{Python Dictionaries}

What is a {Dictionary}

- Similar to a list, but uses **{key:value}** pairs.
- Items in dictionaries are **unordered** collection of items.
- Place items in **{curly braces}**

Empty {Dictionary}

items = { }

released = { }

personalInfo = { }

Dictionaries – {Key:Value} Pairs

EXAMPLE:

personalInfo = {“Name”:”Molly”, “Age”:18}

1st Item are **Keys**

2nd Item are **Values**

Dictionaries – {Key:Value} Pairs

EXAMPLE:

myCombo= {12345: “Luggage Combo”, 42: “The Answer”}

1st Item are **Keys**

2nd Item are **Values**

Dictionaries – {Key:Value} Pairs

EXAMPLE:

phonebook = {“Savannah”:”476-3321”, “Nate”:”351-7743”}

1st Item are **Keys**

2nd Item are **Values**

Dictionaries – {Multi-line}

#CREATES the dictionary

```
thisDictionary = {
  "brand": "Ford",
  "model": "Mustang",
  "year": 1964
}
print(thisDictionary)
```

#PRINTS the dictionary

EXAMPLE: Dictionaries – {Multi-line}

```
released = {
  “iPhone": “2007",
  “iPhone 3G": “2008",
  “iPhone 3GS": “2009”,
  “iPhone 4": “2010",
  “iPhone 4S": “2011",
  “iPhone 5": “2012”,
}
print(released)
```

EXAMPLE: Dictionaries – {Multi-line}

```
MLB_team = {
  “Colorado": “Rockies",
  “Boston": “Red Sox",
  “Minnesota": “Twins”,
  “Milwaukee": “Brewers",
  “Seattle": “Mariners",
}
print(MLB_team)
```

Use Google for more Examples

Search for Python Dictionary

Look at Google Images

Create and Print a {Dictionary}

```
thisDictionary = {"brand": "Ford","model": "Mustang","year": 1964}

print(thisDictionary)
```

Accessing Elements – use keys enclosed in [brackets]

thisDictionary = {"brand": "Ford","model": "Mustang","year": 1964}

```
x = thisDictionary["model"]
print(x)
```

#OUTPUT: Mustang

Accessing Elements – use keys enclosed in [brackets]

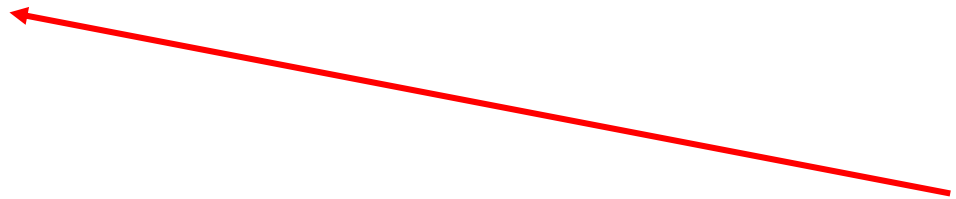
```
thisDictionary = {
  "brand": "Ford",
  "model": "Mustang",
  "year": 1964
}
```

*same as previous slide, except accessing and printing is in the same print line

```
print(thisDictionary[“model”])        # OUTPUT: Mustang
```

CHANGING Elements – use assignment operator =

```
thisDictionary = {
  "brand": "Ford",
  "model": "Mustang",
  "year": 1964
}
```



thisDictionary["year"] = 2019

print(thisDictionary)

ADDING Element to Dictionary = use new key:value

```
thisDictionary = {
  "brand": "Ford",
  "model": "Mustang",
  "year": 1964
}
```

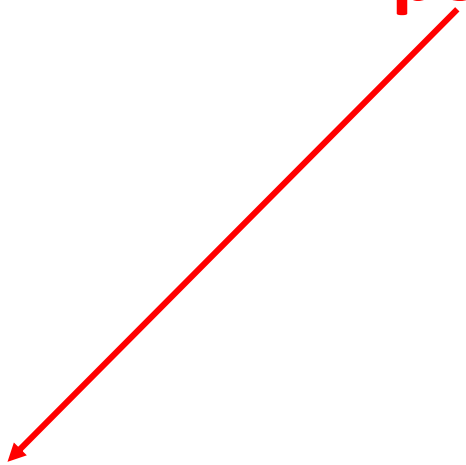
thisDictionary[“color”] = “red”

print(**thisDictionary**)

REMOVE Element in Dictionary – use pop( ) method

```
#removes an item with a specified key
thisDictionary = {
  "brand": "Ford",
  "model": "Mustang",
  "year": 1964
}
thisDictionary.pop("model" )
 print(thisDictionary)
```

****pop method uses ( )**



DELETE Element in Dictionary – use del keyword

#del keyword removes the item with the specified key name

```
thisDictionary = {
  "brand": "Ford",
  "model": "Mustang",
  "year": 1964
}
```

del thisDictionary[“model”]

```
 print(thisDictionary)
```

DELETE entire Dictionary

#del keyword removes the item with the specified key name

```
thisDictionary = {
  "brand": "Ford",
  "model": "Mustang",
  "year": 1964
}

del thisDictionary
 print(thisDictionary)
```

Check If Item Exists in Dictionary – in keyword

```
thisDictionary = {
  "brand": "Ford",
  "model": "Mustang",
  "year": 1964
}
```

```
if "model" in thisDictionary:
    print("Yes, 'model' is one of the keys in the thisDictionary dictionary")
```

Check If Item Exists in Dictionary – **in** keyword

```
thisDictionary = {
  "brand": "Ford",
  "model": "Mustang",
  "year": 1964
}
```

****OUTPUT – will be TRUE**

print("**brand**" **in** thisDictionary)

Use a for Loop Through a Dictionary – key

```
thisDictionary = {
  "brand": "Ford",
  "model": "Mustang",
  "year": 1964
}
```

```
for key in thisDictionary:
  print(key)
```

**PRINTS all key names in the Dictionary one by one

OUTPUT
brand
model
year

Use a for Loop Through a Dictionary – value

```
thisDictionary = {
  "brand": "Ford",
  "model": "Mustang",
  "year": 1964
}
for key in thisDictionary:
  print(thisDictionary[key])
```

**PRINTS all values in the Dictionary one by one

OUTPUT

Ford
Mustang
1964

Use a for Loop Through a Dictionary – key/value

```
thisDictionary = {
  "brand": "Ford",
  "model": "Mustang",
  "year": 1964
}
```

```
for key in thisDictionary:
  print(key, thisDictionary[key])
```

Prints all key/values in the Dictionary one by one

OUTPUT

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

Use a for Loop to Iterate through a Dictionary

****Search Google for more examples**

Dictionary Methods

clear( )	****See www.3schools.com or Programiz.com**
copy( )	
get( )	
items( )	
keys( )	
pop( )	
update( )	
values( )	

Built-in Functions with Dictionary

all( )	****See Programiz.com**
any( )	
len( )	
sorted( )	