# create an empty data frame

import pandas as pd

df = pd.DataFrame()

print (df)

#create a data frame from a list

import pandas as pd

data = [1,2,3,4,5]

df = pd.DataFrame(data)

print (df)

#create a data frame from a list

import pandas as pd

data = [['Alex',10],['Bob',12],['Clarke',13]]

df = pd.DataFrame(data,columns=['Name','Age'])

print (df)

#print (df.to\_string(index=False))

#create a data frame from a list

import pandas as pd

data = [['Alex',10],['Bob',12],['Clarke',13]]

df = pd.DataFrame(data,columns=['Name','Age'],dtype=float)

print (df)

#create a data frame from a dictionary of ndarrays/lists

import pandas as pd

data = {'Name':['Tom', 'Jack', 'Steve', 'Ricky'],'Age':[28,34,29,42]}

df= pd.DataFrame(data)

print (df)

#create a data Frame from a dictionary of ndarrays/lists with index

import pandas as pd

data = {'Name':['Tom', 'Jack', 'Steve', 'Ricky'],'Age':[28,34,29,42]}

df = pd.DataFrame(data, index=['rank1','rank2','rank3','rank4'])

print (df)

#create a data frame from a list of dictionaries

import pandas as pd

data = [{'a': 1, 'b': 2},{'a': 5, 'b': 10, 'c': 20}]

df = pd.DataFrame(data)

print (df)

#create a data frame from a list of dictionaries with index

import pandas as pd

data = [{'a': 1, 'b': 2},{'a': 5, 'b': 10, 'c': 20}]

df = pd.DataFrame(data, index=['first', 'second'])

print (df)

#create a data frame from a list of dictionaries with row/column indices

import pandas as pd

data = [{'a': 1, 'b': 2},{'a': 5, 'b': 10, 'c': 20}]

#With two column indices, values same as dictionary keys

df1 = pd.DataFrame(data, index=['first', 'second'], columns=['a', 'b'])

#With two column indices with one index with other name

df2 = pd.DataFrame(data, index=['first', 'second'], columns=['a', 'b1'])

print (df1)

print (df2)

#create a data frame from a dictionary of series

import pandas as pd

d = {'one' : pd.Series([1, 2, 3], index=['a', 'b', 'c']),

'two' : pd.Series([1, 2, 3, 4], index=['a', 'b', 'c', 'd'])}

df = pd.DataFrame(d)

print (df)

#column selection

import pandas as pd

d = {'one' : pd.Series([1, 2, 3], index=['a', 'b', 'c']),

'two' : pd.Series([1, 2, 3, 4], index=['a', 'b', 'c', 'd'])}

df = pd.DataFrame(d)

print (df ['one'])

#column addition

import pandas as pd

d = {'one' : pd.Series([1, 2, 3], index=['a', 'b', 'c']),

'two' : pd.Series([1, 2, 3, 4], index=['a', 'b', 'c', 'd'])}

df = pd.DataFrame(d)

# Adding a new column to an existing DataFrame object with column label by

#passing new series

print ("Adding a new column by passing as Series:")

df['three']=pd.Series([10,20,30],index=['a','b','c'])

print (df)

print ("Adding a new column using the existing columns in DataFrame:")

df['four']=df['one']+df['three']

print (df)

# Using the previous DataFrame, we will delete a column

# using del function

import pandas as pd

d = {'one' : pd.Series([1, 2, 3], index=['a', 'b', 'c']),

'two' : pd.Series([1, 2, 3, 4], index=['a', 'b', 'c', 'd']),

'three' : pd.Series([10,20,30], index=['a','b','c'])}

df = pd.DataFrame(d)

print ("Our dataframe is:")

print (df)

# using del function

print ("Deleting the first column using DEL function:")

del df['one']

print (df)

# using pop function

print ("Deleting another column using POP function:")

df.pop('two')

print (df)

#selection by label - rows

import pandas as pd

d = {'one' : pd.Series([1, 2, 3], index=['a', 'b', 'c']),

'two' : pd.Series([1, 2, 3, 4], index=['a', 'b', 'c', 'd'])}

df = pd.DataFrame(d)

print (df.loc['b'])

#row selection by integer

import pandas as pd

d = {'one' : pd.Series([1, 2, 3], index=['a', 'b', 'c']),

'two' : pd.Series([1, 2, 3, 4], index=['a', 'b', 'c', 'd'])}

df = pd.DataFrame(d)

print (df.iloc[2])

#slice rows

import pandas as pd

d = {'one' : pd.Series([1, 2, 3], index=['a', 'b', 'c']),

'two' : pd.Series([1, 2, 3, 4], index=['a', 'b', 'c', 'd'])}

df = pd.DataFrame(d)

print (df[2:4])

#addition of rows

import pandas as pd

df = pd.DataFrame([[1, 2], [3, 4]], columns=['a','b'])

df2 = pd.DataFrame([[5, 6], [7, 8]], columns=['a','b'])

df = df.append(df2)

print (df)

#deletion of rows

import pandas as pd

df = pd.DataFrame([[1, 2], [3, 4]], columns=['a','b'])

df2 = pd.DataFrame([[5, 6], [7, 8]], columns=['a','b'])

df = df.append(df2)

# Drop rows with label 0

df = df.drop(0)

print (df)

#export dataframe to excel

import pandas as pd

cars = {'Brand': ['Honda Civic','Toyota Corolla','Ford Focus','Audi A4'],

'Price': [32000,35000,37000,45000]

}

df = pd.DataFrame(cars, columns = ['Brand', 'Price'])

df.to\_excel (r'C:\Users\prasad\Desktop\export\_dataframe.xlsx', index = False, header=True)

#data frame to csv

import pandas as pd

cars = {'Brand': ['Honda Civic','Toyota Corolla','Ford Focus','Audi A4'],

'Price': [22000,25000,27000,35000]

}

df = pd.DataFrame(cars, columns= ['Brand', 'Price'])

df.to\_csv (r'C:\Users\prasad\Desktop\export\_dataframe.csv', index = False, header=True)

print (df)