```
import pandas as pd
stats = pd.read csv(r"D:\Naresh\20th, 21st\DataFrame Pandas\
Data.csv")
stats
              CountryName CountryCode BirthRate InternetUsers \
0
                    Aruba
                                   ABW
                                           10.244
                                                             78.9
                                                             5.9
1
                                           35.253
              Afghanistan
                                   AFG
2
                                   AG0
                                           45.985
                                                             19.1
                   Angola
3
                                                             57.2
                  Albania
                                   ALB
                                           12.877
4
     United Arab Emirates
                                   ARE
                                           11.044
                                                             88.0
                                   . . .
190
              Yemen, Rep.
                                           32.947
                                   YEM
                                                             20.0
191
             South Africa
                                   ZAF
                                           20.850
                                                             46.5
192
         Congo, Dem. Rep.
                                           42.394
                                                             2.2
                                   COD
193
                   Zambia
                                   ZMB
                                           40.471
                                                             15.4
194
                 Zimbabwe
                                   ZWE
                                           35.715
                                                             18.5
             IncomeGroup
0
             High income
1
              Low income
2
     Upper middle income
3
     Upper middle income
4
             High income
190 Lower middle income
     Upper middle income
191
192
              Low income
193 Lower middle income
194
              Low income
[195 rows x 5 columns]
len(stats)
195
stats.columns
Index(['CountryName', 'CountryCode', 'BirthRate', 'InternetUsers',
       'IncomeGroup'],
      dtype='object')
len(stats.columns)
5
stats.head() #top 5 rows will be printed
```

```
CountryName CountryCode
                                      BirthRate
                                                 InternetUsers \
0
                  Aruba
                                 ABW
                                         10.244
                                                          78.9
1
            Afghanistan
                                 AFG
                                         35.253
                                                           5.9
2
                 Angola
                                 AG0
                                         45.985
                                                          19.1
3
                Albania
                                 ALB
                                         12.877
                                                           57.2
4
  United Arab Emirates
                                 ARE
                                         11.044
                                                          88.0
           IncomeGroup
0
           High income
1
            Low income
2
  Upper middle income
3
  Upper middle income
4
           High income
stats.tail() #last 5 rows will be printed
          CountryName CountryCode
                                    BirthRate
                                               InternetUsers \
190
          Yemen, Rep.
                               YEM
                                       32.947
                                                        20.0
191
         South Africa
                               ZAF
                                       20.850
                                                        46.5
     Congo, Dem. Rep.
192
                               COD
                                       42.394
                                                         2.2
193
                               ZMB
                                       40.471
               Zambia
                                                         15.4
194
             Zimbabwe
                               ZWE
                                       35.715
                                                         18.5
             IncomeGroup
190
     Lower middle income
191
     Upper middle income
192
              Low income
193
    Lower middle income
194
              Low income
stats.info() #strings are called as object
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 195 entries, 0 to 194
Data columns (total 5 columns):
     Column
                    Non-Null Count
                                     Dtype
 0
     CountryName
                    195 non-null
                                     object
1
     CountryCode
                    195 non-null
                                     object
 2
     BirthRate
                    195 non-null
                                     float64
 3
     InternetUsers
                    195 non-null
                                     float64
4
                    195 non-null
                                     object
     IncomeGroup
dtypes: float64(2), object(3)
memory usage: 7.7+ KB
stats.describe() #it will work like a statistic fun
        BirthRate
                   InternetUsers
       195.000000
                      195.000000
count
                       42.076471
mean
        21.469928
std
        10.605467
                       29.030788
```

```
min
         7.900000
                        0.900000
                        14.520000
25%
        12.120500
50%
        19.680000
                        41.000000
75%
        29.759500
                        66,225000
max
        49.661000
                        96.546800
stats.describe().transpose() #transpose convert column into rows
               count
                            mean
                                        std
                                             min
                                                       25%
                                                              50%
75% \
BirthRate
               195.0
                      21.469928 10.605467
                                            7.9 12.1205
                                                            19.68
29.7595
               195.0 42.076471 29.030788 0.9 14.5200
InternetUsers
                                                            41.00
66,2250
                   max
BirthRate
               49.6610
InternetUsers
               96.5468
stats.head()
            CountryName CountryCode
                                      BirthRate
                                                 InternetUsers \
0
                  Aruba
                                 ABW
                                         10.244
                                                           78.9
1
                                 AFG
                                         35.253
                                                            5.9
            Afghanistan
2
                 Angola
                                 AG0
                                         45.985
                                                           19.1
3
                                         12.877
                Albania
                                 ALB
                                                           57.2
  United Arab Emirates
                                 ARE
                                         11.044
                                                           88.0
           IncomeGroup
0
           High income
1
            Low income
2
  Upper middle income
3
   Upper middle income
4
           High income
stats.head()
            CountryName CountryCode
                                      BirthRate
                                                 InternetUsers \
0
                  Aruba
                                         10.244
                                                           78.9
                                 ABW
1
                                 AFG
                                         35.253
                                                            5.9
            Afghanistan
2
                 Angola
                                 AG0
                                         45.985
                                                           19.1
3
                Albania
                                 ALB
                                         12.877
                                                           57.2
4
  United Arab Emirates
                                 ARE
                                         11.044
                                                           88.0
           IncomeGroup
0
           High income
1
            Low income
2
  Upper middle income
3
   Upper middle income
           High income
```

```
stats.columns = ['a','b','c','d','e']
stats.head()
                                          d
                      а
                           b
                               С
                                                               e
0
                  Aruba
                         ABW
                              10.244
                                       78.9
                                                     High income
1
            Afghanistan AFG
                              35.253
                                       5.9
                                                      Low income
2
                 Angola
                         AGO 45.985
                                       19.1 Upper middle income
3
                Albania ALB
                              12.877
                                       57.2
                                             Upper middle income
  United Arab Emirates ARE 11.044 88.0
                                                     High income
stats.columns = ['CountryName', 'CountryCode', 'BirthRate',
'InternetUsers','IncomeGroup']
stats.head()
                                     BirthRate
            CountryName CountryCode
                                                 InternetUsers \
0
                  Aruba
                                ABW
                                         10.244
                                                          78.9
1
            Afghanistan
                                AFG
                                         35.253
                                                           5.9
2
                 Angola
                                AG0
                                         45.985
                                                          19.1
3
                                         12.877
                                                          57.2
                Albania
                                ALB
4 United Arab Emirates
                                ARE
                                         11.044
                                                          88.0
           IncomeGroup
0
           High income
            Low income
1
2
  Upper middle income
3
   Upper middle income
4
           High income
stats[21:26] #how python know that only this is rows based on index
   CountryName CountryCode BirthRate InternetUsers
IncomeGroup
21
        Belize
                       BLZ
                               23.092
                                                       Upper middle
                                                33.60
income
                       BMU
22
       Bermuda
                               10.400
                                                95.30
                                                               High
income
23
       Bolivia
                       B0L
                               24,236
                                                36.94 Lower middle
income
24
        Brazil
                       BRA
                                14.931
                                                51.04 Upper middle
income
      Barbados
                       BRB
                               12.188
                                                73.00
                                                               High
income
stats[:]
              CountryName CountryCode
                                        BirthRate
                                                   InternetUsers \
0
                                                            78.9
                    Aruba
                                  ABW
                                           10.244
1
              Afghanistan
                                  AFG
                                           35.253
                                                             5.9
2
                   Angola
                                  AG0
                                           45.985
                                                            19.1
3
                  Albania
                                  ALB
                                           12.877
                                                            57.2
4
     United Arab Emirates
                                  ARE
                                           11.044
                                                            88.0
```

```
190
               Yemen, Rep.
                                                                20.0
                                     YEM
                                              32.947
191
              South Africa
                                     ZAF
                                              20.850
                                                                46.5
192
         Congo, Dem. Rep.
                                     COD
                                              42.394
                                                                 2.2
193
                    Zambia
                                     ZMB
                                              40.471
                                                                15.4
194
                  Zimbabwe
                                     ZWE
                                              35.715
                                                                18.5
              IncomeGroup
0
              High income
1
               Low income
2
     Upper middle income
3
     Upper middle income
4
              High income
     Lower middle income
190
191
     Upper middle income
192
               Low income
193
     Lower middle income
194
               Low income
[195 rows x 5 columns]
stats[:10]
             CountryName CountryCode
                                        BirthRate
                                                    InternetUsers
0
                                           10.244
                   Aruba
                                   ABW
                                                           78.9000
1
             Afghanistan
                                   AFG
                                           35.253
                                                            5.9000
2
                  Angola
                                   AG0
                                           45.985
                                                           19.1000
3
                 Albania
                                   ALB
                                           12.877
                                                           57.2000
4
   United Arab Emirates
                                   ARE
                                           11.044
                                                           88.0000
5
                                           17.716
                                                           59.9000
               Argentina
                                   ARG
6
                 Armenia
                                   ARM
                                           13.308
                                                           41.9000
7
    Antiqua and Barbuda
                                   ATG
                                           16.447
                                                           63.4000
8
                                           13.200
               Australia
                                   AUS
                                                           83.0000
9
                 Austria
                                   AUT
                                            9.400
                                                           80.6188
            IncomeGroup
0
            High income
1
             Low income
2
   Upper middle income
3
   Upper middle income
4
            High income
5
            High income
6
   Lower middle income
7
            High income
8
            High income
9
            High income
stats.head(10)
```

```
CountryName CountryCode
                                        BirthRate
                                                    InternetUsers
0
                                            10.244
                                                           78.9000
                   Aruba
                                   ABW
1
             Afghanistan
                                   AFG
                                            35.253
                                                            5.9000
2
                                   AG0
                                            45.985
                  Angola
                                                           19.1000
3
                 Albania
                                   ALB
                                            12.877
                                                           57,2000
4
   United Arab Emirates
                                   ARE
                                            11.044
                                                           88.0000
5
               Argentina
                                   ARG
                                            17.716
                                                           59.9000
6
                 Armenia
                                   ARM
                                            13.308
                                                           41.9000
7
    Antiqua and Barbuda
                                   ATG
                                            16.447
                                                           63.4000
8
               Australia
                                   AUS
                                            13.200
                                                           83.0000
9
                                             9.400
                 Austria
                                   AUT
                                                           80.6188
            IncomeGroup
0
            High income
             Low income
1
2
   Upper middle income
3
   Upper middle income
4
            High income
5
            High income
6
   Lower middle income
7
            High income
8
            High income
9
            High income
stats[ : : -1]
               CountryName CountryCode
                                          BirthRate
                                                      InternetUsers \
194
                                     ZWE
                                              35.715
                                                                 18.5
                  Zimbabwe
                                                                 15.4
193
                     Zambia
                                     ZMB
                                              40.471
          Congo, Dem. Rep.
192
                                     COD
                                              42.394
                                                                 2.2
191
              South Africa
                                     ZAF
                                              20.850
                                                                 46.5
190
               Yemen, Rep.
                                     YEM
                                              32.947
                                                                 20.0
                                     . . .
4
     United Arab Emirates
                                     ARE
                                              11.044
                                                                 88.0
3
                                     ALB
                   Albania
                                              12.877
                                                                 57.2
2
                                                                 19.1
                    Angola
                                     AG0
                                              45.985
                                                                 5.9
1
               Afghanistan
                                     AFG
                                              35.253
0
                                                                78.9
                      Aruba
                                     ABW
                                              10.244
              IncomeGroup
194
               Low income
193
     Lower middle income
192
               Low income
191
     Upper middle income
190
     Lower middle income
. .
4
              High income
3
     Upper middle income
2
     Upper middle income
1
               Low income
```

0 High income [195 rows x 5 columns] stats CountryName CountryCode BirthRate InternetUsers \ 0 Aruba 10.244 78.9 ABW 5.9 1 Afghanistan AFG 35.253 2 Angola AG0 45.985 19.1 3 Albania ALB 12.877 57.2 4 United Arab Emirates ARE 11.044 88.0 Yemen, Rep. 32.947 190 YEM 20.0 46.5 191 South Africa ZAF 20.850 2.2 192 Congo, Dem. Rep. COD 42.394 193 Zambia ZMB 40.471 15.4 194 Zimbabwe 18.5 ZWE 35.715 IncomeGroup 0 High income 1 Low income 2 Upper middle income 3 Upper middle income 4 High income . . 190 Lower middle income 191 Upper middle income 192 Low income 193 Lower middle income 194 Low income [195 rows x 5 columns] stats[: : 20] CountryName CountryCode BirthRate InternetUsers IncomeGroup 0 Aruba ABW 10.244 78.9000 High income Belarus BLR 12.500 54.1700 Upper middle income CRI Costa Rica 15.022 45.9600 Upper middle 40

income 60

income

income

income

80

100

Gabon

India

Libya

GAB

IND

LBY

30.555

20,291

21.425

9.2000

15.1000

16.5000

Upper middle

Lower middle

Upper middle

```
120 Mozambique
                         MOZ
                                 39.705
                                                 5.4000
                                                                   Low
income
140
         Poland
                         P0L
                                  9.600
                                                62.8492
                                                                  High
income
160
       Suriname
                         SUR
                                 18.455
                                                37.4000
                                                         Upper middle
income
                         URY
                                 14.374
180
                                                57.6900
                                                                  High
        Uruguay
income
stats.columns
Index(['CountryName', 'CountryCode', 'BirthRate', 'InternetUsers',
        'IncomeGroup'],
      dtype='object')
stats.head()
            CountryName CountryCode
                                       BirthRate
                                                  InternetUsers \
0
                                          10.244
                   Aruba
                                 ABW
                                                            78.9
1
            Afghanistan
                                 AFG
                                          35.253
                                                             5.9
2
                                          45.985
                  Angola
                                 AG0
                                                            19.1
3
                Albania
                                 ALB
                                          12.877
                                                            57.2
  United Arab Emirates
                                 ARE
                                          11.044
                                                            88.0
           IncomeGroup
0
           High income
1
            Low income
2
  Upper middle income
3
  Upper middle income
4
           High income
stats['CountryName'].head()
0
                     Aruba
1
              Afghanistan
2
                    Angola
3
                   Albania
4
     United Arab Emirates
Name: CountryName, dtype: object
stats[['CountryName','BirthRate']].head()
            CountryName
                          BirthRate
0
                             10.244
                   Aruba
            Afghanistan
                             35.253
1
2
                  Angola
                             45.985
3
                Albania
                             12.877
   United Arab Emirates
                             11.044
stats.head()
```

```
CountryName CountryCode
                                       BirthRate
                                                   InternetUsers \
0
                                          10.244
                   Aruba
                                  ABW
                                                            78.9
1
            Afghanistan
                                  AFG
                                          35.253
                                                             5.9
2
                                          45.985
                                                            19.1
                  Angola
                                  AG0
3
                Albania
                                  ALB
                                          12.877
                                                            57.2
                                          11.044
4
  United Arab Emirates
                                  ARE
                                                            88.0
           IncomeGroup
0
           High income
1
            Low income
2
  Upper middle income
3
  Upper middle income
4
           High income
stats['BirthRate']
0
       10.244
       35.253
1
2
       45.985
3
       12.877
4
       11.044
190
       32.947
191
       20.850
192
       42.394
193
       40.471
194
       35.715
Name: BirthRate, Length: 195, dtype: float64
stats[4:8][['CountryName', 'BirthRate']]
            CountryName
                          BirthRate
   United Arab Emirates
                             11.044
5
              Argentina
                             17.716
                             13.308
6
                Armenia
7
    Antigua and Barbuda
                             16.447
stats [['CountryName', 'BirthRate']][4:8]
            CountryName
                          BirthRate
4
   United Arab Emirates
                             11.044
5
                             17.716
              Argentina
6
                             13.308
                Armenia
7
    Antigua and Barbuda
                             16.447
df1 = stats [['CountryName','BirthRate']]
df1
              CountryName
                            BirthRate
0
                     Aruba
                                10.244
```

```
1
              Afghanistan
                               35.253
2
                    Angola
                               45.985
3
                   Albania
                               12.877
4
     United Arab Emirates
                               11.044
                               32.947
190
              Yemen, Rep.
191
             South Africa
                               20.850
192
         Congo, Dem. Rep.
                               42.394
193
                    Zambia
                               40.471
194
                 Zimbabwe
                               35.715
[195 rows x 2 columns]
df2 = stats[4:8]
df2
            CountryName CountryCode
                                      BirthRate
                                                  InternetUsers \
  United Arab Emirates
                                 ARE
                                          11.044
                                                            88.0
5
              Argentina
                                 ARG
                                          17.716
                                                            59.9
6
                Armenia
                                 ARM
                                          13.308
                                                            41.9
7
    Antigua and Barbuda
                                 ATG
                                          16.447
                                                            63.4
           IncomeGroup
4
           High income
5
           High income
6
   Lower middle income
7
           High income
stats[['CountryCode','BirthRate','InternetUsers']][4:8] #subet
dataframe
  CountryCode
               BirthRate
                           InternetUsers
4
                                    88.0
          ARE
                   11.044
5
          ARG
                   17.716
                                    59.9
6
          ARM
                   13.308
                                    41.9
7
          ATG
                   16.447
                                     63.4
stats.head()
            CountryName CountryCode
                                      BirthRate
                                                  InternetUsers \
0
                  Aruba
                                 ABW
                                          10.244
                                                            78.9
1
            Afghanistan
                                 AFG
                                          35.253
                                                             5.9
2
                                 AG0
                                          45.985
                                                            19.1
                 Angola
3
                                 ALB
                Albania
                                          12.877
                                                            57.2
                                 ARE
                                          11.044
  United Arab Emirates
                                                            88.0
           IncomeGroup
0
           High income
1
            Low income
2 Upper middle income
```

```
Upper middle income
4
           High income
stats.BirthRate * stats.InternetUsers
       808.2516
0
1
       207.9927
2
       878.3135
3
       736.5644
4
       971.8720
190
       658.9400
191
       969.5250
192
        93,2668
193
       623,2534
194
       660.7275
Length: 195, dtype: float64
stats['myCalc'] = stats.BirthRate * stats.InternetUsers
stats.head()
            CountryName CountryCode
                                      BirthRate
                                                  InternetUsers \
0
                                          10.244
                   Aruba
                                 ABW
                                                            78.9
1
                                 AFG
                                          35.253
                                                             5.9
            Afghanistan
2
                 Angola
                                 AG0
                                          45.985
                                                            19.1
3
                Albania
                                 ALB
                                          12.877
                                                            57.2
  United Arab Emirates
                                 ARE
                                          11.044
                                                            88.0
           IncomeGroup
                           myCalc
0
           High income
                         808,2516
1
                        207.9927
            Low income
2
  Upper middle income 878.3135
3
   Upper middle income
                        736.5644
4
           High income
                         971.8720
stats.drop('myCalc',axis = 1)
              CountryName CountryCode BirthRate InternetUsers \
0
                     Aruba
                                                              78.9
                                   ABW
                                            10.244
1
              Afghanistan
                                   AFG
                                            35.253
                                                               5.9
2
                    Angola
                                   AG0
                                            45.985
                                                              19.1
3
                   Albania
                                   ALB
                                            12.877
                                                              57.2
4
     United Arab Emirates
                                   ARE
                                            11.044
                                                              88.0
                                    . . .
                                            32.947
                                                              20.0
190
              Yemen, Rep.
                                   YEM
191
                                    ZAF
                                            20.850
                                                              46.5
             South Africa
192
         Congo, Dem. Rep.
                                            42.394
                                                               2.2
                                    COD
193
                    Zambia
                                    ZMB
                                            40.471
                                                              15.4
194
                  Zimbabwe
                                   ZWE
                                            35.715
                                                              18.5
             IncomeGroup
```

```
0
             High income
1
              Low income
2
     Upper middle income
3
     Upper middle income
4
             High income
    Lower middle income
190
191
     Upper middle income
192
              Low income
193 Lower middle income
194
              Low income
[195 rows x 5 columns]
stats = stats.drop('myCalc',axis = 1)
stats.head()
            CountryName CountryCode
                                      BirthRate InternetUsers \
0
                  Aruba
                                 ABW
                                         10.244
                                                           78.9
                                                            5.9
1
            Afghanistan
                                 AFG
                                         35.253
2
                                         45.985
                                                           19.1
                                 AG0
                 Angola
3
                Albania
                                 ALB
                                         12.877
                                                           57.2
4 United Arab Emirates
                                         11.044
                                                           88.0
                                 ARE
           IncomeGroup
0
           High income
1
            Low income
2
  Upper middle income
3
  Upper middle income
           High income
stats.columns[2]
'BirthRate'
stats.InternetUsers<2 #we are checking given condition if its correct</pre>
true or false
0
       False
1
       False
2
       False
3
       False
4
       False
190
       False
191
       False
192
       False
193
       False
194
       False
Name: InternetUsers, Length: 195, dtype: bool
```

```
Filter = stats.InternetUsers < 2</pre>
Filter
0
       False
1
       False
2
       False
3
       False
4
       False
190
       False
191
       False
192
       False
       False
193
194
       False
Name: InternetUsers, Length: 195, dtype: bool
stats[3:7]
            CountryName CountryCode
                                      BirthRate
                                                  InternetUsers \
3
                Albania
                                 ALB
                                          12.877
                                                           57.2
4
  United Arab Emirates
                                 ARE
                                          11.044
                                                           88.0
5
              Argentina
                                 ARG
                                          17.716
                                                           59.9
6
                Armenia
                                 ARM
                                          13.308
                                                           41.9
           IncomeGroup
   Upper middle income
           High income
4
5
           High income
   Lower middle income
stats[30:40]
      CountryName CountryCode BirthRate InternetUsers
IncomeGroup
30
                           CAN
                                   10.900
           Canada
                                                    85.80
                                                                    High
income
31
      Switzerland
                           CHE
                                   10.200
                                                    86.34
                                                                    High
income
32
            Chile
                           CHL
                                   13.385
                                                    66.50
                                                                    High
income
                                   12,100
33
                           CHN
                                                    45.80
                                                           Upper middle
            China
income
34 Cote d'Ivoire
                           CIV
                                                           Lower middle
                                   37.320
                                                     8.40
income
35
         Cameroon
                           CMR
                                   37.236
                                                     6.40 Lower middle
income
                                                     6.60 Lower middle
36
      Congo, Rep.
                           COG
                                   37.011
income
37
         Colombia
                           COL
                                   16.076
                                                    51.70 Upper middle
income
```

38									
39		Comoros	COM	34.326	6.50	Low			
Stats[Filter] # IT WILL take that row which are false		Caho Verde	CPV	21 625	37 50	lower middle			
CountryName CountryCode BirthRate InternetUsers IncomeGroup 11		cabo verde	CI V	211023	37130	Lower middec			
CountryName CountryCode BirthRate InternetUsers IncomeGroup 11 Burundi BDI 44.151 1.3 Low income 52 Eritrea ERI 34.800 0.9 Low income 55 Ethiopia ETH 32.925 1.9 Low income 64 Guinea GIN 37.337 1.6 Low income 17 Myanmar MMR 18.119 1.6 Lower middle income 127 Niger NER 49.661 1.7 Low income 154 Sierra Leone SLE 36.729 1.7 Low income 156 Somalia SOM 43.891 1.5 Low income 172 Timor-Leste TLS 35.755 1.1 Lower middle income 172 Timor-Leste TLS 35.755 1.1 Lower middle income 18 False 1 False 2 True 3 False 4 False 1 True 193 True 194 False 195 Stats.BirthRate Length: 195, dtype: bool Filter2 = stats.BirthRate>40 Filter2 O False 1 False 1 True 3 False 1 False 1 True 3 False 1 False 1 False 1 False 1 True 194 False 1 True 3 False	c+>+c[E	Filtorl # TT	WTII +aka +ha	+ row whi	ch are false				
IncomeGroup 11 Burundi BDI 44.151 1.3 Low income 52 Eritrea ERI 34.800 0.9 Low income 55 Ethiopia ETH 32.925 1.9 Low income 64 Guinea GIN 37.337 1.6 Low income 117 Myanmar MMR 18.119 1.6 Lower middle income 127 Niger NER 49.661 1.7 Low income 154 Sierra Leone SLE 36.729 1.7 Low income 156 Somalia SOM 43.891 1.5 Low income 172 Timor-Leste TLS 35.755 1.1 Lower middle income stats.BirthRate>40 0 False 1 False 2 True 3 False 4 False 1 False 190 False 191 False 192 True 193 True 194 False Name: BirthRate, Length: 195, dtype: bool Filter2 = stats.BirthRate>40 Filter2 0 False 1 False 1 False 1 True 194 False Name: BirthRate, Length: 195, dtype: bool Filter2 = stats.BirthRate>40 Filter2 0 False 1 False 1 True 3 False 1 False 1 True 3 False	StatS[r	itterj # 11	WILL LAKE LIIA	L TOW WIT	cii are ratse				
11 Burundi BDI 44.151 1.3 Low income 52 Eritrea ERI 34.800 0.9 Low income 55 Ethiopia ETH 32.925 1.9 Low income 64 Guinea GIN 37.337 1.6 Low income 117 Myanmar MMR 18.119 1.6 Lower middle income 127 Niger NER 49.661 1.7 Low income 154 Sierra Leone SLE 36.729 1.7 Low income 156 Somalia SOM 43.891 1.5 Low income 172 Timor-Leste TLS 35.755 1.1 Lower middle income 172 Timor-Leste TLS 35.755 1.1 Lower middle income 173 True 3 False 4 False 1.1 False 1.1			ountryCode B	irthRate	InternetUsers				
income 52			RDT	44 151	1 3	Low			
S2		Daranas	DDI	44.131	1.5	LOW			
55	52	Eritrea	ERI	34.800	0.9	Low			
income 64		Fabiania	CTU	22 025	1.0	Laur			
64		Ethiopia	EIH	32.925	1.9	LOW			
117		Guinea	GIN	37.337	1.6	Low			
income 127									
127		Myanmar	MMR	18.119	1.6	Lower middle			
income 154 Sierra Leone SLE 36.729 1.7 Low income 156 Somalia SOM 43.891 1.5 Low income 172 Timor-Leste TLS 35.755 1.1 Lower middle income stats.BirthRate>40 0 False 1 False 2 True 3 False 4 False 190 False 191 False 192 True 193 True 194 False Name: BirthRate, Length: 195, dtype: bool Filter2 = stats.BirthRate>40 Filter2 0 False 1 False 2 True 3 False 1 False 1 False 2 True 3 False		Niger	NFR	49.661	1.7	Low			
<pre>income 156 Somalia</pre>		90.							
156 Somalia SOM 43.891 1.5 Low income 172 Timor-Leste TLS 35.755 1.1 Lower middle income stats.BirthRate>40 0 False 1 False 2 True 3 False 4 False 190 False 191 False 192 True 193 True 194 False Name: BirthRate, Length: 195, dtype: bool Filter2 = stats.BirthRate>40 Filter2 0 False 1 False 2 True 3 False		Lerra Leone	SLE	36.729	1.7	Low			
<pre>income 172 Timor-Leste TLS 35.755</pre>		Somalia	SOM	/13 801	1 5	Low			
<pre>172 Timor-Leste TLS 35.755</pre>		Jolila CIa	3011	45.031	1.5	LOW			
<pre>stats.BirthRate>40 0 False 1 False 2 True 3 False 4 False</pre>		Timor-Leste	TLS	35.755	1.1	Lower middle			
<pre>0 False 1 False 2 True 3 False 4 False</pre>	income								
<pre>1 False 2 True 3 False 4 False 4 False 5</pre>	stats.B	BirthRate>40							
<pre>1 False 2 True 3 False 4 False 4 False 5</pre>	0	Ealco							
<pre>True False False False True Palse Palse Palse Palse Palse Palse Palse Name: BirthRate, Length: 195, dtype: bool Filter2 = stats.BirthRate>40 Filter2 False True False True False False False False</pre>									
4 False 190 False 191 False 192 True 193 True 194 False Name: BirthRate, Length: 195, dtype: bool Filter2 = stats.BirthRate>40 Filter2 0 False 1 False 2 True 3 False									
4 False 190 False 191 False 192 True 193 True 194 False Name: BirthRate, Length: 195, dtype: bool Filter2 = stats.BirthRate>40 Filter2 0 False 1 False 2 True 3 False	3								
<pre>190 False 191 False 192 True 193 True 194 False Name: BirthRate, Length: 195, dtype: bool Filter2 = stats.BirthRate>40 Filter2 0 False 1 False 2 True 3 False</pre>	4	False							
<pre>191 False 192 True 193 True 194 False Name: BirthRate, Length: 195, dtype: bool Filter2 = stats.BirthRate>40 Filter2 0 False 1 False 2 True 3 False</pre>	100								
<pre>192 True 193 True 194 False Name: BirthRate, Length: 195, dtype: bool Filter2 = stats.BirthRate>40 Filter2 0 False 1 False 2 True 3 False</pre>									
<pre>193 True 194 False Name: BirthRate, Length: 195, dtype: bool Filter2 = stats.BirthRate>40 Filter2 0 False 1 False 2 True 3 False</pre>									
<pre>194 False Name: BirthRate, Length: 195, dtype: bool Filter2 = stats.BirthRate>40 Filter2 0 False 1 False 2 True 3 False</pre>									
<pre>Filter2 = stats.BirthRate>40 Filter2 0 False 1 False 2 True 3 False</pre>									
Filter2 0 False 1 False 2 True 3 False									
1 False2 True3 False									
1 False2 True3 False	O	Falso							
<pre>2 True 3 False</pre>									
3 False	2								
	3								
	4	False							

```
190
       False
191
       False
192
        True
193
        True
194
       False
Name: BirthRate, Length: 195, dtype: bool
stats[Filter2]
          CountryName CountryCode
                                     BirthRate
                                                 InternetUsers \
2
                                        45.985
                Angola
                                AG0
                                                           19.1
11
               Burundi
                                BDI
                                         44.151
                                                            1.3
14
         Burkina Faso
                                BFA
                                        40.551
                                                            9.1
65
                                GMB
                                        42.525
                                                           14.0
          Gambia, The
115
                  Mali
                                MLI
                                        44.138
                                                            3.5
127
                 Niger
                                NER
                                        49.661
                                                            1.7
128
              Nigeria
                                NGA
                                        40.045
                                                           38.0
156
               Somalia
                                SOM
                                                            1.5
                                        43.891
167
                                TCD
                                        45.745
                                                            2.3
                  Chad
178
                Uganda
                                UGA
                                        43.474
                                                           16.2
192
     Congo, Dem. Rep.
                                COD
                                        42.394
                                                            2.2
193
                Zambia
                                ZMB
                                        40.471
                                                           15.4
              IncomeGroup
2
     Upper middle income
11
               Low income
14
               Low income
65
               Low income
115
               Low income
127
               Low income
128
     Lower middle income
156
               Low income
167
               Low income
178
               Low income
192
               Low income
193
    Lower middle income
Filter & Filter2
0
       False
1
       False
2
       False
3
       False
4
       False
       . . .
190
       False
191
       False
192
       False
193
       False
```

```
194
       False
Length: 195, dtype: bool
stats[Filter & Filter2]
    CountryName CountryCode
                               BirthRate
                                           InternetUsers IncomeGroup
11
        Burundi
                                  44.151
                                                      1.3
                          BDI
                                                           Low income
127
                         NER
                                  49.661
          Niger
                                                      1.7
                                                           Low income
156
        Somalia
                         SOM
                                  43.891
                                                      1.5
                                                          Low income
stats[(stats.BirthRate > 40) & (stats.InternetUsers < 2)]</pre>
    CountryName CountryCode
                               BirthRate
                                           InternetUsers IncomeGroup
11
        Burundi
                          BDI
                                  44.151
                                                      1.3
                                                           Low income
127
          Niger
                         NER
                                  49.661
                                                      1.7
                                                           Low income
                                  43.891
156
        Somalia
                         SOM
                                                      1.5
                                                           Low income
stats.head()
            CountryName CountryCode
                                       BirthRate
                                                   InternetUsers \
0
                   Aruba
                                  ABW
                                           10.244
                                                             78.9
1
                                  AFG
                                           35.253
            Afghanistan
                                                              5.9
2
                                  AG0
                                           45.985
                                                             19.1
                  Angola
3
                 Albania
                                  ALB
                                           12.877
                                                             57.2
                                  ARE
                                           11.044
                                                             88.0
   United Arab Emirates
            IncomeGroup
0
            High income
1
            Low income
2
   Upper middle income
3
   Upper middle income
            High income
stats[stats.IncomeGroup == 'Low income']
                   CountryName CountryCode
                                              BirthRate
                                                          InternetUsers \
                                                                    5.90
1
                   Afghanistan
                                         AFG
                                                 35,253
11
                       Burundi
                                         BDI
                                                 44.151
                                                                    1.30
13
                                                 36,440
                                                                    4.90
                         Benin
                                         BEN
14
                  Burkina Faso
                                                 40.551
                                                                    9.10
                                         BFA
29
     Central African Republic
                                         CAF
                                                 34.076
                                                                    3.50
38
                       Comoros
                                         COM
                                                 34.326
                                                                    6.50
52
                                                 34.800
                                                                    0.90
                       Eritrea
                                         ERI
55
                      Ethiopia
                                         ETH
                                                 32,925
                                                                    1.90
64
                                                 37.337
                        Guinea
                                         GIN
                                                                    1.60
65
                                                 42.525
                   Gambia, The
                                         GMB
                                                                   14.00
66
                 Guinea-Bissau
                                         GNB
                                                 37.503
                                                                    3.10
77
                                                 25.345
                         Haiti
                                         HTI
                                                                   10.60
93
                      Cambodia
                                         KHM
                                                 24.462
                                                                    6.80
99
                                         LBR
                                                 35.521
                                                                    3.20
                        Liberia
111
                    Madagascar
                                         MDG
                                                 34,686
                                                                    3.00
```

115 120 123 127 132 148 154 156 158 167 168 177 178 192 194	Mali Mozambique Malawi Niger Nepal Rwanda Sierra Leone Somalia South Sudan Chad Togo Tanzania Uganda Congo, Dem. Rep. Zimbabwe	MLI MOZ MWI NER NPL RWA SLE SOM SSD TCD TGO TZA UGA COD ZWE	44.138 39.705 39.459 49.661 20.923 32.689 36.729 43.891 37.126 45.745 36.080 39.518 43.474 42.394 35.715	3.50 5.40 5.05 1.70 13.30 9.00 1.70 1.50 14.10 2.30 4.50 4.40 16.20 2.20 18.50
Income G 1	come come come come come come come come			

stats.IncomeGroup.unique()

192 Low income 194 Low income

Introduction to seaborn # seaborn is very powerfull

visualizatio(STATISTIC VISULAIZATION) pkg in python

```
import matplotlib.pyplot as plt # visulaiztion
import seaborn as sns # distribution visualtion
%matplotlib inline
plt.rcParams['figure.figsize'] = 8,4
stats.head()
            CountryName CountryCode
                                     BirthRate InternetUsers \
0
                  Aruba
                                ABW
                                        10.244
                                                         78.9
1
            Afghanistan
                                AFG
                                        35.253
                                                          5.9
2
                 Angola
                                AG0
                                        45.985
                                                         19.1
3
                Albania
                                ALB
                                        12.877
                                                         57.2
4 United Arab Emirates
                                        11.044
                                ARE
                                                         88.0
           IncomeGroup
0
           High income
1
            Low income
2 Upper middle income
3 Upper middle income
           High income
vis1 = sns.histplot(stats["InternetUsers"])
vis1
<Axes: xlabel='InternetUsers', ylabel='Density'>
vis1 = sns.distplot(stats["InternetUsers"])
C:\Users\DELL\AppData\Local\Temp\ipykernel 21044\1197685782.py:1:
UserWarning:
`distplot` is a deprecated function and will be removed in seaborn
v0.14.0.
Please adapt your code to use either `displot` (a figure-level
function with
similar flexibility) or `histplot` (an axes-level function for
histograms).
```

For a guide to updating your code to use the new functions, please see https://gist.github.com/mwaskom/de44147ed2974457ad6372750bbe5751

vis1 = sns.distplot(stats["InternetUsers"])