Dict Eng

February 6, 2023

[1]:
```
d = {}
```

[2]:
```
type(d)
```

[2]:
```
dict
```

[3]:
```
d1 = {"name" : "sudh" , "emiil_id" : "ss@gmail.com" , "number" :234324}
```

[4]:
```
type(d1)
```

[4]:
```
dict
```

[5]:
```
d1
```

[5]:
```
{'name': 'sudh', 'emiil_id': 'ss@gmail.com', 'number': 234324}
```

[7]:
```
d2 = {"name" : "sudh" , "name" : "sudhanshu"}
```

[8]:
```
d2
```

[8]:
```
{'name': 'sudhanshu'}
```

[9]:
```
d3 = {234234 : "abc"}
```

[10]:
```
d3
```

[10]:
```
{234234: 'abc'}
```

[11]:
```
d4 = {234.45 : "abc"}
```

[12]:
```
d4
```

[12]:
```
{234.45: 'abc'}
```

[13]:
```
d5 = {True : "abc"}
```

[14]:
```
d5
```

[14]:
```
{True: 'abc'}
```

[15]:
```
d6 = {# : "abc"}
```

```
  Cell In[15], line 1
    d6 = {# : "abc"}
                     ^
SyntaxError: incomplete input
```

[16]:
```
d7 = {@ : "abc"}
```

```
  Cell In[16], line 1
    d7 = {@ : "abc"}
          ^
SyntaxError: invalid syntax
```

[17]:
```
d8 = {[1,2,3] :"abc"}
```

```
---------------------------------------------------------------------------
TypeError                                 Traceback (most recent call last)
Cell In[17], line 1
----> 1 d8 = {[1,2,3] :"abc"}

TypeError: unhashable type: 'list'
```

[18]:
```
d9 = {(1,2,3) : "abc"}
```

[19]:
```
d9
```

[19]:
```
{(1, 2, 3): 'abc'}
```

[20]:
```
d10 = {{1,2,3} :"abc"}
```

```
---------------------------------------------------------------------------
TypeError                                 Traceback (most recent call last)
Cell In[20], line 1
----> 1 d10 = {{1,2,3} :"abc"}

TypeError: unhashable type: 'set'
```

[21]:
```
d11 = {{"key":234} : "abc"}
```

```
---------------------------------------------------------------------------
TypeError                                 Traceback (most recent call last)
Cell In[21], line 1
----> 1 d11 = {{"key":234} : "abc"}

TypeError: unhashable type: 'dict'
```

[22]:
```
d12 = {"course_name" : ["data science master" , "web dev" ,"java with dsa and␣
↪system Design"]}
```

[23]:
```
d12
```

[23]:
```
{'course_name': ['data science master',
  'web dev',
  'java with dsa and system Design']}
```

[24]:
```
d13 = {"key" : (1,2,3,4,5)}
```

[25]:
```
d14 = {"key" :{1,2,3,4}}
```

[26]:
```
d15 = {"key" : {"name" : "sudhanshu" , "class" : "DSM"}}
```

[27]:
```
d15
```

[27]:
```
{'key': {'name': 'sudhanshu', 'class': 'DSM'}}
```

[30]:
```
d16 = {"batch_name" :["data science masters" , "web dev" , "JDS"] ,␣
↪"start_date": (28,14,21),"mentor_name" : {"krish naik", "sudhanshu" ,␣
↪"hitesh", "anurag" , "navin","hayder"}}
```

[31]:
```
d16
```

[31]:
```
{'batch_name': ['data science masters', 'web dev', 'JDS'],
 'start_date': (28, 14, 21),
 'mentor_name': {'anurag',
  'hayder',
  'hitesh',
  'krish naik',
  'navin',
  'sudhanshu'}}
```

[32]:
```
d16["timing"] = (8 , 8 ,8)
```

[33]:
```
d16
```

[33]:
```
{'batch_name': ['data science masters', 'web dev', 'JDS'],
 'start_date': (28, 14, 21),
 'mentor_name': {'anurag',
  'hayder',
  'hitesh',
  'krish naik',
  'navin',
  'sudhanshu'},
 'timing': (8, 8, 8)}
```

[34]:
```
d16['batch_name']
```

[34]:
```
['data science masters', 'web dev', 'JDS']
```

[36]:
```
type(d16['mentor_name'])
```

[36]:
```
set
```

[37]:
```
d16["key"]
```

```
---------------------------------------------------------------------------
KeyError                                  Traceback (most recent call last)
Cell In[37], line 1
----> 1 d16["key"]

KeyError: 'key'
```

[40]:
```
d16["name"]  = "sudhanshu"
```

[41]:
```
d16
```

[41]:
```
{'batch_name': ['data science masters', 'web dev', 'JDS'],
 'start_date': (28, 14, 21),
 'mentor_name': {'anurag',
  'hayder',
  'hitesh',
  'krish naik',
  'navin',
  'sudhanshu'},
 'timing': (8, 8, 8),
 'name': 'sudhanshu'}
```

[43]:
```
d16['name'].upper()
```

[43]:
```
'SUDHANSHU'
```

[45]:
```
d15
```

[45]:
```
{'key': {'name': 'sudhanshu', 'class': 'DSM'}}
```

[46]:
```
d15['key']
```

[46]:
```
{'name': 'sudhanshu', 'class': 'DSM'}
```

[47]:
```
type(d15['key'])
```

[47]:
```
dict
```

[48]:
```
d15['key']['class']
```

[48]:
```
'DSM'
```

[49]:
```
d15
```

[49]:
```
{'key': {'name': 'sudhanshu', 'class': 'DSM'}}
```

[51]:
```
d15["key1"] = "abc"
```

[52]:
```
d15
```

[52]:
```
{'key': {'name': 'sudhanshu', 'class': 'DSM'}, 'key1': 'abc'}
```

[53]:
```
del d15['key1']
```

[54]:
```
d15
```

[54]:
```
{'key': {'name': 'sudhanshu', 'class': 'DSM'}}
```

[55]:
```
d15.clear()
```

[56]:
```
d15
```

[56]:
```
{}
```

[57]:
```
len(d16)
```

[57]:
```
5
```

[58]:
```
d16
```

[58]:
```
{'batch_name': ['data science masters', 'web dev', 'JDS'],
 'start_date': (28, 14, 21),
 'mentor_name': {'anurag',
```

```
 'hayder',
 'hitesh',
 'krish naik',
 'navin',
 'sudhanshu'},
'timing': (8, 8, 8),
'name': 'sudhanshu'}
```

[59]:
```
d16.keys()
```

[59]:
```
dict_keys(['batch_name', 'start_date', 'mentor_name', 'timing', 'name'])
```

[60]:
```
d16.values()
```

[60]:
```
dict_values([['data science masters', 'web dev', 'JDS'], (28, 14, 21),
{'anurag', 'sudhanshu', 'hayder', 'navin', 'krish naik', 'hitesh'}, (8, 8, 8),
'sudhanshu'])
```

[61]:
```
list(d16.values())
```

[61]:
```
[['data science masters', 'web dev', 'JDS'],
 (28, 14, 21),
 {'anurag', 'hayder', 'hitesh', 'krish naik', 'navin', 'sudhanshu'},
 (8, 8, 8),
 'sudhanshu']
```

[62]:
```
list(d16.keys())
```

[62]:
```
['batch_name', 'start_date', 'mentor_name', 'timing', 'name']
```

[64]:
```
list(d16.items())
```

[64]:
```
[('batch_name', ['data science masters', 'web dev', 'JDS']),
 ('start_date', (28, 14, 21)),
 ('mentor_name',
  {'anurag', 'hayder', 'hitesh', 'krish naik', 'navin', 'sudhanshu'}),
 ('timing', (8, 8, 8)),
 ('name', 'sudhanshu')]
```

[65]:
```
d16
```

[65]:
```
{'batch_name': ['data science masters', 'web dev', 'JDS'],
 'start_date': (28, 14, 21),
 'mentor_name': {'anurag',
  'hayder',
  'hitesh',
  'krish naik',
```

```
 'navin',
 'sudhanshu'},
'timing': (8, 8, 8),
'name': 'sudhanshu'}
```

[66]:
```
d17 = d16.copy()
```

[67]:
```
d17
```

[67]:
```
{'batch_name': ['data science masters', 'web dev', 'JDS'],
 'start_date': (28, 14, 21),
 'mentor_name': {'anurag',
  'hayder',
  'hitesh',
  'krish naik',
  'navin',
  'sudhanshu'},
 'timing': (8, 8, 8),
 'name': 'sudhanshu'}
```

[70]:
```
del d16['name']
```

[71]:
```
d16
```

[71]:
```
{'batch_name': ['data science masters', 'web dev', 'JDS'],
 'start_date': (28, 14, 21),
 'mentor_name': {'anurag',
  'hayder',
  'hitesh',
  'krish naik',
  'navin',
  'sudhanshu'},
 'timing': (8, 8, 8)}
```

[72]:
```
d17
```

[72]:
```
{'batch_name': ['data science masters', 'web dev', 'JDS'],
 'start_date': (28, 14, 21),
 'mentor_name': {'anurag',
  'hayder',
  'hitesh',
  'krish naik',
  'navin',
  'sudhanshu'},
 'timing': (8, 8, 8),
 'name': 'sudhanshu'}
```

[68]:
```
d18 = d16
```

[73]:
```
d18
```

[73]:
```
{'batch_name': ['data science masters', 'web dev', 'JDS'],
 'start_date': (28, 14, 21),
 'mentor_name': {'anurag',
  'hayder',
  'hitesh',
  'krish naik',
  'navin',
  'sudhanshu'},
 'timing': (8, 8, 8)}
```

[74]:
```
d16
```

[74]:
```
{'batch_name': ['data science masters', 'web dev', 'JDS'],
 'start_date': (28, 14, 21),
 'mentor_name': {'anurag',
  'hayder',
  'hitesh',
  'krish naik',
  'navin',
  'sudhanshu'},
 'timing': (8, 8, 8)}
```

[75]:
```
d16.pop()
```

```
---------------------------------------------------------------------------
TypeError                                 Traceback (most recent call last)
Cell In[75], line 1
----> 1 d16.pop()

TypeError: pop expected at least 1 argument, got 0
```

[76]:
```
d16.pop('timing')
```

[76]:
```
(8, 8, 8)
```

[77]:
```
d16
```

[77]:
```
{'batch_name': ['data science masters', 'web dev', 'JDS'],
 'start_date': (28, 14, 21),
 'mentor_name': {'anurag',
  'hayder',
  'hitesh',
```

```
        'krish naik',
        'navin',
        'sudhanshu'}}
```

[78]:
```
d16.pop('mentor_name')
```

[78]:
```
{'anurag', 'hayder', 'hitesh', 'krish naik', 'navin', 'sudhanshu'}
```

[79]:
```
d16
```

[79]:
```
{'batch_name': ['data science masters', 'web dev', 'JDS'],
 'start_date': (28, 14, 21)}
```

[80]:
```
d.fromkeys((1,2,3) , ('a','b','c'))
```

[80]:
```
{1: ('a', 'b', 'c'), 2: ('a', 'b', 'c'), 3: ('a', 'b', 'c')}
```

[81]:
```
d19 = {"key1" : "value" , "key2" : "value2"}
d20 = {"key3" : "value3" , "key4" :"value4"}
```

[82]:
```
(d19,d20)
```

[82]:
```
({'key1': 'value', 'key2': 'value2'}, {'key3': 'value3', 'key4': 'value4'})
```

[83]:
```
d19.update(d20)
```

[84]:
```
d19
```

[84]:
```
{'key1': 'value', 'key2': 'value2', 'key3': 'value3', 'key4': 'value4'}
```

[85]:
```
d20
```

[85]:
```
{'key3': 'value3', 'key4': 'value4'}
```

[86]:
```
d20.update(d19)
```

[87]:
```
d20
```

[87]:
```
{'key3': 'value3', 'key4': 'value4', 'key1': 'value', 'key2': 'value2'}
```

[89]:
```
d20.get("sudh")
```

[90]:
```
d20.get("key3")
```

[90]:
```
'value3'
```

[91]:
```
d20["key3"]
```

[91]:
```
'value3'
```

[92]:
```
d20["sudh"]
```

```
---------------------------------------------------------------------------
KeyError                                  Traceback (most recent call last)
Cell In[92], line 1
----> 1 d20["sudh"]

KeyError: 'sudh'
```

Dictionary Comprehensions

[94]:
```
{i : i**2 for i in range(1,11)}
```

[94]:
```
{1: 1, 2: 4, 3: 9, 4: 16, 5: 25, 6: 36, 7: 49, 8: 64, 9: 81, 10: 100}
```

[93]:
```
list(range(1,11))
```

[93]:
```
[1, 2, 3, 4, 5, 6, 7, 8, 9, 10]
```

[95]:
```
{i : i+10 for i in range(1,11)}
```

[95]:
```
{1: 11, 2: 12, 3: 13, 4: 14, 5: 15, 6: 16, 7: 17, 8: 18, 9: 19, 10: 20}
```

[99]:
```
import math
d21 = {i :math.log10(i) for i in range(1,11)}
```

[97]:
```
d16
```

[97]:
```
{'batch_name': ['data science masters', 'web dev', 'JDS'],
 'start_date': (28, 14, 21)}
```

[98]:
```
'batch_name' in d16
```

[98]:
```
True
```

[100]:
```
d21
```

[100]:
```
{1: 0.0,
 2: 0.3010299956639812,
 3: 0.47712125471966244,
 4: 0.6020599913279624,
 5: 0.6989700043360189,
 6: 0.7781512503836436,
 7: 0.8450980400142568,
 8: 0.9030899869919435,
```

```
 9: 0.9542425094393249,
 10: 1.0}
```

[101]:
```
d21.keys()
```

[101]:
```
dict_keys([1, 2, 3, 4, 5, 6, 7, 8, 9, 10])
```

[102]:
```
for i in d21.keys():
    if i % 2 == 0 :
        print(d21[i])
```

```
0.3010299956639812
0.6020599913279624
0.7781512503836436
0.9030899869919435
1.0
```

[ ]: