SNS COLLEGE OF ENGINEERING

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Department of Artificial Intelligence and Data Science

Course Name – Computational Thinking and Python Programming

I Year / I Semester

Unit 4-LISTS, TUPLES, DICTIONARIES

Dictionaries:

- Dictionary is an unordered collection of elements. An element in dictionary has a key: value pair.
- All elements in dictionary are placed inside the curly braces i.e. { }
- Elements in Dictionaries are **accessed via keys** and not by their position.
- The values of a dictionary can be any data type.
- Keys must be immutable data type (numbers, strings, tuple)

Operations on dictionary:

1. Accessing an element
2. Update
3. Add element
4. Membership

Operations	Example	Description

Creating a dictionary	>>> a={1:"one",2:"two"}
	>>> print(a)
	{1: 'one', 2: 'two'}
		Creating the dictionary with elements of different data types.

accessing an element	>>> a[1]
	'one'
	>>> a[0]
	KeyError: 0
		Accessing the elements by using keys.

Update	>>> a[1]="ONE"
	>>> print(a)
	{1: 'ONE', 2: 'two'}
		Assigning a new value to key. It replaces the old value by new value.

add element	>>> a[3]="three"
	>>> print(a)
	{1: 'ONE', 2: 'two', 3: 'three'}
		Add new element in to the dictionary with key.

membership	a={1: 'ONE', 2: 'two', 3: 'three'}
	>>> 1 in a
	True
	>>> 3 not in a
	False
		Returns True if the key is present in dictionary. Otherwise returns false.

Methods in dictionary:

Method	Example	Description

a.copy( )	a={1: 'ONE', 2: 'two', 3: 'three'}
	>>> b=a.copy()
	>>> print(b)
	{1: 'ONE', 2: 'two', 3: 'three'}
		It returns copy of the dictionary. here copy of dictionary 'a' get stored in to dictionary 'b'

a.items()	>>> a.items() dict_items([(1, 'ONE'), (2, 'two'), (3, 'three')])	Return a new view of the dictionary's items. It displays a list of dictionary's (key, value) tuple pairs.
a.keys()	>>> a.keys() dict_keys([1, 2, 3])	It displays list of keys in a dictionary
a.values()	>>> a.values() dict_values(['ONE', 'two', 'three'])	It displays list of values in dictionary

a.pop(key)	>>> a.pop(3)
	'three'
	>>> print(a)
	{1: 'ONE', 2: 'two'}
		Remove the element with *key* and return its value from the dictionary.

setdefault(key,value)	>>> a.setdefault(3,"three")
	'three'
	>>> print(a)
	{1: 'ONE', 2: 'two', 3: 'three'}
	>>> a.setdefault(2)
	'two'
		If key is in the dictionary, return its value. If key is not present, insert key with a value of dictionary and return dictionary.

a.update(dictionary)	>>> b={4:"four"}
	>>> a.update(b)
	>>> print(a)
	{1: 'ONE', 2: 'two', 3: 'three', 4: 'four'}
		It will add the dictionary with the existing dictionary

fromkeys()	>>> key={"apple","ball"}
	>>> value="for kids"
	>>> d=dict.fromkeys(key,value)
	>>> print(d)
	{'apple': 'for kids', 'ball': 'for kids'}
		It creates a dictionary from key and values.

len(a)	a={1: 'ONE', 2: 'two', 3: 'three'} >>>lena(a) 3	It returns the length of the list.
clear()	a={1: 'ONE', 2: 'two', 3: 'three'} >>>a.clear() >>>print(a) >>>{ }	Remove all elements form the dictionary.
del(a)	a={1: 'ONE', 2: 'two', 3: 'three'} >>> del(a)	It will delete the entire dictionary.