

1).How to create dataframe using pandas? And provide index name and columns name.

```
In [6]: #step1: create dataframe

import pandas as pd #import pandas pacakage
name=["mrityunjay","manish","pankaj","ankit"] #make different column list
age=[24,20,23,22]
city=["hydrabad","jhasi","patna","noida"]
degree=["BBA","Bsc","Msc","Btech"]
goal=["BM","Scientist","officer","Manager"]

data=zip(name,age,city,degree,goal) #zip all the column lists

df=pd.DataFrame(data) #using <pacakage><method> # method==DataFrame
df
```

```
Out[6]:
```

	0	1	2	3	4
0	mrityunjay	24	hydrabad	BBA	BM
1	manish	20	jhasi	Bsc	Scientist
2	pankaj	23	patna	Msc	officer
3	ankit	22	noida	Btech	Manager

```
In [7]: #step2:a).create the dataframe and provide columns and index name

import pandas as pd #import pandas pacakage
name=["mrityunjay","manish","pankaj","ankit"] #make different column list
age=[24,20,23,22]
city=["hydrabad","jhasi","patna","noida"]
degree=["BBA","Bsc","Msc","Btech"]
goal=["BM","Scientist","officer","Manager"]

data=zip(name,age,city,degree,goal) #zip all the column lists

df=pd.DataFrame(data,columns=["name","age","city","degree","goal"],index=["A","B","C","D"])
df
```

```
Out[7]:
```

	name	age	city	degree	goal
A	mrityunjay	24	hydrabad	BBA	BM
B	manish	20	jhasi	Bsc	Scientist
C	pankaj	23	patna	Msc	officer
D	ankit	22	noida	Btech	Manager

```
In [8]: #step2:b).create the dataframe and provide columns and index name
```

```
import pandas as pd #import pandas package
name=["mrityunjay","manish","pankaj","ankit"] #make different column list
age=[24,20,23,22]
city=["hydrabad","jhasi","patna","noida"]
degree=["BBA","Bsc","Msc","Btech"]
goal=["BM","Scientist","officer","Manager"]

data=zip(name,age,city,degree,goal) #zip all the column lists

col=["name","age","city","degree","goal"] #create list for columns and index
indx=["A","B","C","D"]

df=pd.DataFrame(data,columns=col,index=indx)
df
```

Out[8]:

	name	age	city	degree	goal
A	mrityunjay	24	hydrabad	BBA	BM
B	manish	20	jhasi	Bsc	Scientist
C	pankaj	23	patna	Msc	officer
D	ankit	22	noida	Btech	Manager

2).how to delete rows and columns from data frame?

In [15]: # using <dataframe name>.<method> ("row or column name",axis=0 or 1)

```
col_dr=df.drop("city",axis=1) #whem you want delete coulms use axis=1

row_dr=df.drop("C",axis=0) #whem you want delete coulms use axis=1

col_dr
```

Out[15]:

	name	age	degree	goal
A	mrityunjay	24	BBA	BM
B	manish	20	Bsc	Scientist
C	pankaj	23	Msc	officer
D	ankit	22	Btech	Manager

In [16]: row_dr

Out[16]:

	name	age	city	degree	goal
A	mrityunjay	24	hydrabad	BBA	BM
B	manish	20	jhasi	Bsc	Scientist
D	ankit	22	noida	Btech	Manager

3).How to use comprehension method in list, tuple, sets, dictionary?

In [34]: *#list comprehension*

```
list1=[i for i in range(1,5)]

list2=[i**2 for i in range(1,5)]

list3=[f"even:{i}" for i in range(1,10) if i%2==0 ]

list4=[f"odd:{i}" if i%2!=0 else f"even:{i}" for i in range(1,10)]

print(f"list:{list1}")
print(f"squire:{list2}")
print(f"even:{list3}")
print(f"odd_even:{list4}")
```

list:[1, 2, 3, 4]

squire:[1, 4, 9, 16]

even:['even:2', 'even:4', 'even:6', 'even:8']

odd_even:['odd:1', 'even:2', 'odd:3', 'even:4', 'odd:5', 'even:6', 'odd:7', 'even:8', 'odd:9']

In [50]: *#tuple comprehension*

```
tuple1=(i for i in range(1,5))
for j in tuple1:          #tuple comprehension items is iterable
    print(f"tuple1: {j}")
#=====

tuple2=(i**2 for i in range(1,5))
for j in tuple2:          #tuple comprehension items is iterable
    print(f"tuple2: {j}")
#=====

tuple3=[f"even:{i}" for i in range(1,10) if i%2==0 ]

for j in tuple3:          #tuple comprehension items is iterable
    print(f"tuple3: {j}")
#=====

tuple4=[f"odd:{i}" if i%2!=0 else f"even:{i}" for i in range(1,10)]
for j in tuple4:          #tuple comprehension items is iterable
    print(f"tuple3: {j}")
```

```

tuple1: 1
tuple1: 2
tuple1: 3
tuple1: 4
tuple2: 1
tuple2: 4
tuple2: 9
tuple2: 16
tuple3: even:2
tuple3: even:4
tuple3: even:6
tuple3: even:8
tuple3: odd:1
tuple3: even:2
tuple3: odd:3
tuple3: even:4
tuple3: odd:5
tuple3: even:6
tuple3: odd:7
tuple3: even:8
tuple3: odd:9

```

In [52]: *#sets comprehension*

```

sets1={i for i in range(1,5)}

sets2={i**2 for i in range(1,5)}

sets3={f"even:{i}" for i in range(1,10) if i%2==0 }

sets4={f"odd:{i}" if i%2!=0 else f"even:{i}" for i in range(1,10)}

print(f"list:{sets1}")
print(f"squire:{sets2}")
print(f"even:{sets3}")
print(f"odd_even:{sets4}")

```

```

list:{1, 2, 3, 4}
squire:{16, 1, 4, 9}
even: {'even:6', 'even:2', 'even:8', 'even:4'}
odd_even: {'even:6', 'odd:7', 'even:2', 'odd:1', 'even:8', 'odd:9', 'odd:3', 'odd:5', 'even:4'}

```

In [65]: *#dictionary comprehension*

```

dict1={i:i**2 for i in range(1,5)}

dict2={i:i**3 for i in range(1,5)}

dict3={i:f"even:{i}" for i in range(1,10) if i%2==0 }

dict4={i:f"odd:{i}" if i%2!=0 else f"even:{i}" for i in range(1,10)}

print(f"num_square dict:{dict1}")

```

```
print(f"num_cube dict:{dict2}")  
print(f"num_even dict:{dict3}")  
print(f"num_odd-even dict:{dict4}")
```

```
num_square dict:{1: 1, 2: 4, 3: 9, 4: 16}  
num_cube dict:{1: 1, 2: 8, 3: 27, 4: 64}  
num_even dict:{2: 'even:2', 4: 'even:4', 6: 'even:6', 8: 'even:8'}  
num_odd-even dict:{1: 'odd:1', 2: 'even:2', 3: 'odd:3', 4: 'even:4', 5: 'odd:5', 6:  
'even:6', 7: 'odd:7', 8: 'even:8', 9: 'odd:9'}
```

In []: