Advance Python Programming & Application

Tuple programs

Practices

Sure! Here are some task assignments involving tuples in Python that students can practice using functions:

Tuple Manipulation:

- Write a function to create a tuple from user input.

- Write a function to add an element to an existing tuple and return the new tuple.

- Write a function to remove an element from a tuple and return the new tuple.

- Write a function to concatenate two tuples and return the result.

- Write a function to find the length of a tuple.

Tuple Operations:

- Write a function to find the maximum and minimum elements of a tuple.

- Write a function to check if an element exists in a tuple.

- Write a function to count the occurrences of an element in a tuple.

- Write a function to reverse a tuple.

- Write a function to sort a tuple.

Tuple Unpacking:

- Write a function to unpack a tuple into individual variables.

- Write a function to zip two tuples and return a list of tuples.

Tuple Slicing:

- Write a function to slice a tuple based on start and end indices.

- Write a function to return the first n elements of a tuple.

Tuple Iteration:

- Write a function to iterate over a tuple and print its elements.

- Write a function to find the index of a specific element in a tuple.

Tuple Packing/Unpacking :

- Write a function to pack and return multiple values as a tuple.

- Write a function to unpack a tuple returned by another function.

Tuple Membership Testing:

- Write a function to test if a given tuple is a subset of another tuple.

- Write a function to test if all elements of a tuple satisfy a condition.

Tuple Conversion:

- Write a function to convert a tuple to a list.

- Write a function to convert a list to a tuple.

Set programs

Set Creation and Manipulation Functions:

- Write a function to create a set from user input.
- Write a function to add an element to an existing set.
- Write a function to remove an element from a set.
- Write a function to perform union of two sets.
- Write a function to perform intersection of two sets.
- Write a function to perform difference between two sets.
- Write a function to perform symmetric difference between two sets.

Set Operations:

- Write a function to check if a set is a subset of another set.
- Write a function to check if two sets are disjoint.
- Write a function to check if two sets are equal.
- Write a function to find the length of a set.

Set Membership Testing:

- Write a function to test if an element exists in a set.
- Write a function to test if all elements of a set satisfy a condition.

Set Conversion:

- Write a function to convert a set to a list.
- Write a function to convert a list to a set.