

Scientific Computing – Lab Assignment-3

Python Programming - Tuple, Set and Dictionary

Write Python programs for the following:

1. To accept a sequence of comma-separated numbers from the user and generate the following with those numbers:-
 - a. Tuple
 - b. Set
2. To find the elements those are not common in two sets.
3. To create a set of consonants in a given sentence using set comprehension.
4. To remove all duplicates from a given sentence.
5. To remove the intersection of a second set from the first set.
6. To check if a given set is a superset of itself and a subset of another given set.
7. To create two frozen-sets and find the following:
 - a. Union
 - b. Intersection
 - c. Difference
8. To create a tuple of unique elements from an existing tuple.
9. To count the occurrences of elements in a tuple.
10. To find if all the items, in a tuple, are the same.
11. To sort a given tuple in descending order.
12. To check whether an element exists within a tuple.
13. To remove an empty tuple(s) from a tuple of tuples.

Sample data: `((), (2), (' '), ('x', 'y'), (), ('p', 'q', 'r'), (), (3,4))`

Expected output: `(2, (' '), ('x', 'y'), ('p', 'q', 'r'), (3, 4))`
14. To create a new dictionary by merging two dictionaries.

15. To create a dictionary and to check if a key exists in the dictionary. If the key exists, print the value else, add the key into the dictionary.
16. To remove a key from a dictionary.
17. To print a dictionary in ascending sorted order:
 - a. w.r.t keys.
 - b. w.r.t values.
18. To sum all the items in a dictionary.
19. To convert a list of tuples into a dictionary.
20. To build a dictionary of words and their word counts in a sentence given by the user.