WHAT IS HASH TABLE OR HASHMAP IN PYTHON?

* Hash table and hashmap is a type of data structure that maps keys to its value pairs.

CREATING DICTIONARIES

* Using Curly Braces:
  + Dictionary in python is represented using curly braces. Therefore, to create dictionary, you can make use of curly braces.
  + my\_dict = {'Dave':'001','Ana':'002', 'Joe':'003'}

print(my\_dict)

type(my\_dict)

Output: {'Dave': '001', 'Ana': '002', 'Joe': '003'}

Dict

* Using dict():
  + Python provides dict() function that can be used to create dictionaries by passing the key-value pairs as parameters to it.
  + new\_dict = dict(ana = '001', dave = '002')

print(new\_dict)

Output: {'ana': '001', 'dave': '002'}

NESTED DICTIONARIES

* Nested dictionaries are basically dictionaries that lie within other dictionaries.
* emp\_details = {'Employee':{'Dave':{'ID':'001', 'Designation':'Team Lead'},'Ava':{'ID':'002', 'Designation':'Associate'}}}

print(emp\_details)

Output: {'Dave':{'ID':'001', 'Designation':'Team Lead'},'Ava':{'ID':'002', 'Designation':'Associate'}}

PERFORMING OPERATIONS ON HASH TABLES

* Accessing Items
  + my\_dict['Dave']
    - '001'
  + print(my\_dict.keys())
    - dict\_keys(['Dave', 'Ana', 'Joe'])
  + print(my\_dict.values())
    - dict\_values(['001', '002', '003'])
  + print(my\_dict.get('Ana'))
    - 002
  + for x in my\_dict:

print(x)

* + - Dave
    - Ana
    - Joe
  + for x in my\_dict.values():

print(x)

* + - 001
    - 002
    - 003
  + for x,y in my\_dict.items():

print(x,y)

* + - Dave 001
    - Ana 002
    - Joe 003
* Updating Values
  + Dictionaries are mutable data types and you can update them as and when required.
  + my\_dict['Dave'] = '004'

my\_dict['Chris'] = '005'

print(my\_dict)

Output: {'Dave': '004', 'Ana': '002', 'Joe': '003', 'Chris': '005'}

* Deleting Enteries
  + my\_dict.pop('Ana')
    - '002'
  + my\_dict.popitem()
    - ('Chris', '005')
  + del my\_dict['Dave']

print(my\_dict)

Output: {'Joe': '003'}

CONVERTING DICTIONARY INTO A DATAFRAME

* Dataframe is a 2-D data structure that consists of columns of various types. It is very similar to python dictionary and you can even convert a dictionary into pandas dataframe.
* import pandas as pd

df = pd.DataFrame(emp\_details['Employee'])

print(df)

Dave Ava

ID 001 002

Designation Team Lead Associate