Day 3

Date 8 June 2024

Daily Report

Today's training was based on two out of 4 built in data types in python used to store collections of data - Set and Dictionary.

Today's Topic covered in class

Set in Python

A Python set is well defined collection of distinct objects, called elements or objects.Sets are unordered. A set elements are unique- if you try to add an element to a set a second time, it has no effect. A set itself may be modified but the elements contained in set must be immutable.

There are two type of sets:-

1. Sets:- They are mutable and new elements can be added once sets are defined.But there are no duplicate in sets.

syntax of sets:-

```
set_name = {set_elements}
```

2. Frozen sets :- They are immutable and new elements cannot added after its defined.

syntax:-

```
set_name = frozenset([elements])
```

Set constructor

Like List and Tuple, there is set constructor used to construct the set.

set constructor:-

```
set_name = set(set_elements)
```

Operations on Sets

- Intersection operation is used to find common element in two sets.

```
first_set.intersection(second_set)
```

```
first_set & second_set
```

- Union operation is used to find all element in two sets.

```
first_set.union(second_set)
```

```
first_set | second_set
```

- Difference operation is used to find element from first set that are not present in second set.

```
first_set.difference(second_set)
```

```
first_set - second_ set
```

- Symmetric Difference is used to find element from two sets that are not common in two sets.

```
first_set.symmetric_difference(second_set)
```

```
first_set ^ second_set
```

- superset check method is used to find whether first set is superset of second set

```
first_set.issuperset(second_set)
```

```
first_set >= second_set
```

- subset check method is used to check whether fist set is subset of second set.

```
first_Set.issubset(second_set)
```

```
first_set <= second_set
```

- propersubset method is used to check whether first set is proper subset of second set

```
first_set < second_set
```

- disjoint set method is used to find whether first set is disjoint set of second set

```
first_set.isdisjoint(second_Set)
```

- To find whether an element is present in set or not "in" keyword is used.

```
element in set_name
```

```
element not in set_name
```

- Add method is used to add element in set.

```
set_name.add(element)
```

- Discard method is used to remove element from set.

```
set_name.discart(element)
```

- Remove method is used to remve element from set.

```
set_name.remove(element)
```

Dictionary in Python

A Python Dictionary is container of unordered set of objects. The items in dictionary are comma separated list of key:value pairs where keys and values are python data types.

Keys of dictionary are always unique type. As keys are used for indexing, they must be the immutable type.

syntax of dictionary

```
dictionary_name = {key:value}
```

creating a dictionary

- Using Syntax

```
dict_name = {key:value}
```

- dictionary constructor is used to create a dictionary.

```
dict_name = dict([key,value])
```

Modifying a dictionary

To modifie or access a dictionary keys are used as index.

```
dict_name[key]
```

Accesse

- To access all keys in dicionary

```
dict_name.keys()
```

- To access all value in dictionary

```
dict_name.values()
```

Methods

- Clear method is used to convert dictionary into empty dictonary

```
dict_name.clear()
```

- Get method is used to get value of particular key without geting a key error.

```
dict_name.get(key_name)
```

- Items method is convenient method to access both key and value simulteneously. It gives the list of tuple, where each tuple represent the key:value pair. here 0 index is key and 1 is for value.

```
list(dict_name.items())[index for list][index for key(0) or for value(1)]
```

- keys method is used to give list of keys.

```
dict_name.keys()
list(dict_name.keys())
```

- value method is used to get list of values.

```
dict_name.values()
```

- update method is used to include new data or merge dictionary with existed one.

```
dict1.update(dict2)
```

- pop method is used to remove or retrieve the value of specific key

```
dict1.pop(key)
```

- popitems mathod is used to remove random key:value pair

```
dict1.popitems()
```

some question to practice at home.