**Assignment – List, Tuple, Set, Dictionary**

**Part A - List**

**Q1. Add 4 to the list.  
 Input: [1, 2, 3]  
 Output: [1, 2, 3, 4]**

**Q2. Add elements [30, 40] to the list.  
 Input: [10, 20]  
 Output: [10, 20, 30, 40]**

**Q3. Find how many times 200 appears.  
 Input: [100, 200, 300, 200]  
 Output: 2**

**Q4. Arrange the list in ascending order.  
 Input: [5, 3, 8, 1]  
 Output: [1, 3, 5, 8]**

**Q5. Remove element 3 from the list.  
 Input: [1, 2, 3, 4]  
 Output: [1, 2, 4]**

**Q6. Reverse the list.  
 Input: [9, 8, 7]  
 Output: [7, 8, 9]**

**Q7. Insert 99 at position 1.  
 Input: [10, 20, 30]  
 Output: [10, 99, 20, 30]**

**Q8. Make a copy of the list and show both.  
 Input: [1, 2, 3]  
 Output: Original: [1, 2, 3], Copy: [1, 2, 3]**

**Q9. Remove the last element and return it.  
 Input: [50, 60, 70]  
 Output: Returned: 70, Final list: [50, 60]**

**Q10. Remove one occurrence of 2 from the list.  
 Input: [1, 2, 2, 3, 4]  
 Output: [1, 2, 3, 4]**

**Q11. Find the position of 300.  
 Input: [100, 200, 300, 400]  
 Output: 2**

**Q12. Remove all elements from the list.  
 Input: [10, 20, 30]  
 Output: []**

**Q13. Add [8, 10] as a single element.  
 Input: [2, 4, 6]  
 Output: [2, 4, 6, [8, 10]]**

**Q14. Add elements (25, 35) to the list.  
 Input: [5, 15]  
 Output: [5, 15, 25, 35]**

**Q15. Sort the list in descending order.  
 Input: [7, 1, 4, 3]  
 Output: [7, 4, 3, 1]**

**Q16. Find the length of a list.  
 Input: [5, 10, 15]  
 Output: 3**

**Q17. Find the maximum element in a list.  
 Input: [2, 8, 1, 9]  
 Output: 9**

**Q18. Find the minimum element in a list.  
 Input: [5, 3, 7, 1]  
 Output: 1**

## **Part b - Tuple**

**Q1. Find how many times 2 appears.  
 Input: (1, 2, 3, 2, 4)  
 Output: 2**

**Q2. Find the position of 30.  
 Input: (10, 20, 30, 40)  
 Output: 2**

**Q3. Access the last element of a tuple.  
 Input: (5, 15, 25, 35)  
 Output: 35**

**Q4. Find the length of a tuple.  
 Input: (1, 2, 3, 4, 5)  
 Output: 5**

**Q5. Repeat a tuple 3 times.  
 Input: (1, 2)  
 Output: (1, 2, 1, 2, 1, 2)**

**Q6. Find the index of an element.  
 Input: (10, 20, 30, 20), index of 30  
 Output: 2**

**Q7. Convert a list into a tuple.  
 Input: [1, 2, 3]  
 Output: (1, 2, 3)**

**Q8. Check if an element exists in a tuple.  
 Input: (1, 2, 3, 4), check 3  
 Output: True**

**Q9. Reverse a tuple.  
 Input: (1, 2, 3, 4)  
 Output: (4, 3, 2, 1)**

## **Part C: Set**

**Q1. Find common elements from three sets.  
 Input: {1,2,3,4}, {2,3,5,6}, {0,2,3,7}  
 Output: {2, 3}**

**Q2. Find elements that are only in the first set but not in the other two.  
 Input: {1,2,3,4,5}, {2,3}, {4,6}  
 Output: {1, 5}**

**Q3. Create a set of unique vowels from a string.  
 Input: "education"  
 Output: {'a', 'e', 'i', 'o', 'u'}**

**Q4. Convert a list of tuples into a set.  
 Input: [(1,2), (3,4), (1,2)]  
 Output: {(1, 2), (3, 4)}**

**Q5. Find the intersection of characters in two words.  
 Input: "banana", "bandana"  
 Output: {'a', 'b', 'n'}**

**Q6. Find digits in the first number but not in the second.  
 Input: 12345, 34567  
 Output: {'1', '2'}**

**Q7. Find all unique words from a sentence.  
 Input: "python is fun and python is powerful"  
 Output: {'is', 'python', 'fun', 'and', 'powerful'}**

**Q8. Remove duplicates from a list.  
 Input: [1,2,2,3,3,4,5]  
 Output: {1, 2, 3, 4, 5}**

**Q9. Find non-overlapping characters between two words.  
 Input: "hello", "world"  
 Output: {'h', 'e', ‘w’, 'r', 'd'}**

**Q10. Find maximum and minimum elements in a set.  
 Input: {12, 7, 25, 3, 18}  
 Output: 25 3**

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## **Part D: Dictionary**

**Q1. Get the value of a dictionary with the maximum value.  
 Input: {'a':10, 'b':25, 'c':15}  
 Output: 25**

**Q2. Get all dictionary values as a single string.  
 Input: {'a':'hi','b':'there'}  
 Output: "hi there"**

**Q3. Remove the last inserted pair.**

**Input: {'a':1, 'b':2, 'c':3}**

**Output: {'a':1, 'b':2}**

**Q4. Find values present in both dictionaries.  
 Input: {'x':1, 'y':2}, {'a':2, 'b':3}  
 Output: {2}**

**Q5. Find the sum of dictionary keys.  
 Input: {10:'a', 20:'b', 30:'c'}  
 Output: 60**

**Q6. Remove duplicates from dictionary values.  
 Input: {'a':1, 'b':2, 'c':1}  
 Output: {1, 2}**