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Python - Collections, Functions And Modules In Python Batch – 10\_june\_Python;

**Module – 7**

**Q1]. Common list operations: concatenation, repetition, membership.**

**1) Concatenation (+)**

* **Combines two or more lists into one.**
* **Returns a new list without changing the original ones.**

**list1 = [1, 2, 3]**

**list2 = [4, 5]**

**result = list1 + list2**

**print(result) # Output: [1, 2, 3, 4, 5]**

**2) Repetition (\*)**

* **Repeats the elements of a list multiple times.**
* **Useful for initializing lists or repeating patterns.**

**my\_list = ['a', 'b']**

**repeated = my\_list \* 3**

**print(repeated) # Output: ['a', 'b', 'a', 'b', 'a', 'b']**

**3) Membership (in, not in)**

* **Used to test if an element exists in a list.**

**numbers = [10, 20, 30]**

**print(20 in numbers) # Output: True**

**print(50 not in numbers) # Output: True**

**Q2]. Understanding list methods like append(), insert(), remove(), pop().**

**1) append()**

* **Adds a single element to the end of the list.**
* **Modifies the original list.**

**fruits = ["apple", "banana"]**

**fruits.append("cherry")**

**print(fruits) # Output: ['apple', 'banana', 'cherry']**

**2) insert(index, value)**

* **Inserts an element at a specified index.**
* **Shifts existing elements to the right.**

**fruits.insert(1, "orange")**

**print(fruits) # Output: ['apple', 'orange', 'banana', 'cherry']**

**3) remove(value)**

* **Removes the first occurrence of the specified value.**
* **Raises an error if the value does not exist.**

**fruits.remove("banana")**

**print(fruits) # Output: ['apple', 'orange', 'cherry']**

**4) pop([index])**

* **Removes and returns the element at the given index.**
* **If no index is given, it removes the last element.**
* **Raises IndexError if the list is empty or index is invalid.**

**last\_item = fruits.pop() # Removes 'cherry'**

**print(last\_item) # Output: cherry**

**print(fruits) # Output: ['apple', 'orange']**

**first\_item = fruits.pop(0) # Removes 'apple'**

**print(first\_item) # Output: apple**