In [2]:
```
#Dataframe using array
import pandas as pd
data={'Name':['ram','deep','pankaj','jay'],'age':[22,23,24,21]}
df=pd.DataFrame(data,index=['rank1','rank2','rank3','rank4'])
print(df)
```

```
         Name  age
rank1     ram   22
rank2    deep   23
rank3  pankaj   24
rank4     jay   21
```

In [29]:
```
#DataFrame using list
import pandas as pd
list=['python','data','bca','mca']
df=pd.DataFrame(list)
print(df)
```

```
        0
0  python
1    data
2     bca
3     mca
```

In [30]:
```
#Dataframe from dict of equal length of lists
import pandas as pd
Dict={'Name':['ram','deep','pankaj','jay'],'marks':[44,65,75,48]}
df=pd.DataFrame(Dict)
print(df)
```

```
     Name  marks
0     ram     44
1    deep     65
2  pankaj     75
3     jay     48
```

In [31]:
```
#DataFrame from list of Dicts
import pandas as pd
data=[{'x':10,'y':20},{'x':55,'y':15,'z':88}]
df=pd.DataFrame(data)
print(df)
```

```
    x   y     z
0  10  20   NaN
1  55  15  88.0
```

In [32]:
```
#DataFrame from Excel spreadsheet
import pandas as pd
data=pd.read_excel('demo.xlsx')
print(data)
```

```
             name     area country_code2 country_code3
0         Albania    28748            AL            ALB
1         Algeria  2381741            DZ            DZA
2  American Samoa      199            AS            ASM
3         Andorra      468            AD            AND
4          Angola  1246700            AO            AGO
```

In [33]:
```
#DataFrame from .csv file
import pandas as pd
data=pd.read_csv('countries.csv')
print(data)
```

```
             name     area country_code2 country_code3
0         Albania    28748            AL            ALB
1         Algeria  2381741            DZ            DZA
2  American Samoa      199            AS            ASM
3         Andorra      468            AD            AND
4          Angola  1246700            AO            AGO
```

In [35]:
```
#knowing number of row and column
import pandas as pd
data=pd.read_excel('demo.xlsx')
print(data.shape)
```

```
(5, 4)
```

In [8]:
```
#knowing number of particular row or column
import pandas as pd
data=pd.read_excel('demo.xlsx')
r,c=data.shape
print(r)
```

```
5
```

In [9]:
```
# head() method
import pandas as pd
data=pd.read_excel('demo.xlsx')
da=data.head()
print(da)
```

```
             name     area country_code2 country_code3
0         Albania    28748            AL            ALB
1         Algeria  2381741            DZ            DZA
2  American Samoa      199            AS            ASM
3         Andorra      468            AD            AND
4          Angola  1246700            AO            AGO
```

In [10]:
```
# head() method with range
import pandas as pd
data=pd.read_excel('demo.xlsx')
da=data.head(2)
print(da)
```

```
      name     area country_code2 country_code3
0  Albania    28748            AL            ALB
1  Algeria  2381741            DZ            DZA
```

In [36]:
```
# tail() method
import pandas as pd
data=pd.read_excel('demo.xlsx')
da=data.tail()
print(da)
```

```
             name     area country_code2 country_code3
0         Albania    28748            AL            ALB
1         Algeria  2381741            DZ            DZA
2  American Samoa      199            AS            ASM
3         Andorra      468            AD            AND
4          Angola  1246700            AO            AGO
```

In [37]:
```
# tail() method with range
import pandas as pd
data=pd.read_excel('demo.xlsx')
da=data.tail(2)
print(da)
```

```
      name     area country_code2 country_code3
3  Andorra      468            AD            AND
4   Angola  1246700            AO            AGO
```

In [3]:
```
# Retrieving a Range of Rows
import pandas as pd
data=pd.read_excel('demo.xlsx')
da=data[2:5]
print(da)
```

```
             name     area country_code2 country_code3
2  American Samoa      199            AS           ASM
3         Andorra      468            AD           AND
4          Angola  1246700            AO           AGO
```

In [6]:
```
# Retrieving a alternative Rows
import pandas as pd
data=pd.read_excel('demo.xlsx')
da=data[1::2]
print(da)
```

```
      name     area country_code2 country_code3
1  Algeria  2381741            DZ           DZA
3  Andorra      468            AD           AND
```

In [15]:
```
# Retrieving data in reverse order
import pandas as pd
data=pd.read_excel('demo.xlsx')
da=data[5:0:-1]
print(da)
```

```
             name     area country_code2 country_code3
4          Angola  1246700            AO           AGO
3         Andorra      468            AD           AND
2  American Samoa      199            AS           ASM
1         Algeria  2381741            DZ           DZA
```

In [18]:
```
# Retrieve Column Names
import pandas as pd
data=pd.read_excel('demo.xlsx')
print(data.columns)
```

```
Index(['name', 'area', 'country_code2', 'country_code3'], dtype='object')
```

In [8]:
```
# Retrieve particular Column with data
import pandas as pd
data=pd.read_excel('demo.xlsx')
print(data.name)
```

```
0           Albania
1           Algeria
2    American Samoa
3           Andorra
4            Angola
Name: name, dtype: object
```

In [2]:
```
# Retrieve multiple Column Names
import pandas as pd
data=pd.read_excel('demo.xlsx')
da=data[['name','area']]
print(da)
```

```
              name     area
0          Albania    28748
1          Algeria  2381741
2   American Samoa      199
3          Andorra      468
4           Angola  1246700
```

In [3]:
```
info=pd.DataFrame([[17,62,35],[25,36,54],[42,20,15],[48,62,76]],columns=['x','y','z'])
print(info)
arr=info.to_numpy()
print(arr)
```

```
    x   y   z
0  17  62  35
1  25  36  54
2  42  20  15
3  48  62  76
[[17 62 35]
 [25 36 54]
 [42 20 15]
 [48 62 76]]
```

In [11]:
```
import sqlite3
import pandas as pd
conn = sqlite3.connect('example1.db')
cursor = conn.cursor()
cursor.execute("SELECT * from EMPLOYEE")
result = cursor.fetchall();
df = pd.DataFrame(result, columns = ["FIRST_NAME", "LAST_NAME", "AGE", "SEX","INCOME"])
print(df)
conn.commit()
conn.close()
```

```
  FIRST_NAME    LAST_NAME  AGE SEX   INCOME
0      Ramya   Rama Priya   27   F   9000.0
1      Vinay  Battacharya   20   M   6000.0
2    Sharukh        Sheik   25   M   8300.0
3   Sarmista       Sharma   26   F  10000.0
4    Tripthi       Mishra   24   F   6000.0
```

In [12]:
```
import sqlite3
import pandas as pd
conn = sqlite3.connect('example1.db')
cursor = conn.cursor()
cursor.execute("SELECT * from EMPLOYEE")
result = cursor.fetchall();
df = pd.DataFrame(result, columns = ["FIRST_NAME", "LAST_NAME", "AGE", "SEX","INCOME"])
data=df['AGE'].max()
print(data)
conn.commit()
conn.close()
```

```
27
```

In [13]:
```
import sqlite3
import pandas as pd
conn = sqlite3.connect('example1.db')
cursor = conn.cursor()
cursor.execute("SELECT * from EMPLOYEE")
result = cursor.fetchall();
df = pd.DataFrame(result, columns = ["FIRST_NAME", "LAST_NAME", "AGE", "SEX","INCOME"])
data=df['AGE'].min()
print(data)
conn.commit()
conn.close()
```

```
20
```

In [17]:
```
import sqlite3
import pandas as pd
conn = sqlite3.connect('example1.db')
cursor = conn.cursor()
cursor.execute("SELECT * from EMPLOYEE")
result = cursor.fetchall();
df = pd.DataFrame(result, columns = ["FIRST_NAME", "LAST_NAME", "AGE", "SEX","INCOME"])
data=df.describe()
print(data)
```

```
             AGE        INCOME
count   5.000000      5.000000
mean   24.400000   7860.000000
std     2.701851   1802.220852
min    20.000000   6000.000000
25%    24.000000   6000.000000
50%    25.000000   8300.000000
75%    26.000000   9000.000000
max    27.000000  10000.000000
```

In [20]:
```
data1=df[df.AGE>25]
print(data1)
```

```
  FIRST_NAME   LAST_NAME  AGE SEX   INCOME
0      Ramya  Rama Priya   27   F   9000.0
3   Sarmista      Sharma   26   F  10000.0
```

In [37]:
```
cursor.execute('''INSERT INTO EMPLOYEE(FIRST_NAME, LAST_NAME, AGE, SEX,
INCOME) VALUES ('Ramya', 'Rama Priya','', 'F', 9000)''')
cursor.execute("SELECT * from EMPLOYEE")
result = cursor.fetchall();
df = pd.DataFrame(result, columns = ["FIRST_NAME", "LAST_NAME", "AGE", "SEX","INCOME"])
print(df)
```

```
   FIRST_NAME    LAST_NAME AGE SEX   INCOME
0       Ramya   Rama Priya  27   F   9000.0
1       Vinay  Battacharya  20   M   6000.0
2     Sharukh        Sheik  25   M   8300.0
3    Sarmista      Sharma  26   F  10000.0
4     Tripthi      Mishra  24   F   6000.0
5       Ramya   Rama Priya       F   9000.0
6       Ramya   Rama Priya       F   9000.0
7       Ramya   Rama Priya       F   9000.0
8       Ramya   Rama Priya       F   9000.0
9       Ramya   Rama Priya       F   9000.0
10      Ramya   Rama Priya       F   9000.0
```

In [33]:
```
data=pd.read_csv('countries.csv')
print(data)
print(data.fillna({'name':'missing','area':0,'country_code2':'no','country_code3':'no'}))
```

```
             name       area country_code2 country_code3
0         Albania    28748.0            AL           ALB
1         Algeria  2381741.0            DZ           DZA
2  American Samoa      199.0           NaN           ASM
3         Andorra        NaN            AD           AND
4          Angola  1246700.0            AO           NaN
             name       area country_code2 country_code3
0         Albania    28748.0            AL           ALB
1         Algeria  2381741.0            DZ           DZA
2  American Samoa      199.0            no           ASM
3         Andorra        0.0            AD           AND
4          Angola  1246700.0            AO            no
```

In [34]:
```
print(data.dropna())
```

```
      name       area country_code2 country_code3
0  Albania    28748.0            AL           ALB
1  Algeria  2381741.0            DZ           DZA
```

In [ ]: