Dictionary Data Structure

We can use List,Tuple and Set to represent a group of individual objects as a single entity.

If we want to represent a group of objects as key-value pairs then we should go for Dictionary.

How to update dictionaries?

d[key]=value

If the key is not available then a new entry will be added to the dictionary with the specified key-value pair

If the key is already available then old value will be replaced with new value.

How to delete elements from dictionary?

del d[key]

It deletes entry associated with the specified key.
If the key is not available then we will get KeyError

d.clear()

To remove all entries from the dictionary

del d

To delete total dictionary.Now we cannot access d

Important functions of dictionary:

1. dict():

To create a dictionary

2. len()

Returns the number of items in the dictionary

4. get():

To get the value associated with the key

d.get(key)
If the key is available then returns the corresponding value otherwise returns None.It wont raise any error.

d.get(key,defaultvalue)
If the key is available then returns the corresponding value otherwise returns default value.

3. pop():

d.pop(key)
It removes the entry associated with the specified key and returns the corresponding value
If the specified key is not available then we will get KeyError

4. popitem():

It removes an arbitrary item(key-value) from the dictionaty and returns it.

If the dictionary is empty then we will get KeyError
d={}
print(d.popitem()) ==>KeyError: 'popitem(): dictionary is empty'

5. keys():

It returns all keys associated eith dictionary

6. values():

It returns all values associated with the dictionary

7. items():

It returns list of tuples representing key-value pairs.

[(k,v),(k,v),(k,v)]

8. copy():

To create exactly duplicate dictionary(cloned copy)

d1=d.copy();

9. setdefault():

d.setdefault(k,v)

If the key is already available then this function returns the corresponding value.

If the key is not available then the specified key-value will be added as new item to the dictionary.

10. update():

d.update(x)

All items present in the dictionary x will be added to dictionary d

Dictionary Comprehension:

Comprehension concept applicable for dictionaries also.

```
squares={x:x*x for x in range(1,6)}
print(squares)
doubles={x:2*x for x in range(1,6)}
print(doubles)

Output
{1: 1, 2: 4, 3: 9, 4: 16, 5: 25}
{1: 2, 2: 4, 3: 6, 4: 8, 5: 10}
```