**📝 Day 7 – Home Assignments: Lists (Creating, Accessing, Slicing, Modifying, List Comprehension)**

**🔹 Part A: Creating and Accessing Elements**

1. Create a list fruits = ["apple", "banana", "cherry", "mango", "grape"]
   * Print the **first** and **last** element.
2. Create a list of 5 integers.
   * Print the **second** and **fourth** elements using indexing.
3. Create a list colors = []
   * Add "red", "blue", and "green" to the list using append().

**🔹 Part B: Slicing Lists**

1. Given numbers = [10, 20, 30, 40, 50, 60, 70], print:
   * First 3 elements
   * Last 2 elements
   * Elements from index 2 to 5 (excluding 5)
   * Reverse the list using slicing
2. Create a list alphabets = ["a", "b", "c", "d", "e", "f", "g"]
   * Print every second element using slicing

**🔹 Part C: Modifying Elements**

1. Replace the third element of a list marks = [45, 67, 89, 34] with 99.
2. Add an element "python" at the end of a list languages = ["C", "Java"].
3. Insert "HTML" at index 1 in the above list.
4. Remove the last item using pop() and print it.
5. Delete the second element using del.

**🔹 Part D: List Comprehension**

1. Create a list of squares from 1 to 10 using list comprehension.  
   Example: [1, 4, 9, ..., 100]
2. From a list of numbers 1 to 20, create a new list that contains only **even numbers** using list comprehension.
3. Given words = ["Apple", "banana", "Cherry"], create a new list with all words in lowercase using list comprehension. (*hint: use lower()*)
4. From a string "python", create a list of characters using list comprehension.
5. Create a list of numbers from 1 to 50 that are divisible by both 3 and 5 using list comprehension.
6. Write a program that takes 5 numbers from the user and stores them in a list. Then:

* Print the sum
* Print the max and min number
* Sort the list and print it

1. Create a list names = ["Alice", "Bob", "Charlie", "David"]

* Use list comprehension to create a list of name lengths: [5, 3, 7, 5]

1. Given sentence = "Python is powerful", convert it into a list of words and then reverse the list using slicing.