■ How can keys in dictionaries help access data efficiently?

- In a dictionary, we use keys to find values quickly.
- This makes searching data much faster compared to lists.

4■■■ What happens if you try to change a tuple value?

- Python will give an error because tuples cannot be changed once created.

5■■■ Give one real-world example each for list, tuple, and dictionary

- List: A list of fruits → ["Apple", "Mango", "Banana"]
- Tuple: A student's birthdate → (13, 1, 2008)
- Dictionary: A student's details → {"Name": "Ali", "Age": 17, "City": "Gujranwala"}