# A list of integers

L = [1, 2, 3]

print(L)

# A list of strings

L = ['red', 'green', 'blue']

print(L)

# A list of mixed datatypes

L = [ 1, 'abc', 1.23, (3+4j), True]

print(L)

# An empty list

L = []

print(L)

Output:

[1, 2, 3]

['red', 'green', 'blue']

[1, 'abc', 1.23, (3+4j), True]

[]

# Convert a string to a list

L = list('abc')

print(L)

# Convert a tuple to a list

L = list((1, 2, 3))

print(L)

Output:

['a', 'b', 'c']

[1, 2, 3]

L = ['a', ['bb', ['ccc', 'ddd'], 'ee', 'ff'], 'g', 'h']

print(L)

Output:

['a', ['bb', ['ccc', 'ddd'], 'ee', 'ff'], 'g', 'h']

L = ['red', 'green', 'blue', 'yellow', 'black']

print(L[0])

print(L[2])

Output:

red

blue

L = ['red', 'green', 'blue', 'yellow', 'black']

print(L[-1])

print(L[-2])

Output:

black

yellow

L = ['a', 'b', ['cc', 'dd', ['eee', 'fff']], 'g', 'h']

print(L[2][2])

print(L[2][2][0])

Output:

['eee', 'fff']

eee

L = ['a', 'b', 'c', 'd', 'e', 'f']

print(L[2:5])

print(L[0:2])

print(L[3:-1])

Output:  
['c', 'd', 'e']

['a', 'b']

['d', 'e']

L = ['red', 'green', 'blue']

L[0] = 'orange'

print(L)

L[-1] = 'violet'

print(L)

Output:

['orange', 'green', 'blue']

['orange', 'green', 'violet']

L = ['red', 'green', 'yellow']

L.append('blue')

print(L)

L = ['red', 'green', 'yellow']

L.insert(1,'blue')

print(L)

Output:

['red', 'green', 'yellow', 'blue']

['red', 'blue', 'green', 'yellow']

L = ['red', 'green', 'yellow']

L.extend([1,2,3])

print(L)

Output:

['red', 'green', 'yellow', 1, 2, 3]

# concatenation operator

L = ['red', 'green', 'blue']

L = L + [1,2,3]

print(L)

# augmented assignment operator

L = ['red', 'green', 'blue']

L += [1,2,3]

print(L)

Output:

['red', 'green', 'blue', 1, 2, 3]

['red', 'green', 'blue', 1, 2, 3]

L = ['red', 'green', 'blue']

x = L.pop(1)

print(L)

# removed item

print(x)

Output:

['red', 'blue']

Green

# Check for presence

L = ['red', 'green', 'blue']

if 'red' in L:

    print('yes')

# Check for absence

L = ['red', 'green', 'blue']

if 'yellow' not in L:

    print('yes')

Output:

yes

yes

L = ['red', 'green', 'blue']

for item in L:

    print(item)

Output:

red

green

blue

# Create a dictionary to store employee record

D = {'name': 'Bob',

     'age': 25,

     'job': 'Dev',

     'city': 'New York',

     'email': 'bob@web.com'}

print(D)

Output:

{'name': 'Bob', 'age': 25, 'job': 'Dev', 'city': 'New York', 'email': 'bob@web.com'}

# Create a dictionary with a list of two-item tuples

L = [('name', 'Bob'),

     ('age', 25),

     ('job', 'Dev')]

D = dict(L)

print(D)

Output:

{'name': 'Bob', 'age': 25, 'job': 'Dev'}

# Create a dictionary with a tuple of two-item lists

T = (['name', 'Bob'],

     ['age', 25],

     ['job', 'Dev'])

D = dict(T)

print(D)

Output:

{'name': 'Bob', 'age': 25, 'job': 'Dev'}

D = dict(name = 'Bob',

         age = 25,

         job = 'Dev')

print(D)

Output:

{'name': 'Bob', 'age': 25, 'job': 'Dev'}

#Create a dictionary with list of zipped keys/values

keys = ['name', 'age', 'job']

values = ['Bob', 25, 'Dev']

D = dict(zip(keys, values))

print(D)

Output:

{'name': 'Bob', 'age': 25, 'job': 'Dev'}

# Initialize dictionary with default value '0' for each key

keys = ['a', 'b', 'c']

defaultValue = 0

D = dict.fromkeys(keys,defaultValue)

print(D)

Output:

{'a': 0, 'b': 0, 'c': 0}

D = {'name': 'Bob',

     'age': 25,

     'name': 'Jane'}

print(D)

Output:  
{'name': 'Jane', 'age': 25}

D = {(2,2): 25,

     True: 'a',

     'name': 'Bob'}

print(D)

Output:

{(2, 2): 25, True: 'a', 'name': 'Bob'}

# values of different datatypes

D = {'a':[1,2,3],

     'b':{1,2,3}}

# duplicate values

D = {'a':[1,2],

     'b':[1,2],

     'c':[1,2]}

Output:

{'a': [1, 2, 3], 'b': {1, 2, 3}}

{'a': [1, 2], 'b': [1, 2], 'c': [1, 2]}

D = {'name': 'Bob',

     'age': 25,

     'job': 'Dev'}

print(D['name'])

Output:

Bob

D = {'name': 'Bob',

     'age': 25,

     'job': 'Dev'}

D['name'] = 'Sam'

print(D)

Output:

{'name': 'Sam', 'age': 25, 'job': 'Dev'}

D = {'name': 'Bob',

     'age': 25,

     'job': 'Dev'}

D['city'] = 'New York'

print(D)

Output:

{'name': 'Bob', 'age': 25, 'job': 'Dev', 'city': 'New York'}

D1 = {'name': 'Bob',

      'age': 25,

      'job': 'Dev'}

D2 = {'age': 30,

      'city': 'New York',

      'email': 'bob@web.com'}

D1.update(D2)

print(D1)

Output:

{'name': 'Bob', 'age': 30, 'job': 'Dev', 'city': 'New York', 'email': 'bob@web.com'}

D = {'name': 'Bob',

     'age': 25,

     'job': 'Dev'}

x = D.pop('age')

print(D)

# get removed value

print(x)

Output:

{'name': 'Bob', 'job': 'Dev'}

25

D = {'name': 'Bob',

     'age': 25,

     'job': 'Dev'}

x = D.popitem()

print(D)

# get removed pair

print(x)

Output:

{'name': 'Bob', 'age': 25}

('job', 'Dev')

D = {'name': 'Bob',

     'age': 25,

     'job': 'Dev'}

D.clear()

print(D)

Output:

{}

 D= {'name': 'Bob',

     'age': 25,

     'job': 'Dev'}

# get all keys

print(list(D.keys()))

# get all values

print(list(D.values()))

# get all pairs

print(list(D.items()))

Output:

['name', 'age', 'job']

['Bob', 25, 'Dev']

[('name', 'Bob'), ('age', 25), ('job', 'Dev')]

D= {'name': 'Bob',

     'age': 25,

     'job': 'Dev'}

for item in D:

 print(item)

Output:

name

age

job

x = y = z = "Orange"

print(x)

print(y)

print(z)

Output:

Orange

Orange

Orange

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

x, y, z = fruits

print(x)

print(y)

print(z)

Output:

apple

banana

cherry

x = "Python"

y = "is"

z = "awesome"

print(x, y, z)

Output:

Python is awesome

dict={

    "brand":"Lamborghini",

    "modle":"Urus",

    "Year":2024

    }

x=dict["modle"]

print(x)

Output:

Urus

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

print(thislist[1])

Output:

Banana

thistuple = ("apple", "banana", "cherry")

print(thistuple[1])

Output:

Banana

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

thislist.append("orange")

print(thislist)

Output:

['apple', 'banana', 'cherry', 'orange']

f=open("1.txt",'a')

f.write("I study in MITAOE Alandi")

f.close

f=open("1.txt",'r')

print(f.read())

Output:

Hello!! My name is Ganesh Atre I study in MITAOE Alandi

x = int(1)

y = int(2.8)

z = int("3")

print(x)

print(y)

print(z)

Output:

1

2

3

x = float(1)

y = float(2.8)

z = float("3")

w = float("4.2")

print(x)

print(y)

print(z)

print(w)

Output:

1.0

2.8

3.0

4.2

x = str("s1")

y = str(2)

z = str(3.0)

print(x)

print(y)

print(z)

Output:

s1

2

3.0

dict={

    "brand":"Lamborghini",

    "modle":"Urus",

    "Year":2024

    }

dict["modle"]="Aventador"

print(dict)

Output:

{'brand': 'Lamborghini', 'modle': 'Aventador', 'Year': 2024}

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

thislist[1] = "blackcurrant"

print(thislist)

Output:

['apple', 'blackcurrant', 'cherry']

thislist=["Sankalp","Tejas","Anand"]

thislist[1]="Ganesh"

print(thislist)

Output:

['Sankalp', 'Ganesh', 'Anand']

dict={

    "brand":"Lamborghini",

    "modle":"Urus",

    "Year":2024

    }

print(dict)

Output:

{'brand': 'Lamborghini', 'modle': 'Urus', 'Year': 2024}

dict={

    "brand":"Lamborghini",

    "modle":"Urus",

    "Year":2024

    }

x=dict.keys()

print(x)

Output:

dict\_keys(['brand', 'modle', 'Year'])

thisdict={'Pune':38,'Nashik':36,'Mumbai':35.6}

print(thisdict)

Output:

{'Pune': 38, 'Nashik': 36, 'Mumbai': 35.6}

thisdict={'Pune':38,'Nashik':36,'Mumbai':35.6}

x,y,z=thisdict

print(x)

print(y)

print(z)

Output:

Pune

Nashik

Mumbai

rupees=float(input("Please enter rupees:"))

dollars=rupees/82

print(dollars)

Input:Please enter rupees:800

Output:9.75609756097561

f1=open("emp1.csv",'r')

f2=open("sal.csv",'r')

f3=open("emp\_sal.csv",'w')

contents1=f1.read()

contents2=f2.read()

nm=[]

sal=[]

lines1=contents1.split("\n")

lines2=contents2.split("\n")

for l1 in lines1:

    words1=l1.split(",")

    for l2 in lines2:

        words2=l2.split(",")

        if(words1[0]==words2[0]):

          l1=l1+","+words2[1]+","+words2[2]+"\n"

          f3.write(l1)

          nm.append(words1[1])

          sal.append(int(words2[2]))

          print(l1)

          f1.close()

          f2.close()

          f3.close()

          print(nm)

          print(sal)

Output:

1,Sanvi,Manager,100000,Manager,100000

2,Mrunmayee,Sr. Manager,95000,Sr. Manager,150000

3,Jayesh,Manager,80000,Manager,90500

4,Gouri,Sr. Manager,95000,Sr. Manager,100500

5,Mahesh,Supervisor,500000,Supervisor,85000

['Sanvi', 'Mrunmayee', 'Jayesh', 'Gouri', 'Mahesh']

[100000, 150000, 90500, 100500, 85000]

f = open("emp.csv","r")

contents = f.read()

lines = contents.split("\n")

eid = []; nm = []; desgn = []; sal = [];

for l in lines:

    words = l.split(",")

    print(words)

    eid.append(int(words[0]))

    nm.append(words[1])

    desgn.append(words[2])

    sal.append(int(words[3]))

print("Employee IDs:",eid)

print("Employee Names:",nm)

print("Employee DEsignations:",desgn)

print("Employee Salary:",sal)

print("Max Salary:",max(sal))

print("Min Salary:",min(sal))

print("Avg Salary:",sum(sal)/len(sal))

Output:

['1', 'Sanvi', 'Manager', '100000']

['2', 'Mrunmayee', 'Sr. Manager', '95000']

['3', 'Jayesh', 'Manager', '80000']

['4', 'Gouri', 'Sr. Manager', '95000']

['5', 'Mahesh', 'Supervisor', '500000']

Employee IDs: [1, 2, 3, 4, 5]

Employee Names: ['Sanvi', 'Mrunmayee', 'Jayesh', 'Gouri', 'Mahesh']

Employee DEsignations: ['Manager', 'Sr. Manager', 'Manager', 'Sr. Manager', 'Supervisor']

Employee Salary: [100000, 95000, 80000, 95000, 500000]

Max Salary: 500000

Min Salary: 80000

Avg Salary: 174000.0

f = open("student.csv","r")

contents = f.read()

lines = contents.split("\n")

sid = []; nm = []; branch = []; mar = [];

for l in lines:

    words = l.split(",")

    print(words)

    sid.append(int(words[0]))

    nm.append(words[1])

    branch.append(words[2])

    mar.append(float(words[3]))

print("Student IDs:",sid)

print("Student Names:",nm)

print("Student Branch:",branch)

print("Syudent sgpa:",mar)

print("Max marks:",max(mar))

print("Min marks:",min(mar))

print("Avg marks:",sum(mar)/len(mar))

Output:

['1', 'Sankalp', 'Mechanical', '7.6']

['2', 'Tejas', 'Computer', '8.4']

['3', 'Anand', 'Civil', '7.2']

['4', 'Ganesh', 'Computer', '7.3']

['5', 'Ishika', 'Computer', '7.7']

Student IDs: [1, 2, 3, 4, 5]

Student Names: ['Sankalp', 'Tejas', 'Anand', 'Ganesh', 'Ishika']

Student Branch: ['Mechanical', 'Computer', 'Civil', 'Computer', 'Computer']

Syudent sgpa: [7.6, 8.4, 7.2, 7.3, 7.7]

Max marks: 8.4

Min marks: 7.2

Avg marks: 7.640000000000001

import csv

def top\_5\_emp(d3):

    d3.sort(key = lambda x: int(x[4]),reverse=True)

    print("Sorted Data:",d3)

    print("\n\nTop1 Employee",d3[0][1])

    print("Top2 Employee",d3[1][1])

    print("Top1 Employee",d3[2][1])

    print("Top2 Employee",d3[3][1])

    print("Top2 Employee",d3[4][1])

f1 = open("emp1.csv","r")

f2 = open("sal1.csv","r")

f3 = open("emp\_sal.csv","w")

d1=list(csv.reader(f1,delimiter=','))

d2=list(csv.reader(f2,delimiter=','))

print("\n\nFile1 Contents:",d1)

print("\n\nFile2 Contents:",d2)

d3 = []

for i in range(len(d1)):

    d3.append(d1[i] + d2[i])

print(d3)

cw = csv.writer(f3)

cw.writerows(d3)

top\_5\_emp(d3)

f1.close()

f2.close()

f3.close()

Ouput:

File1 Contents: [['1', 'Sanvi', 'Pune'], ['2', 'Mrunmayee', 'Pune'], ['3', 'Jayesh', 'Nashik'], ['4', 'Gouri', 'Nashik'], ['5', 'Mahesh', 'Pune']]

File2 Contents: [['Manager', '100000'], ['Sr. Manager', '150000'], ['Manager', '90500'], ['Sr. Manager', '100500'], ['Supervisor', '85000']]

[['1', 'Sanvi', 'Pune', 'Manager', '100000'], ['2', 'Mrunmayee', 'Pune', 'Sr. Manager', '150000'], ['3', 'Jayesh', 'Nashik', 'Manager', '90500'], ['4', 'Gouri', 'Nashik', 'Sr. Manager', '100500'], ['5', 'Mahesh', 'Pune', 'Supervisor', '85000']]

Sorted Data: [['2', 'Mrunmayee', 'Pune', 'Sr. Manager', '150000'], ['4', 'Gouri', 'Nashik', 'Sr. Manager', '100500'], ['1', 'Sanvi', 'Pune', 'Manager', '100000'], ['3', 'Jayesh', 'Nashik', 'Manager', '90500'], ['5', 'Mahesh', 'Pune', 'Supervisor', '85000']]

Top1 Employee Mrunmayee

Top2 Employee Gouri

Top1 Employee Sanvi

Top2 Employee Jayesh

Top2 Employee Mahesh