{Python Dictionary}

Save As: dictionary_example.py

REVIEW: Python Collection Data Types

- **[LIST]** – elements in the **list can change**.
- The list contains the **same data type**.

REVIEW: Python Collection Data Types

- **(TUPLE)** – elements in the tuple **cannot be changed**.
- The tuple can **contain mixed data types**.

REVIEW: Python Collection Data Types

fruitList = ["apple", "banana", "cherry"]

tupleMix = (1, "Hello", 3.4)

What is a {Dictionary}

- Similar to a list, but uses **{key:value}** pairs.
- **Key** needs to be unique.
- Items in dictionaries are **unordered** collection of items that **can be changed**.
- Place items in **{curly braces}**

Empty {Dictionary}

items = { }

released = { }

personalInfo = { }

Dictionaries – {Key:Value} Pairs - key needs to be unique

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

1st Item are **Keys**

2nd Item are **Values**

Dictionaries – **{Key:Value}** Pairs - **key** needs to be unique

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

1st Item are **Keys**

2nd Item are **Values**

Dictionaries – {Key:Value} Pairs - key needs to be unique

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

1st Item are **Keys**

2nd Item are **Values**

Create and Print a {Dictionary}

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

print(**thisDictionary**) **#What is the Output?**

Create and Print a {Dictionary} – {Multi-line}

#CREATES the dictionary

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

#What is the Output?

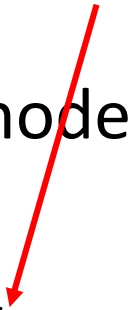
EXAMPLE: Dictionaries – {Multi-line}

```
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)
```

Accessing Elements – use keys enclosed in [brackets]



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

anyVar = **thisDictionary**["model"] **#What is OUTPUT?**

print(**anyVar**)

Accessing Elements – use keys enclosed in [brackets]

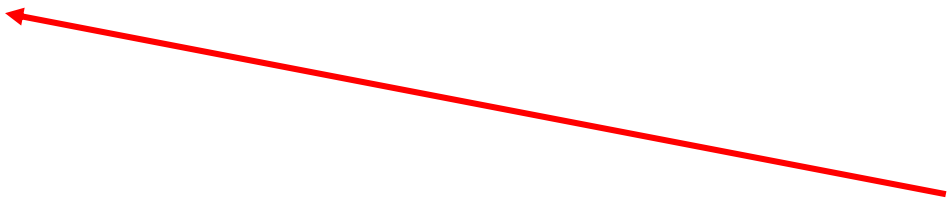
```
thisDictionary = {
  "brand": "Ford",
  "model": "Mustang",
  "year": 1964
}
```

```
print(thisDictionary[“model”])
```

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

CHANGING Elements – use = assignment operator

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

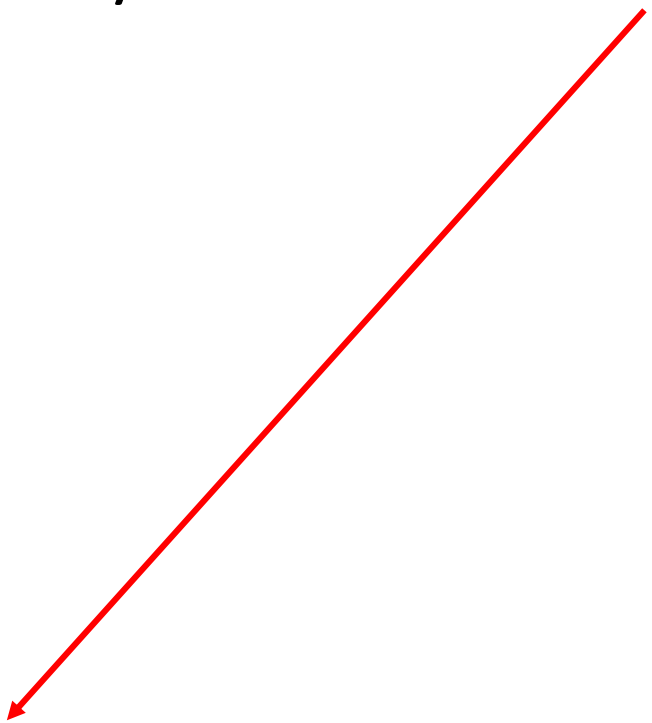


```
thisDictionary["year"] = 2019
print(thisDictionary)
```

#What is OUTPUT?

ADDING Element to Dictionary = use new key:value

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



thisDictionary[“color”] = “red”

print(**thisDictionary**)

#What is OUTPUT?

REMOVE Element in Dictionary – use pop( ) method

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

****use pop( ) method to remove an item with a specified key**

```
thisDictionary.pop("model" )
 print(thisDictionary)
```

#What is OUTPUT?

DELETE Element in Dictionary – use del keyword

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

**also use del method to remove an item with a specified key

```
del thisDictionary["model"]
 print(thisDictionary)
```

#What is OUTPUT?

Use a for Loop Through a Dictionary – print keys

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

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

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

#What is output?

Use a for Loop Through a Dictionary – print values

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

```
for yVar in thisDictionary:
  print(thisDictionary[yVar])
```

**PRINTS all values in the Dictionary one by one

#What is output?

Use a for Loop Through a Dictionary – use the values( ) function

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

**PRINTS all values in the Dictionary one by one

```
for yVar in thisDictionary.values():
  print(yVar)
```

#What is output?

Use a for Loop Through a Dictionary – key/value

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

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

Prints all key/values in the Dictionary one by one

#What is output?

Use a for Loop Through a Dictionary – use the items( ) function

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

Prints all key/values in the Dictionary one by one

```
#What is output?
for xVar, yVar in thisDictionary.items():
  print(xVar, yVar)
```

DELETE entire Dictionary

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

#What is OUTPUT?

Check If Item Exists in Dictionary – in keyword

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

if "model" in thisDictionary:

    #write a descriptive print statement
    print("Yes, 'model' is one of the keys in the thisDictionary dictionary")
```