

BCA – 502: Python Programming

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In today's Class we have discussed on Built-in Dictionary Methods of Python.

Dictionary manipulation using in build methods:-

Python includes the following built-in methods to manipulate Dictionary –

1. Dictionary cmp() Method:-

Python dictionary method **cmp()** compares two dictionaries based on key and values.

Syntax

Following is the syntax for cmp() method –

`cmp(dict1, dict2)`

Here,

dict1 – This is the first dictionary to be compared with dict2.

dict2 – This is the second dictionary to be compared with dict1.

Return Value:-

This method returns 0 if both dictionaries are equal, -1 if dict1 < dict2 and 1 if dict1 > dict2.

Example

```
#!/usr/bin/python
```

```
dict1 = {'Name': 'Rahul', 'Age': 29};
```

```
dict2 = {'Name': 'Virat', 'Age': 27};
```

```
dict3 = {'Name': 'Rohit', 'Age': 27};
```

```
dict4 = {'Name': 'Rahul', 'Age': 29};
```

```
print "Return Value : %d" % cmp (dict1, dict2)
```

```
print "Return Value : %d" % cmp (dict2, dict3)
```

```
print "Return Value : %d" % cmp (dict1, dict4)
```

Output:-

Return Value : 1

Return Value : 1

Return Value : 0

2. Dictionary len() Method:-

Python dictionary method len() gives the total length of the dictionary. This would be equal to the number of items in the dictionary.

Syntax:-

```
len(dict)
```

Here,

dict – This is the dictionary, whose length needs to be calculated.

Return Value

This method returns the length.

Example

```
#!/usr/bin/python  
  
dict = {'Name': 'Rahul', 'Age': 29};  
print "Length : %d" % len (dict)
```

Output:-

Length : 2

3. Dictionary str() Method:-

Python dictionary method str() produces a printable string representation of a dictionary.

Syntax –

```
str(dict)
```

Here,

dict – This is the dictionary.

Return Value

This method returns string representation.

Example

```
#!/usr/bin/python
```

```
dict = {'Name': 'Rahul', 'Age': 29};
```

```
print "Equivalent String : %s" % str (dict)
```

Output:-

```
Equivalent String : {'Age': 29, 'Name': 'Rahul'}
```

4. Dictionary type() Method:-

Python dictionary method type() returns the type of the passed variable. If passed variable is dictionary then it would return a dictionary type.

Syntax:-

```
type(dict)
```

Here,

dict – This is the dictionary.

Return Value

This method returns the type of the passed variable.

Example:-

```
#!/usr/bin/python  
dict = {'Name': 'Rahul', 'Age': 29};  
print "Variable Type : %s" % type(dict)
```

Output:-

Variable Type : <type 'dict'>

5. Dictionary clear() Method:-

Python dictionary method clear() removes all items from the dictionary.

Syntax

```
dict.clear()
```

Example

```
#!/usr/bin/python  
dict = {'Name': 'Rahul', 'Age': 29};  
print "Start Len : %d" % len(dict)  
dict.clear()  
print "End Len : %d" % len(dict)
```

Output:-

Start Len : 2

End Len : 0

6. Dictionary copy() Method:-

Python dictionary method copy() returns a shallow copy of the dictionary.

Syntax:-

```
dict.copy()
```

Return Value

This method returns a shallow copy of the dictionary.

Example:-

```
#!/usr/bin/python  
dict1 = {'Name': 'Rahul', 'Age': 29};  
dict2 = dict1.copy()  
print "New Dictionary : %s" % str(dict2)
```

Output:-

New Dictionary : {'Age': 29, 'Name': 'Rahul'}

7. Dictionary fromkeys() Method:-

Python dictionary method fromkeys() creates a new dictionary with keys from seq and values set to value.

Syntax:-

```
dict.fromkeys(seq[, value])
```

Here,

seq – This is the list of values which would be used for dictionary keys preparation.

value – This is optional, if provided then value would be set to this value

Return Value

This method returns the list.

Example:-

```
#!/usr/bin/python
```

```
seq = ('name', 'age', 'Gender')
```

```
dict = dict.fromkeys(seq)
```

```
print "New Dictionary : %s" % str(dict)
```

```
dict = dict.fromkeys(seq, 10)
```

```
print "New Dictionary : %s" % str(dict)
```

Output:-

New Dictionary : {'age': None, 'name': None, 'Gender': None}

New Dictionary : {'age': 10, 'name': 10, 'Gender': 10}

8. Dictionary get() Method:-

Python dictionary method get() returns a value for the given key. If key is not available then returns default value None.

Syntax:-

```
dict.get(key, default = None)
```

Here,

key – This is the Key to be searched in the dictionary.

default – This is the Value to be returned in case key does not exist.

Return Value

This method return a value for the given key. If key is not available, then returns default value None.

Example:-

```
#!/usr/bin/python
```

```
dict = {'Name': 'Rahul', 'Age': 29}
```



```
print "Value : %s" % dict.get('Age')  
print "Value : %s" % dict.get('Education')  
print "Value : %s" % dict.get('Education', "Ph.D")
```

Output:-

Value : 29

Value : None

Value : Ph.D

9. Dictionary has_key() Method:-

Python dictionary method `has_key()` returns true if a given key is available in the dictionary, otherwise it returns a false.

Syntax

```
dict.has_key(key)
```

Here,

key – This is the Key to be searched in the dictionary.

Return Value

This method return true if a given key is available in the dictionary, otherwise it returns a false.

Example:-

```
#!/usr/bin/python
```

```
dict = {'Name': 'Rahul', 'Age': 29}
```

```
print "Value : %s" % dict.has_key('Age')
```

```
print "Value : %s" % dict.has_key('Gender')
```

Output:-

Value : True

Value : False

10. Dictionary items() Method:-

Python dictionary method items() returns a list of dict's (key, value) tuple pairs.

Syntax:-

```
dict.items()
```

Return Value

This method returns a list of tuple pairs.

Example

```
#!/usr/bin/python
```

```
dict = {'Name': 'Rahil', 'Age': 29}
print "Value : %s" % dict.items()
```

Output:-

Value : [('Age', 29), ('Name', 'Rahul')]

11. Dictionary keys() Method:-

Python dictionary method keys() returns a list of all the available keys in the dictionary.

Syntax:-

```
dict.keys()
```

Return Value

This method returns a list of all the available keys in the dictionary.

Example:-

```
#!/usr/bin/python
dict = {'Name': 'Rahul', 'Age': 29}
print "Value : %s" % dict.keys()
```

Output:-

Value : ['Age', 'Name']

12. Dictionary.setdefault() Method:-

Python dictionary method setdefault() is similar to get(), but will set dict[key]=default if key is not already in dict.

Syntax:-

```
dict.setdefault(key, default=None)
```

Here,

key – This is the key to be searched.

default – This is the Value to be returned in case key is not found.

Return Value

This method returns the key value available in the dictionary and if given key is not available then it will return provided default value.

Example:-

```
#!/usr/bin/python
```

```
dict = {'Name': 'Rahul', 'Age': 29}
```

```
print "Value : %s" % dict.setdefault('Age', None)
```

```
print "Value : %s" % dict.setdefault('Gender', None)
```

Output:-

Value : 29

Value : None

13. Dictionary update() Method:-

Python dictionary method update() adds dictionary dict2's key-values pairs in to dict. This function does not return anything.

Syntax:-

```
dict.update(dict2)
```

Here,

dict2 – This is the dictionary to be added into dict.

Return Value

This method does not return any value.

Example:-

```
#!/usr/bin/python
```

```
dict = {'Name': 'Rahul', 'Age': 29}
```

```
dict2 = {'Gender': 'Male' }
```

```
dict.update(dict2)
print "Value : %s" % dict
```

Output:-

Value : {'Age': 29, 'Name': 'Rahul', 'Gender': 'male'}

14. Dictionary values() Method:-

Python dictionary method values() returns a list of all the values available in a given dictionary.

Syntax:-

```
dict.values()
```

Return Value

This method returns a list of all the values available in a given dictionary.

Example:-

```
#!/usr/bin/python
dict = {'Name': 'Rahul', 'Age': 29}
print "Value : %s" % dict.values()
```

Output:-

Value : [29, 'Rahul']