## Dictionary

Dictionary is a type of sequential datatype that stores the values and data in **key-value** format in the curly braces. To write dictionary first of all, we have to begin with open curly brace and then write key then colon after that write value and the close the curly brace. This is how we write dictionary. One thing is noted that key is always in the double quotation mark and value if any datatype no matter. Dictionary is not indexed as it is indexed with their keys. Dictionary is ordered and we can easily change the element of dictionary but it does not allow duplicate elements. If you put duplicate element then it override the first value to present value you assign recently now.

In [3]:
```
amritDict = {
    "name":"Amrit",
    "surname":"keshari",
    "laptop":"dell",
    "marks":8.6,
    "books":2
}
print(amritDict)
```

```
{'name': 'Amrit', 'surname': 'keshari', 'laptop': 'dell', 'marks': 8.6, 'book
s': 2}
```

## Accessing Items in Dictionary

To access items in dictionary, we just have to first write the name of the dictionaryb then open square bracket and write the key of the dictionary whose value you want to fetch and then close square bracket. The whole thing you write put it into **print()** function as an argument then it preints the value in that particular key. Another way to access dictionary items is to use **items()** function after dictionary name, it shows all the items present in the dictionary. If you want to get list of keys present in the dictionary then you have to use **keys()** function after writing dictionary name. And if you want to get list of values present in the dictionary then you have to use **values()** function after writing dictionary name.

In [30]:
```
keshDict = {
    "X":67,
    "Y":76,
    "Z":98
}
print(keshDict["Y"])
print(keshDict.items())
print(keshDict.values())
print(keshDict.keys())
```

```
76
dict_items([('X', 67), ('Y', 76), ('Z', 98)])
dict_values([67, 76, 98])
dict_keys(['X', 'Y', 'Z'])
```

## Updating and Adding the Items of Dictionary

To update or change the value of the key of dictionary, we first write name of the dictionary then open square bracket and write the name of the key whose value we want to change and then close the square bracket then assign new value to it. After this just print the dictionary you will see the changes happen. If the key name is different from the dictionary keys then dictionary add the new key name and its value in the dictionary. We can also add one dictionary with other dictionary using **update(dictionary)** function that takes dictionary as an argument.

In [15]:
```
#Updationg items
stationary = {
    "book":78,
    "copy":97,
    "pen":56
}
print(stationary)
stationary["pen"]=51
print(stationary)
```

```
{'book': 78, 'copy': 97, 'pen': 56}
{'book': 78, 'copy': 97, 'pen': 51}
```

In [19]:
```
#Adding items
pen = {
    "red":4,
    "blue":6,
    "black":9
}
print(pen)
pen["green"]=21
print(pen)
```

```
{'red': 4, 'blue': 6, 'black': 9}
{'red': 4, 'blue': 6, 'black': 9, 'green': 21}
```

In [22]:
```
#Adding or concate
amritDict = {
    "A":1,
    "B":2,
    "C":3
}
keshriDict = {
    "D":4,
    "E":5
}
```

```
print(amritDict)
print(keshriDict)
amritDict.update(keshriDict)
print(amritDict)
```

```
{'A': 1, 'B': 2, 'C': 3}
{'D': 4, 'E': 5}
{'A': 1, 'B': 2, 'C': 3, 'D': 4, 'E': 5}
```

## Deleting Items in Dictionary

To delete items from the dictionary, you have to use **pop(value)** function that takes key of dictionary as an argument and delete that item. Another way to delete item from the dictionary is by using **popitem()** function that deletes directly thes last key and value pair of the dictionary that is the last item of the dictionary.

In [34]:
```
#Deleting Dictionary Item
branch = {
    "Mech":34,
    "Civil":56,
    "Electrical":33,
    "Chemical":87
}
print(branch)
branch.pop("Electrical")
print(branch)
branch.popitem()
print(branch)
```

```
{'Mech': 34, 'Civil': 56, 'Electrical': 33, 'Chemical': 87}
{'Mech': 34, 'Civil': 56, 'Chemical': 87}
{'Mech': 34, 'Civil': 56}
```

## Printing Dictionary Items

To print dictionary, we use for-each loop as we know that dictionary is not indexed just like a set so it does not allow any duplicate values right. We use membership operator to fetch each and every items of the dictionary. We can also take help of the **items()** function to print all the items of the dictionary, **keys()** to print all the keys of the dictionary and **values()** to print all the values of the dictionary.

In [46]:
```
dictOfAmrit = {
    "Trust":True,
    "Books":2,
    "Thinking":108,
    "Battery":86,
    "Name":"Amrit"
}
#For keys
for i in dictOfAmrit:
```

```
    print(i)
#For values
for i in dictOfAmrit:
    print(dictOfAmrit[i])
```

```
Trust
Books
Thinking
Battery
Name
True
2
108
86
Amrit
```

In [50]:
```
#Print using functions
dictOfKeshri = {
    "Opera":34,
    "Google":"Gemini",
    "Web":"Javascript",
    "Coding":True
}
#For keys
for i in dictOfKeshri.keys():
    print(i)
#For values
for i in dictOfKeshri.values():
    print(i)
#For items
for i in dictOfKeshri.items():
    print(i)
```

```
Opera
Google
Web
Coding
34
Gemini
Javascript
True
('Opera', 34)
('Google', 'Gemini')
('Web', 'Javascript')
('Coding', True)
```