

Python Dictionaries

```
In [4]: thisdict = {1:"A", 2:"B",3:"C"}
        print(thisdict)
        print(type(thisdict))
```

```
{1: 'A', 2: 'B', 3: 'C'}
<class 'dict'>
```

Dictionary Items

```
In [28]: thisdict = {"brand":"Ford",
                    "Mode": "Mustang",
                    "Year": 2024
                    }
        print(thisdict["Year"])
```

```
2024
```

Duplicates Not Allowed

```
In [37]: thisdict = {"brand":"Ford",
                    "Mode": "Mustang",
                    "Year": 2024,
                    "Year": 1995
                    }
        print(thisdict)
```

```
{'brand': 'Ford', 'Mode': 'Mustang', 'Year': 1995}
```

Dictionary Length

```
In [40]: print(len(thisdict))
```

```
3
```

Dictionary Items - Data Types

```
In [45]: thisdict = {"brand":"Ford",
                    "Mode": "Mustang",
                    "Year": 2024,
                    "Year": 1995,
                    "colours": ["R", "G", "B"]
                    }
```

```
}  
type(thisdict)
```

Out[45]: dict

The dict() Constructor

```
In [67]: thisdict = dict(name = "John", Model = "Mustang" , country = "Norway")  
type(thisdict)
```

Out[67]: dict

Access Dictionary Items

```
In [72]: thisdict = dict(name = "john", Age = 20, year = 1994)  
print(type(thisdict))
```

<class 'dict'>

```
In [76]: thisdict["Age"]
```

Out[76]: 20

```
In [78]: thisdict = {  
    "brand": "Ford",  
    "model": "Mustang",  
    "year": 1964  
}  
thisdict["brand"]
```

Out[78]: 'Ford'

Using get()

```
In [135... thisdict = {  
    "brand": "Ford",  
    "model": "Mustang",  
    "year": 1964  
}  
thisdict.get("model")
```

Out[135... 'Mustang'

Get Keys

```
In [138... thisdict = {1:"A",2:"B",3:"C"}  
thisdict.keys()
```

```
Out[138... dict_keys([1, 2, 3])
```

Change Dictionary Items

```
In [141... thisdict = {"Brand":"Ford", "Model":"Mustang", "Year":1998}  
print(thisdict)
```

```
{'Brand': 'Ford', 'Model': 'Mustang', 'Year': 1998}
```

```
In [143... thisdict["Year"] = 1990  
print(thisdict)
```

```
{'Brand': 'Ford', 'Model': 'Mustang', 'Year': 1990}
```

Update Dictionary

```
In [148... thisdict = {  
    "brand": "Ford",  
    "model": "Mustang",  
    "year": 1964  
}  
thisdict.update({"year": 2024})  
print(thisdict)
```

```
{'brand': 'Ford', 'model': 'Mustang', 'year': 2024}
```

```
In [150... thisdict = {  
    "brand": "Ford",  
    "model": "Mustang",  
    "year": 1964  
}  
thisdict.update({"Colur":"Red"})  
print(thisdict)
```

```
{'brand': 'Ford', 'model': 'Mustang', 'year': 1964, 'Colur': 'Red'}
```

```
In [ ]:
```

Add Dictionary Items

```
In [153... thisdict = {"brand":"Ford","model":"Mustang", "year": 2024}  
thisdict["Colour"] = "Green"
```

```
print(thisdict)
```

```
{'brand': 'Ford', 'model': 'Mustang', 'year': 2024, 'Colour': 'Green'}
```

```
In [157... thisdict = {"brand": "Ford", "Model": "Mustang", "Year": 2024}
thisdict.update({"Colour": "Purple"})
print(thisdict)
```

```
{'brand': 'Ford', 'Model': 'Mustang', 'Year': 2024, 'Colour': 'Purple'}
```

Remove Dictionary Items

```
In [160... thisdict = {"brand": "Ford", "Model": "Mustang", "Year": 2024}
print(thisdict)
```

```
{'brand': 'Ford', 'Model': 'Mustang', 'Year': 2024}
```

```
In [162... thisdict.pop("Model")
print(thisdict)
```

```
{'brand': 'Ford', 'Year': 2024}
```

```
In [164... thisdict = {"brand": "Ford", "Model": "Mustang", "Year": 2024}
print(thisdict)
```

```
{'brand': 'Ford', 'Model': 'Mustang', 'Year': 2024}
```

```
In [168... thisdict.popitem()
```

```
Out[168... ('Year', 2024)
```

```
In [170... print(thisdict)
```

```
{'brand': 'Ford', 'Model': 'Mustang'}
```

```
In [172... thisdict = {"brand": "Ford", "Model": "Mustang", "Year": 2024}
print(thisdict)
```

```
{'brand': 'Ford', 'Model': 'Mustang', 'Year': 2024}
```

```
In [176... del thisdict["brand"]
```

```
In [178... print(thisdict)
```

```
{'Model': 'Mustang', 'Year': 2024}
```

```
In [180... thisdict = {"brand": "Ford", "Model": "Mustang", "Year": 2024}
thisdict.clear()
print(thisdict)
```

```
{}
```

```
In [182... del thisdict
```

```
In [184... print(thisdict)
```

```
-----  
-  
NameError                                Traceback (most recent call las  
t)  
Cell In[184], line 1  
----> 1 print(thisdict)  
  
NameError: name 'thisdict' is not defined
```

Loop Dictionaries

```
In [187... thisdict = {  
    "brand": "Ford",  
    "model": "Mustang",  
    "year": 1964  
}  
print(thisdict)
```

```
{'brand': 'Ford', 'model': 'Mustang', 'year': 1964}
```

```
In [193... for i in enumerate(thisdict):  
    print(i)
```

```
(0, 'brand')  
(1, 'model')  
(2, 'year')
```

```
In [201... for i, var in thisdict.items():  
    print(i,var)
```

```
brand Ford  
model Mustang  
year 1964
```

Copy a Dictionary

```
In [205... thisdict = {  
    "brand": "Ford",  
    "model": "Mustang",  
    "year": 1964  
}  
newdict = thisdict.copy()  
print(newdict)
```

```
{'brand': 'Ford', 'model': 'Mustang', 'year': 1964}
```

```
In [209... thisdict = {
```

```

    "brand": "Ford",
    "model": "Mustang",
    "year": 1964,
    "colour": "Red"
}
# by using dict constructor
mydict = dict(thisdict)
print(mydict)

```

```
{'brand': 'Ford', 'model': 'Mustang', 'year': 1964, 'colour': 'Red'}
```

Nested Dictionaries

```

In [220...] myfamily = {
    "child1": {"brand": "Ford", "Colour": "Red", "Year": 1998},
    "child2": {1: "A", 2: "B", 3: "C"},
    "child3" : {
        "name" : "Linus",
        "year" : 2011
    }
}
print(myfamily)

```

```
{'child1': {'brand': 'Ford', 'Colour': 'Red', 'Year': 1998}, 'child2': {1: 'A', 2: 'B', 3: 'C'}, 'child3': {'name': 'Linus', 'year': 2011}}
```

Access Items in Nested Dictionaries

```

In [223...] myfamily = {
    "child1": {"brand": "Ford", "Colour": "Red", "Year": 1998},
    "child2": {1: "A", 2: "B", 3: "C"},
    "child3" : {
        "name" : "Linus",
        "year" : 2011
    }
}
print(myfamily)

```

```
{'child1': {'brand': 'Ford', 'Colour': 'Red', 'Year': 1998}, 'child2': {1: 'A', 2: 'B', 3: 'C'}, 'child3': {'name': 'Linus', 'year': 2011}}
```

```
In [225...] print(myfamily["child3"]["name"])
```

```
Linus
```

```

In [227...] x = ('key1', 'key2', 'key3')
print(x)

```

```
('key1', 'key2', 'key3')
```

```
In [243...] x = {'key1', 'key2', 'key3'}
```

```
y = {"A", "B", "C"}  
  
thisdict = dict.fromkeys(x,y)  
print(thisdict)
```

```
{'key3': {'C', 'A', 'B'}, 'key1': {'C', 'A', 'B'}, 'key2': {'C', 'A', 'B'}}
```

In []:

In []:

In []:

In []: