

Lesson_06_Lists,_Tuples_&_Dictionary

Research Work – Critical Exploration

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

Answer:

Lists are ordered, changeable collections, like a list of your favorite games. Tuples are ordered but unchangeable, like a fixed record of your name and age. Dictionaries store data in key-value pairs, like a notebook linking names to phone numbers.

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

Answer:

Tuples are immutable to keep data safe and unchangeable, like a birthdate that never changes. Use them when you want fixed data, like storing coordinates or a student's ID.

③ How can keys in dictionaries help access data efficiently?

Answer:

Keys in dictionaries act like labels, letting you quickly find data, like looking up a friend's score by their name. They make finding values fast without searching the whole dictionary.

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

Answer:

If you try to change a tuple's value, you'll get a `TypeError` because tuples are immutable. For example, `my_tuple[0] = "new"` will cause an error since tuples can't be modified.

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

Answer:

List: A list of your favorite foods, like `["biryani", "pizza", "burger"]`.

Tuple: Your fixed profile, like `("Ali", 13, "Karachi")`.

Dictionary: A record of student marks, like `{"Ali": 85, "Sara": 78}`.