Python Dictionaries

In [5]:

```
dct = {"hemant": "Engineer", "taylor": "Singer",
       "Amish": "python Developer", "Aniket": 29}
print(dct)
print(len(dct))
```

```
{'hemant': 'Engineer', 'taylor': 'Singer', 'Amish': 'python Developer', 'Ani
ket': 29}
4
```

In [9]:

```
dct = {"hemant": "Engineer", "taylor": "Singer",
       "Amish": "python Developer", "Aniket": 29,
       "color": ["red", "Black", "yellow"]}
print(dct)
```

```
{'hemant': 'Engineer', 'taylor': 'Singer', 'Amish': 'python Developer', 'Ani
ket': 29, 'color': ['red', 'Black', 'yellow']}
```

Access Dictionary Items

In [10]:

```
dct = {"hemant": "Engineer", "taylor": "Singer",
       "Amish": "python Developer", "Aniket": 29,
       "color": ["red", "Black", "yellow"]}
print(dct["Amish"])
```

```
python Developer
```

In [12]:

```
dct = {"hemant": "Engineer", "taylor": "Singer",
       "Amish": "python Developer", "Aniket": 29,
       "color": ["red", "Black", "yellow"]}
print(dct.get("Amish"))
```

```
python Developer
```

In [23]:

```
dct = {"hemant": "Engineer", "taylor": "Singer",
       "Amish": "python Developer", "Aniket": 29,
       "color": ["red", "Black", "yellow"]}
dct.keys()
```

Out[23]:

```
dict_keys(['hemant', 'taylor', 'Amish', 'Aniket', 'color'])
```

In [24]:

```
dct.values()
```

Out[24]:

```
dict_values(['Engineer', 'Singer', 'python Developer', 29, ['red', 'Black',
'yellow']])
```

In [20]:

```
dct = {"hemant": "Engineer", "taylor": "Singer",
       "Amish": "python Developer", "Aniket": 29}
dct["color"] = ["red", "Black", "yellow"]
print(dct)
```

```
{'hemant': 'Engineer', 'taylor': 'Singer', 'Amish': 'python Developer', 'Ani
ket': 29, 'color': ['red', 'Black', 'yellow']}
```

In [25]:

```
dct = {"hemant": "Engineer", "taylor": "Singer",
       "Amish": "python Developer", "Aniket": 29}
dct["Aniket"] = 30
print(dct)
```

```
{'hemant': 'Engineer', 'taylor': 'Singer', 'Amish': 'python Developer', 'Ani
ket': 30}
```

In [26]:

```
dct = {"hemant": "Engineer", "taylor": "Singer",
       "Amish": "python Developer", "Aniket": 29,
       "color": ["red", "Black", "yellow"]}
dct.items()
```

Out[26]:

```
dict_items([('hemant', 'Engineer'), ('taylor', 'Singer'), ('Amish', 'python
Developer'), ('Aniket', 29), ('color', ['red', 'Black', 'yellow'])])
```

In [27]:

```
dct = {"hemant": "Engineer", "taylor": "Singer",
       "Amish": "python Developer", "Aniket": 29,
       "color": ["red", "Black", "yellow"]}
print("Amish" in dct)
```

```
True
```

Change Dictionary Items

In [34]:

```
dct = {"hemant": "Engineer", "taylor": "Singer",
       "Amish": "python Developer", "Aniket": 29,
       "color": ["red", "Black", "yellow"]}
dct["hemant"] = 30
print(dct)
```

```
{'hemant': 30, 'taylor': 'Singer', 'Amish': 'python Developer', 'Aniket': 2
9, 'color': ['red', 'Black', 'yellow']}
```

In [32]:

```
dct = {"hemant": "Engineer", "taylor": "Singer",
       "Amish": "python Developer", "Aniket": 29,
       "color": ["red", "Black", "yellow"]}
dct.update({"hemant": 30})
print(dct)
dct.update({"color": "Black"})
print(dct)
```

```
{'hemant': 30, 'taylor': 'Singer', 'Amish': 'python Developer', 'Aniket': 2
9, 'color': ['red', 'Black', 'yellow']}
{'hemant': 30, 'taylor': 'Singer', 'Amish': 'python Developer', 'Aniket': 2
9, 'color': 'Black'}
```

Add Dictionary Items

In [35]:

```
dct = {"hemant": "Engineer", "taylor": "Singer",
       "Amish": "python Developer", "Aniket": 29
}
dct['color'] = 'Red'
print(dct)
```

```
{'hemant': 'Engineer', 'taylor': 'Singer', 'Amish': 'python Developer', 'Ani
ket': 29, 'color': 'Red'}
```

In [37]:

```
dct = {"hemant": "Engineer", "taylor": "Singer",
       "Amish": "python Developer", "Aniket": 29
}
dct.update({'color': 'Red'})
print(dct)
```

```
{'hemant': 'Engineer', 'taylor': 'Singer', 'Amish': 'python Developer', 'Ani
ket': 29, 'color': 'Red'}
```

Remove Dictionary Items

In [38]:

```
dct = {"hemant": "Engineer", "taylor": "Singer",
       "Amish": "python Developer", "Aniket": 29,
       "color": ["red", "Black", "yellow"]}
dct.pop("Amish")
print(dct)
```

```
{'hemant': 'Engineer', 'taylor': 'Singer', 'Aniket': 29, 'color': ['red', 'B
lack', 'yellow']}
```

In [40]:

```
dct = {"hemant": "Engineer", "taylor": "Singer",
       "Amish": "python Developer", "Aniket": 29,
       "color": ["red", "Black", "yellow"]}
dct.popitem()
print(dct)
```

```
{'hemant': 'Engineer', 'taylor': 'Singer', 'Amish': 'python Developer', 'Ani
ket': 29}
```

In [41]:

```
dct = {"hemant": "Engineer", "taylor": "Singer",
       "Amish": "python Developer", "Aniket": 29,
       "color": ["red", "Black", "yellow"]}
del dct['Aniket']
print(dct)
```

```
{'hemant': 'Engineer', 'taylor': 'Singer', 'Amish': 'python Developer', 'col
or': ['red', 'Black', 'yellow']}
```

In [43]:

```
dct = {"hemant": "Engineer", "taylor": "Singer",
       "Amish": "python Developer", "Aniket": 29,
       "color": ["red", "Black", "yellow"]}
dct.clear()
print(dct)
```

```
{}
```

Loop Dictionaries

In [49]:

```
dct = {"hemant": "Engineer", "taylor": "Singer",
       "Amish": "python Developer", "Aniket": 29,
       "color": ["red", "Black", "yellow"]}
for x in dct:
    print(x)
```

```
hemant
taylor
Amish
Aniket
color
```

In [54]:

```
dct = {"hemant": "Engineer", "taylor": "Singer",
       "Amish": "python Developer", "Aniket": 29,
       "color": ["red", "Black", "yellow"]}
for x in dct.keys():
    print(x)
```

```
hemant
taylor
Amish
Aniket
color
```

In [52]:

```
dct = {"hemant": "Engineer", "taylor": "Singer",
       "Amish": "python Developer", "Aniket": 29,
       "color": ["red", "Black", "yellow"]}
for x in dct:
    print(dct[x])
```

```
Engineer
Singer
python Developer
29
['red', 'Black', 'yellow']
```

In [53]:

```
dct = {"hemant": "Engineer", "taylor": "Singer",
       "Amish": "python Developer", "Aniket": 29,
       "color": ["red", "Black", "yellow"]}
for x in dct.values():
    print(x)
```

```
Engineer
Singer
python Developer
29
['red', 'Black', 'yellow']
```

In [56]:

```
dct = {"hemant": "Engineer", "taylor": "Singer",
       "Amish": "python Developer", "Aniket": 29,
       "color": ["red", "Black", "yellow"]}
for x, y in dct.items():
    print(x, 'is', y)
```

```
hemant is Engineer
taylor is Singer
Amish is python Developer
Aniket is 29
color is ['red', 'Black', 'yellow']
```

Copy Dictionaries

In [57]:

```
dct = {"hemant": "Engineer", "taylor": "Singer",
       "Amish": "python Developer", "Aniket": 29,
       "color": ["red", "Black", "yellow"]}
dctcopy = dct.copy()
print(dctcopy)
```

```
{'hemant': 'Engineer', 'taylor': 'Singer', 'Amish': 'python Developer', 'Ani
ket': 29, 'color': ['red', 'Black', 'yellow']}
```

In [58]:

```
dct = {"hemant": "Engineer", "taylor": "Singer",
       "Amish": "python Developer", "Aniket": 29,
       "color": ["red", "Black", "yellow"]}
dctcopy = dict(dct)
print(dctcopy)
```

```
{'hemant': 'Engineer', 'taylor': 'Singer', 'Amish': 'python Developer', 'Ani
ket': 29, 'color': ['red', 'Black', 'yellow']}
```

Nested Dictionaries

In [60]:

```
child1 = {
  "name" : "Email",
  "year" : 2004
}
child2 = {
  "name" : "Tobias",
  "year" : 2007
}
child3 = {
  "name" : "Linus",
  "year" : 2011
}

parent = {
  "child1" : child1,
  "child2" : child2,
  "child3" : child3
}
print(parent)
```

```
{'child1': {'name': 'Emil', 'year': 2004}, 'child2': {'name': 'Tobias', 'yea
r': 2007}, 'child3': {'name': 'Linus', 'year': 2011}}
```

Method Description

clear() Removes all the elements from the dictionary copy() Returns a copy of the dictionary fromkeys() Returns a dictionary with the specified keys and value get() Returns the value of the specified key items() Returns a list containing a tuple for each key value pair keys() Returns a list containing the dictionary's keys pop() Removes the element with the specified key popitem() Removes the last inserted key-value pair setdefault() Returns the value of the specified key. If the key does not exist: insert the key, with the specified value update() Updates the dictionary with the specified key-value pairs values() Returns a list of all the values in the dictionary

In [80]:

```
import pandas as pd
dct = {'Method': {0: 'clear()', 1: 'copy()', 2: 'fromkeys()', 3: 'get()',
                  4: 'items()', 5: 'keys()', 6: 'pop()', 7: 'popitem()',
                  8: 'setdefault()', 9: 'update()', 10: 'values()'
                 },
       'Description': {0: 'Removes all the elements from the dictionary',
                       1: 'Returns a copy of the dictionary',
                       2: 'Returns a dictionary with the specified keys and value',
                       3: 'Returns the value of the specified key',
                       4: 'Returns a list containing a tuple for each key value pair',
                       5: "Returns a list containing the dictionary's keys",
                       6: 'Removes the element with the specified key',
                       7: 'Removes the last inserted key-value pair',
                       8: 'Returns the value of the specified key. If the key does not exis
                       9: 'Updates the dictionary with the specified key-value pairs',
                       10: 'Returns a list of all the values in the dictionary'
                      }
      }

df = pd.DataFrame(dct)
print(df.to_string())
```

```
          Method
Description
0        clear()
Removes all the elements from the dictionary
1         copy()
Returns a copy of the dictionary
2     fromkeys()                                                    Retur
ns a dictionary with the specified keys and value
3          get()
Returns the value of the specified key
4        items()                                                 Returns
a list containing a tuple for each key value pair
5         keys()
Returns a list containing the dictionary's keys
6          pop()
Removes the element with the specified key
7      popitem()
Removes the last inserted key-value pair
8   setdefault()  Returns the value of the specified key. If the key does no
t exist: insert the key, with the specified value
9       update()                                                 Updates
the dictionary with the specified key-value pairs
10      values()                                                       R
eturns a list of all the values in the dictionary
```

Python JSON

In [85]:

```
import json
dct = '''{"hemant": "Engineer", "taylor": "Singer",
       "Amish": "python Developer", "Aniket": 29,
       "color": ["red", "Black", "yellow"]}'''

y = json.loads(dct)
print(y['Amish'])
```

```
{'hemant': 'Engineer', 'taylor': 'Singer', 'Amish': 'python Developer', 'Ani
ket': 29, 'color': ['red', 'Black', 'yellow']}
```

In [86]:

```
import json
dct = {"hemant": "Engineer", "taylor": "Singer",
       "Amish": "python Developer", "Aniket": 29,
       "color": ["red", "Black", "yellow"]}

y = json.dumps(dct)
print(y)
```

```
{"hemant": "Engineer", "taylor": "Singer", "Amish": "python Developer", "Ani
ket": 29, "color": ["red", "Black", "yellow"]}
```

In [88]:

```
import json

x = json.dumps({"name": "John", "age": 30})
print(json.dumps(["apple", "bananas"]))
print(json.dumps(("apple", "bananas")))
print(json.dumps("hello"))
print(json.dumps(42))
print(json.dumps(31.76))
print(json.dumps(True))
print(json.dumps(False))
print(json.dumps(None))
print(x)
```

```
["apple", "bananas"]
["apple", "bananas"]
"hello"
42
31.76
true
false
null
{"name": "John", "age": 30}
```

In [89]:

```
import json

x = {
  "name": "John",
  "age": 30,
  "married": True,
  "divorced": False,
  "children": ("Ann","Billy"),
  "pets": None,
  "cars": [
    {"model": "BMW 230", "mpg": 27.5},
    {"model": "Ford Edge", "mpg": 24.1}
  ]
}

print(json.dumps(x))
```

```
{"name": "John", "age": 30, "married": true, "divorced": false, "children":
["Ann", "Billy"], "pets": null, "cars": [{"model": "BMW 230", "mpg": 27.5},
{"model": "Ford Edge", "mpg": 24.1}]}
```

In [90]:

```
json.dumps(x, indent=4)
```

Out[90]:

```
'{\n    "name": "John",\n    "age": 30,\n    "married": true,\n    "divorce
d": false,\n    "children": [\n        "Ann",\n        "Billy"\n    ],\n
"pets": null,\n    "cars": [\n        {\n            "model": "BMW 230",\n
"mpg": 27.5\n        },\n        {\n            "model": "Ford Edge",\n
"mpg": 24.1\n        }\n    ]\n}'
```

In [91]:

```
json.dumps(x, indent=4, separators=(". ", " = "))
```

Out[91]:

```
'{\n    "name" = "John". \n    "age" = 30. \n    "married" = true. \n    "di
vorced" = false. \n    "children" = [\n        "Ann". \n        "Billy"\n
]. \n    "pets" = null. \n    "cars" = [\n        {\n            "model" =
"BMW 230". \n            "mpg" = 27.5\n        }. \n        {\n
"model" = "Ford Edge". \n            "mpg" = 24.1\n        }\n    ]\n}'
```

In [92]:

```
json.dumps(x, indent=4, sort_keys=True)
```

Out[92]:

```
'{\n    "age": 30,\n    "cars": [\n        {\n            "model": "BMW 23
0",\n            "mpg": 27.5\n        },\n        {\n            "model": "F
ord Edge",\n            "mpg": 24.1\n        }\n    ],\n    "children": [\n
"Ann",\n        "Billy"\n    ],\n    "divorced": false,\n    "married": tru
e,\n    "name": "John",\n    "pets": null\n}'
```

In [94]:

```
import json
data = '''
[
{ "id" : "001",
"x" : "2",
"name" : "Chuck"
} ,
{ "id" : "009",
"x" : "7",
"name" : "Brent"
}
]'''

info = json.loads(data)
print('User count:', len(info))
for item in info:
    print('Name', item['name'])
    print('Id', item['id'])
    print('Attribute', item['x'])
```

```
User count: 2
Name Chuck
Id 001
Attribute 2
Name Brent
Id 009
Attribute 7
```

In [ ]:

```

```