Python Programming

EDUCATION FOR PEACE

(ESTD-1995)

RGM College of Engineering & Technology (Autonomous)

Department of Computer Science & Engineering

Academic Year : 2020-2021

DICTIONARY DATA TYPE - 2

Guido Van Rossum

Learning Mantra

If you really strong in the basics, then remaining things will become so easy.

Agenda:

1. Updating the Dictionary
2. Deleting the elements from Dictionary
3. Important functions/methods of Dictionary
    1. dict()
    2. len()
    3. clear()
    4. get()
    5. pop()

4. Updating the Dictionary

Syntax:

```
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.

Eg:

```
d={100:"karthi",200:"sahasra",300:"sri"}

print(d)

d[400]="sachin"

print(d)

d[100]="sourav"

print(d)
```

Output:

```
{100: 'karthi', 200: 'sahasra', 300: 'sri'}

{100: 'karthi', 200: 'sahasra', 300: 'sri', 400: 'sachin'}

{100: 'sourav', 200: 'sahasra', 300: 'sri', 400: 'sachin'}
```

5. Deleting the elements from Dictionary

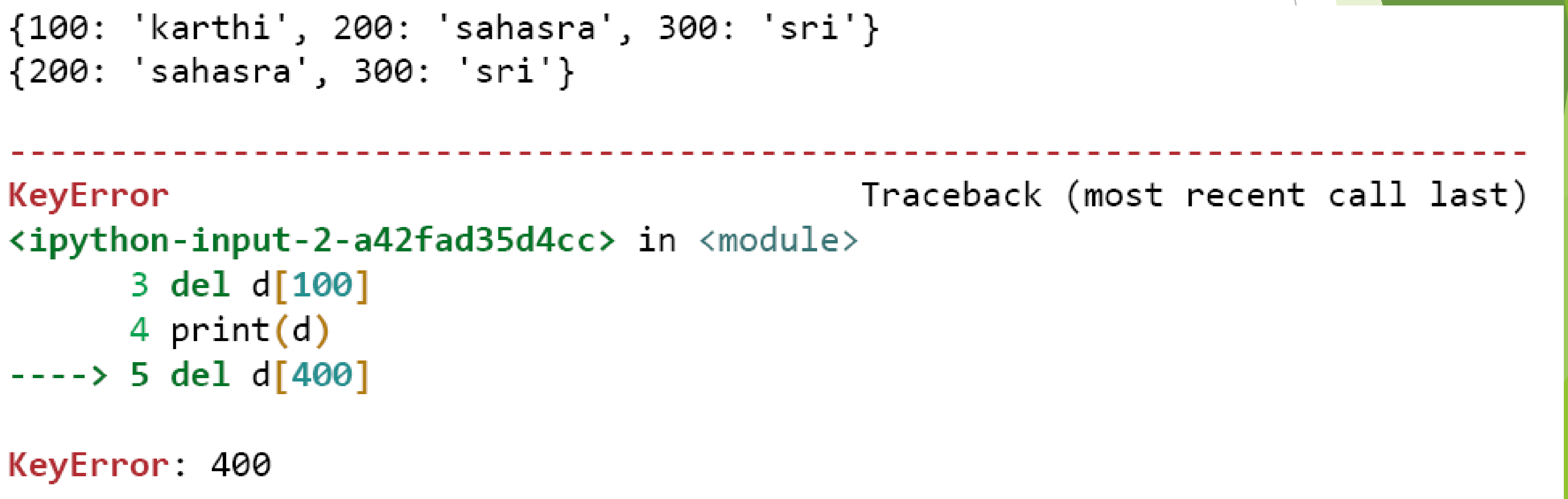
Syntax :

```
del d[key]
```

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

Eg:

```
d={100:"karthi",200:"sahasra",300:"sri"}

print(d)

del d[100]

print(d)

del d[400]
```



```
{100: 'karthi', 200: 'sahasra', 300: 'sri'}
{200: 'sahasra', 300: 'sri'}

---------------------------------------------------------------------------
KeyError                                  Traceback (most recent call last)
<ipython-input-2-a42fad35d4cc> in <module>
      3 del d[100]
      4 print(d)
----> 5 del d[400]

KeyError: 400
```

Note: Let us discuss about few more functions related to delete the contents of a dictionary.

1. clear():

- This function is used to remove all entries from the dictionary.

Eg:

```
d={100:"karthi",200:"sahasra",300:"sri"}

print(d)

d.clear()

print(d)
```

Output:

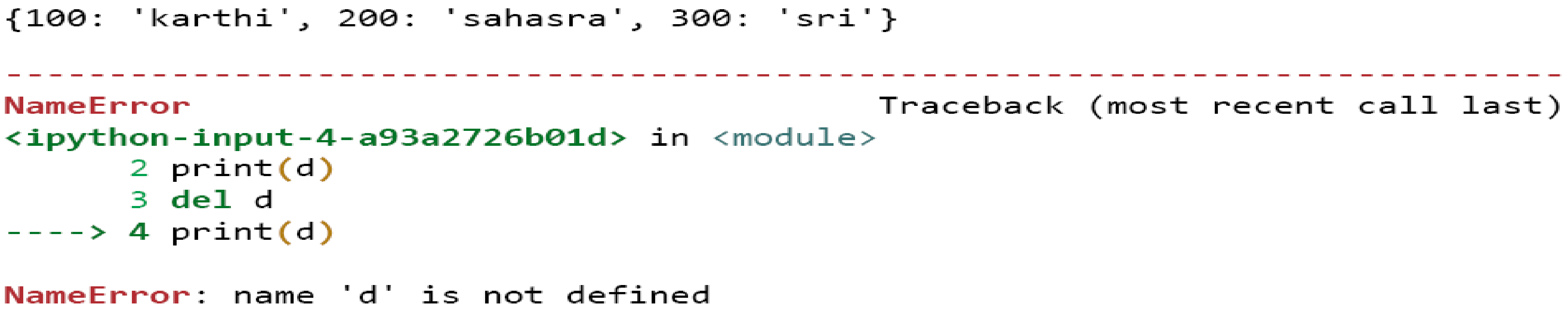
```
{100: 'karthi', 200: 'sahasra', 300: 'sri'}

{}
```

2.del:

- ❑ To delete total dictionary, we can use del command .Now we cannot access dictionary d.

Eg:

```
d={100:"karthi",200:"sahasra",300:"sri"}
print(d)
del d
print(d)          # d can not access so we will get NameError
```



```
{100: 'karthi', 200: 'sahasra', 300: 'sri'}

---------------------------------------------------------------------------
NameError                                 Traceback (most recent call last)
<ipython-input-4-a93a2726b01d> in <module>
      2 print(d)
      3 del d
----> 4 print(d)

NameError: name 'd' is not defined
```

Eg:

```
list = ['sourav','sachin','rahul']

d={100:list}            # here, value is a list which consists of multiple objects

print(d)
```

Output:

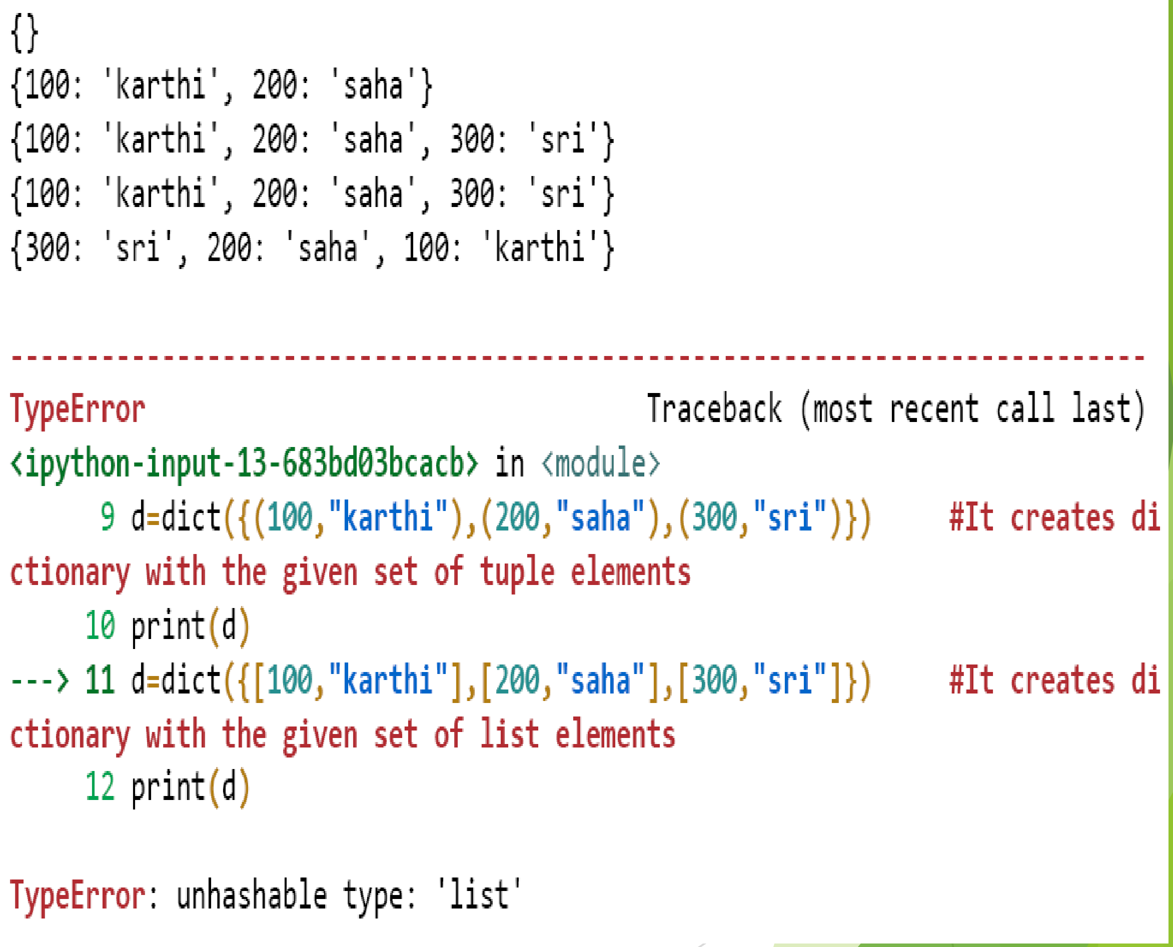
```
{100: ['sourav', 'sachin', 'rahul']}
```

6. Important functions/methods of Dictionary

1. **dict():**

- This function is used to create a dictionary.

```
d=dict()
print(d)
d=dict({100:"karthi",200:"saha"})
print(d)
d=dict([(100,"karthi"),(200,"saha"),(300,"sri")])
print(d)
d=dict(((100,"karthi"),(200,"saha"),(300,"sri")))
print(d)
d=dict({(100,"karthi"),(200,"saha"),(300,"sri")})
print(d)
d=dict({[100,"karthi"],[200,"saha"],[300,"sri"]})
print(d)
```



```
{}
{100: 'karthi', 200: 'saha'}
{100: 'karthi', 200: 'saha', 300: 'sri'}
{100: 'karthi', 200: 'saha', 300: 'sri'}
{300: 'sri', 200: 'saha', 100: 'karthi'}


---------------------------------------------------------------------------
TypeError                                 Traceback (most recent call last)
<ipython-input-13-683bd03bcacb> in <module>
      9 d=dict({(100,"karthi"),(200,"saha"),(300,"sri")})     #It creates di
ctionary with the given set of tuple elements
     10 print(d)
---> 11 d=dict({[100,"karthi"],[200,"saha"],[300,"sri"]})     #It creates di
ctionary with the given set of list elements
     12 print(d)

TypeError: unhashable type: 'list'
```

Note :

- Compulsory internally we need to take tuple only is acceptable. If you take list it gives the above specified error.
- If the key values are available in the form of tuple, then all those tuple values can be converted into dictionary by using 'dict()' function.

2. len():

- Returns the number of items in the dictionary.

Eg:

```
d=dict({100:"karthi",200:"saha"})        #It creates dictionary with specified elements

print(d)

print(len(d))
```

Output:

```
{100: 'karthi', 200: 'saha'}

2
```

3. clear():

- To remove all elements from the dictionary.

Eg:

```
d=dict({100:"karthi",200:"saha"}) #It creates dictionary with specified elements

print(d)

d.clear()

print(d)
```

Output:

```
{100: 'karthi', 200: 'saha'}

{ }
```

4. get():

- To get the value associated with the key.
- Two forms of get() method is available in Python.

i. d.get(key):

- If the key is available then returns the corresponding value otherwise returns None. It wont raise any error.

Eg:

```
d=dict({100:"karthi",200:"saha"})          #It creates dictionary with specified elements
print(d.get(100))
```

Output:

```
karthi
```

Eg:

```
d=dict({100:"karthi",200:"saha"})  #It creates dictionary with specified elements

print(d.get(500))
```

Output:

```
None
```

ii. d.get(key,defaultvalue)

- If the key is available then returns the corresponding value otherwise returns default value.

Eg:

```
d=dict({100:"karthi",200:"saha"})  #It creates dictionary with specified elements
print(d.get(100,'ravan'))
```

Output:

```
karthi
```

Eg:

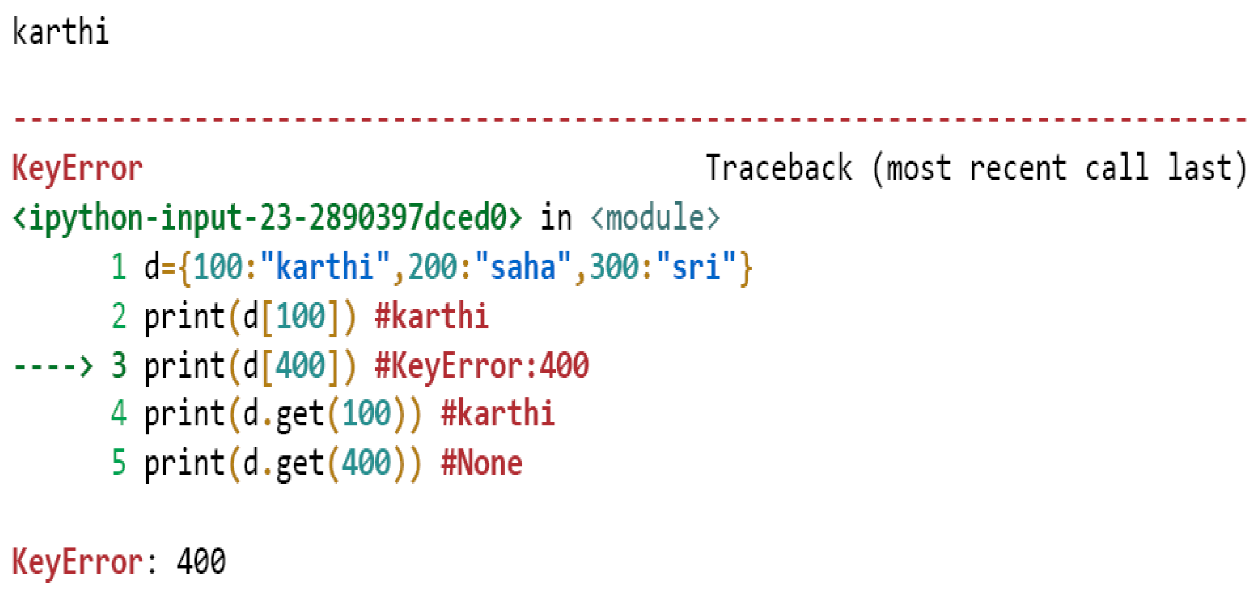
```
d=dict({100:"karthi",200:"saha"})        #It creates dictionary with specified elements

print(d.get(500,'ravan'))

print(d)
```

Output:

```
ravan

{100: 'karthi', 200: 'saha'}
```

Another Example :

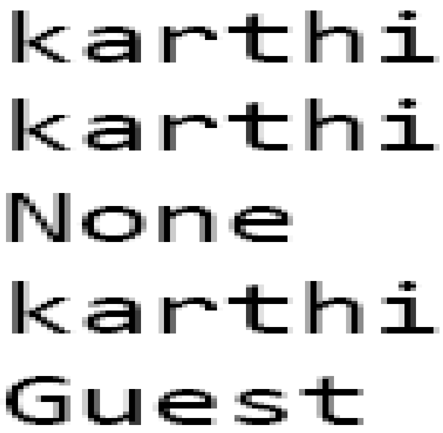
```
d={100:"karthi",200:"saha",300:"sri"}

print(d[100]) #karthi

print(d[400]) #KeyError:400

print(d.get(100)) #karthi

print(d.get(400)) #None

print(d.get(100,"Guest")) #karthi

print(d.get(400,"Guest")) #Guest
```



```
karthi

---------------------------------------------------------------------------
KeyError                                  Traceback (most recent call last)
<ipython-input-23-2890397dced0> in <module>
      1 d={100:"karthi",200:"saha",300:"sri"}
      2 print(d[100]) #karthi
----> 3 print(d[400]) #KeyError:400
      4 print(d.get(100)) #karthi
      5 print(d.get(400)) #None

KeyError: 400
```

Eg:

```
d={100:"karthi",200:"saha",300:"sri"}

print(d[100])    #karthi

#print(d[400]) #KeyError:400

print(d.get(100)) #karthi

print(d.get(400)) #None

print(d.get(100,"Guest")) #karthi

print(d.get(400,"Guest")) #Guest
```



```
karthi
karthi
None
karthi
Guest
```

5. pop():

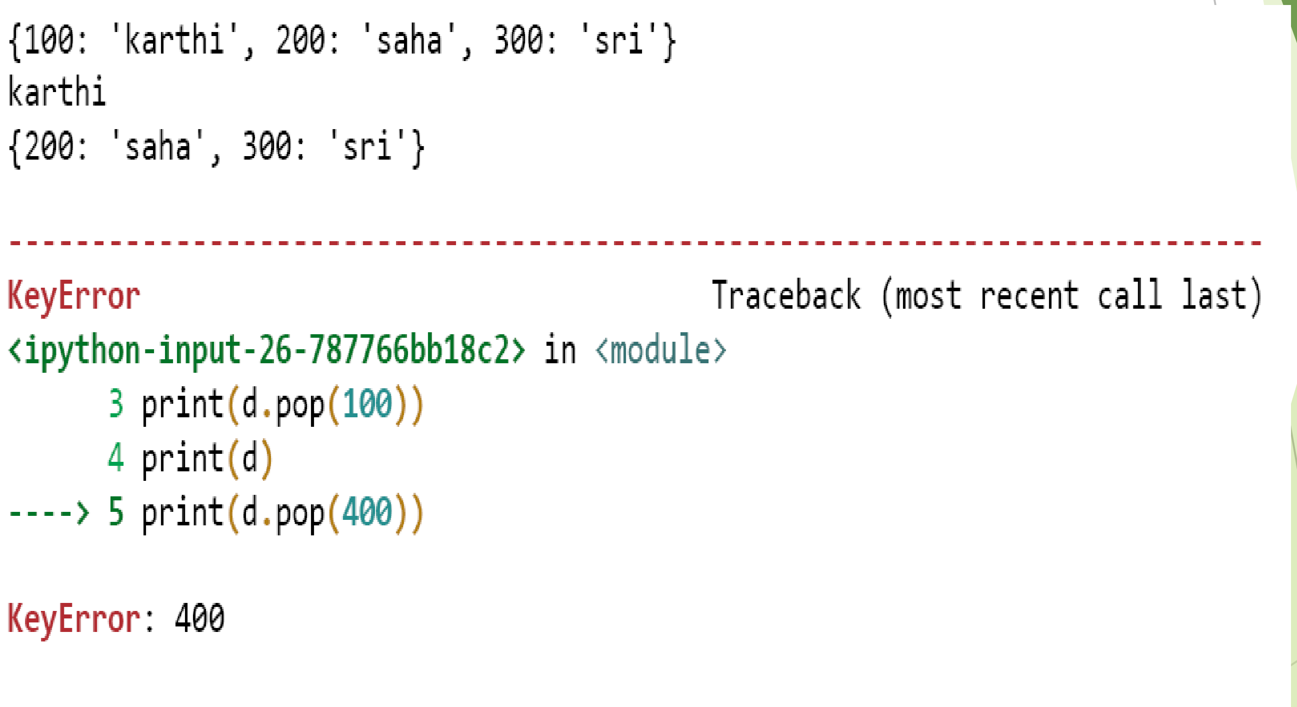
Syntax :

```
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.

Eg:

```
d={100:"karthi",200:"saha",300:"sri"}

print(d)

print(d.pop(100))

print(d)

print(d.pop(400))
```



```
{100: 'karthi', 200: 'saha', 300: 'sri'}
karthi
{200: 'saha', 300: 'sri'}

---------------------------------------------------------------------------
KeyError                                  Traceback (most recent call last)
<ipython-input-26-787766bb18c2> in <module>
      3 print(d.pop(100))
      4 print(d)
----> 5 print(d.pop(400))

KeyError: 400
```

Any question?

If you try to practice programs yourself, then you will learn many things automatically

Spend few minutes and then enjoy the study

Thank You