In [4]:
```python
import pandas as pd
```

In [6]:
```python
df=pd.read_csv(r"C:\Users\kavya\Downloads\data (1).csv")
```

In [7]:
```python
df
```

Out[7]:

	CountryName	CountryCode	BirthRate	InternetUsers	IncomeGroup
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
4	United Arab Emirates	ARE	11.044	88.0	High income
...	...	...	...	...	...
190	Yemen, Rep.	YEM	32.947	20.0	Lower middle income
191	South Africa	ZAF	20.850	46.5	Upper middle income
192	Congo, Dem. Rep.	COD	42.394	2.2	Low income
193	Zambia	ZMB	40.471	15.4	Lower middle income
194	Zimbabwe	ZWE	35.715	18.5	Low income

195 rows × 5 columns

In [8]:
```python
df.shape
```

Out[8]: (195, 5)

In [9]:
```python
type(df)
```

Out[9]: pandas.core.frame.DataFrame

In [10]:
```python
len(df)
```

Out[10]: 195

In [12]:
```python
df.columns
```

Out[12]: Index(['CountryName', 'CountryCode', 'BirthRate', 'InternetUsers',
           'IncomeGroup'],
          dtype='object')

In [13]:
```python
len(df.columns)
```

Out[13]: 5

In [15]:
```python
df.shape
```

Out[15]: (195, 5)

In [17]:
```python
df.info()
```

```
<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   IncomeGroup   195 non-null    object
dtypes: float64(2), object(3)
memory usage: 7.7+ KB
```

In [18]:
```python
df.head()
```

Out[18]:

	CountryName	CountryCode	BirthRate	InternetUsers	IncomeGroup
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
4	United Arab Emirates	ARE	11.044	88.0	High income

In [19]:
```python
df.tail()
```

Out[19]:

	CountryName	CountryCode	BirthRate	InternetUsers	IncomeGroup
190	Yemen, Rep.	YEM	32.947	20.0	Lower middle income
191	South Africa	ZAF	20.850	46.5	Upper middle income
192	Congo, Dem. Rep.	COD	42.394	2.2	Low income
193	Zambia	ZMB	40.471	15.4	Lower middle income
194	Zimbabwe	ZWE	35.715	18.5	Low income

In [21]: `df[5:11]`

Out[21]:

	CountryName	CountryCode	BirthRate	InternetUsers	IncomeGroup
5	Argentina	ARG	17.716	59.9000	High income
6	Armenia	ARM	13.308	41.9000	Lower middle income
7	Antigua and Barbuda	ATG	16.447	63.4000	High income
8	Australia	AUS	13.200	83.0000	High income
9	Austria	AUT	9.400	80.6188	High income
10	Azerbaijan	AZE	18.300	58.7000	Upper middle income

In [22]: `df.head(1)`

Out[22]:

	CountryName	CountryCode	BirthRate	InternetUsers	IncomeGroup
0	Aruba	ABW	10.244	78.9	High income

In [23]: `df.head(10)`

Out[23]:

	CountryName	CountryCode	BirthRate	InternetUsers	IncomeGroup
0	Aruba	ABW	10.244	78.9000	High income
1	Afghanistan	AFG	35.253	5.9000	Low income
2	Angola	AGO	45.985	19.1000	Upper middle income
3	Albania	ALB	12.877	57.2000	Upper middle income
4	United Arab Emirates	ARE	11.044	88.0000	High income
5	Argentina	ARG	17.716	59.9000	High income
6	Armenia	ARM	13.308	41.9000	Lower middle income
7	Antigua and Barbuda	ATG	16.447	63.4000	High income
8	Australia	AUS	13.200	83.0000	High income
9	Austria	AUT	9.400	80.6188	High income

In [24]: `df[::-1]`

Out[24]:

	CountryName	CountryCode	BirthRate	InternetUsers	IncomeGroup
194	Zimbabwe	ZWE	35.715	18.5	Low income
193	Zambia	ZMB	40.471	15.4	Lower middle income
192	Congo, Dem. Rep.	COD	42.394	2.2	Low income
191	South Africa	ZAF	20.850	46.5	Upper middle income
190	Yemen, Rep.	YEM	32.947	20.0	Lower middle income
...	...	...	...	...	...
4	United Arab Emirates	ARE	11.044	88.0	High income
3	Albania	ALB	12.877	57.2	Upper middle income
2	Angola	AGO	45.985	19.1	Upper middle income
1	Afghanistan	AFG	35.253	5.9	Low income
0	Aruba	ABW	10.244	78.9	High income

195 rows × 5 columns

In [26]: `df['CountryName']`

Out[26]:
```
0                    Aruba
1               Afghanistan
2                   Angola
3                   Albania
4         United Arab Emirates
                 ...
190              Yemen, Rep.
191             South Africa
192          Congo, Dem. Rep.
193                  Zambia
194                Zimbabwe
Name: CountryName, Length: 195, dtype: object
```

In [27]: `df[1:100:10]`

Out[27]:

	CountryName	CountryCode	BirthRate	InternetUsers	IncomeGroup
1	Afghanistan	AFG	35.253	5.9000	Low income
11	Burundi	BDI	44.151	1.3000	Low income
21	Belize	BLZ	23.092	33.6000	Upper middle income
31	Switzerland	CHE	10.200	86.3400	High income
41	Cuba	CUB	10.400	27.9300	Upper middle income
51	Egypt, Arab Rep.	EGY	28.032	29.4000	Lower middle income
61	United Kingdom	GBR	12.200	89.8441	High income
71	Guatemala	GTM	27.465	19.7000	Lower middle income
81	Ireland	IRL	15.000	78.2477	High income
91	Kenya	KEN	35.194	39.0000	Lower middle income

In [30]: `df[['CountryName','CountryCode','BirthRate']]`

Out[30]:

	CountryName	CountryCode	BirthRate
0	Aruba	ABW	10.244
1	Afghanistan	AFG	35.253
2	Angola	AGO	45.985
3	Albania	ALB	12.877
4	United Arab Emirates	ARE	11.044
...	...	...	...
190	Yemen, Rep.	YEM	32.947
191	South Africa	ZAF	20.850
192	Congo, Dem. Rep.	COD	42.394
193	Zambia	ZMB	40.471
194	Zimbabwe	ZWE	35.715

195 rows × 3 columns

In [31]: `df.describe()`   *#only understands numerical data*

Out[31]:

	BirthRate	InternetUsers
count	195.000000	195.000000
mean	21.469928	42.076471
std	10.605467	29.030788
min	7.900000	0.900000
25%	12.120500	14.520000
50%	19.680000	41.000000
75%	29.759500	66.225000
max	49.661000	96.546800

In [32]: `df.describe().transpose()`   *#transpose convert rows to columnsdf*

Out[32]:

	count	mean	std	min	25%	50%	75%	max
BirthRate	195.0	21.469928	10.605467	7.9	12.1205	19.68	29.7595	49.6610
InternetUsers	195.0	42.076471	29.030788	0.9	14.5200	41.00	66.2250	96.5468

In [33]: `df.columns`

Out[33]: `Index(['CountryName', 'CountryCode', 'BirthRate', 'InternetUsers',`
`           'IncomeGroup'],`
`         dtype='object')`

In [38]: `df.columns= ['a','b','c','d','e']`

In [39]: df

Out[39]:

	a	b	c	d	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
4	United Arab Emirates	ARE	11.044	88.0	High income
...	...	...	...	...	...
190	Yemen, Rep.	YEM	32.947	20.0	Lower middle income
191	South Africa	ZAF	20.850	46.5	Upper middle income
192	Congo, Dem. Rep.	COD	42.394	2.2	Low income
193	Zambia	ZMB	40.471	15.4	Lower middle income
194	Zimbabwe	ZWE	35.715	18.5	Low income

195 rows × 5 columns

In [40]: df.columns=['CountryName','CountryCode','BirthRate','InternetUse','IncomeGrou

In [41]: df

Out[41]:

	CountryName	CountryCode	BirthRate	InternetUse	IncomeGroup
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
4	United Arab Emirates	ARE	11.044	88.0	High income
...	...	...	...	...	...
190	Yemen, Rep.	YEM	32.947	20.0	Lower middle income
191	South Africa	ZAF	20.850	46.5	Upper middle income
192	Congo, Dem. Rep.	COD	42.394	2.2	Low income
193	Zambia	ZMB	40.471	15.4	Lower middle income
194	Zimbabwe	ZWE	35.715	18.5	Low income

195 rows × 5 columns

In [42]: `df[4:8]`

Out[42]:

	CountryName	CountryCode	BirthRate	InternetUse	IncomeGroup
4	United Arab Emirates	ARE	11.044	88.0	High income
5	Argentina	ARG	17.716	59.9	High income
6	Armenia	ARM	13.308	41.9	Lower middle income
7	Antigua and Barbuda	ATG	16.447	63.4	High income

In [43]: `df[4:8][['CountryName','CountryCode']]`

Out[43]:

	CountryName	CountryCode
4	United Arab Emirates	ARE
5	Argentina	ARG
6	Armenia	ARM
7	Antigua and Barbuda	ATG

In [44]: `df1=df[['CountryName','BirthRate']]`

In [45]: `df1`

Out[45]:

	CountryName	BirthRate
0	Aruba	10.244
1	Afghanistan	35.253
2	Angola	45.985
3	Albania	12.877
4	United Arab Emirates	11.044
...	...	...
190	Yemen, Rep.	32.947
191	South Africa	20.850
192	Congo, Dem. Rep.	42.394
193	Zambia	40.471
194	Zimbabwe	35.715

195 rows × 2 columns

In [46]: `df1.shape`

Out[46]: `(195, 2)`

In [47]:
```python
df.BirthRate*df.InternetUse
```

Out[47]:
```
0        808.2516
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
```

In [ ]:
```python
import pandas as pd
```

In [5]:
```python
f=pd.read_cdsv(r"C:\Users\kavya\Downloads\data (1).csv")
```

```
---------------------------------------------------------------------------
NameError                                 Traceback (most recent call last)
Cell In[5], line 1
----> 1 df=pd.read_csv(r"C:\Users\kavya\Downloads\data (1).csv")

NameError: name 'pd' is not defined
```

In [1]:
```python
import pandas as pd
```

In [4]:
```python
f=pd.read_csv(r"C:\Users\kavya\Downloads\data (1).csv")
```

In [5]: `f`

Out[5]:

	CountryName	CountryCode	BirthRate	InternetUsers	IncomeGroup
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
4	United Arab Emirates	ARE	11.044	88.0	High income
...	...	...	...	...	...
190	Yemen, Rep.	YEM	32.947	20.0	Lower middle income
191	South Africa	ZAF	20.850	46.5	Upper middle income
192	Congo, Dem. Rep.	COD	42.394	2.2	Low income
193	Zambia	ZMB	40.471	15.4	Lower middle income
194	Zimbabwe	ZWE	35.715	18.5	Low income

195 rows × 5 columns

In [6]: `f.shape`

Out[6]: `(195, 5)`

In [7]: `f.columns`

Out[7]:
```
Index(['CountryName', 'CountryCode', 'BirthRate', 'InternetUsers',
       'IncomeGroup'],
      dtype='object')
```

In [8]: `f.columns=['country','code','BR','netusers','income']`

In [9]: `f`

Out[9]:

	country	code	BR	netusers	income
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
4	United Arab Emirates	ARE	11.044	88.0	High income
...	...	...	...	...	...
190	Yemen, Rep.	YEM	32.947	20.0	Lower middle income
191	South Africa	ZAF	20.850	46.5	Upper middle income
192	Congo, Dem. Rep.	COD	42.394	2.2	Low income
193	Zambia	ZMB	40.471	15.4	Lower middle income
194	Zimbabwe	ZWE	35.715	18.5	Low income

195 rows × 5 columns

In [10]: `f.describe()`

Out[10]:

	BR	netusers
count	195.000000	195.000000
mean	21.469928	42.076471
std	10.605467	29.030788
min	7.900000	0.900000
25%	12.120500	14.520000
50%	19.680000	41.000000
75%	29.759500	66.225000
max	49.661000	96.546800

In [12]: `f.describe().transpose()`

Out[12]:

	count	mean	std	min	25%	50%	75%	max
BR	195.0	21.469928	10.605467	7.9	12.1205	19.68	29.7595	49.6610
netusers	195.0	42.076471	29.030788	0.9	14.5200	41.00	66.2250	96.5468

In [13]: `type(f)`

Out[13]: `pandas.core.frame.DataFrame`

In [14]:
```python
a=2
type(a)
```

Out[14]: int

In [15]:
```python
b=2.8
type(b)
```

Out[15]: float

In [16]:
```python
c='moni'
type(c)
```

Out[16]: str

In [17]:
```python
g=True
type(g)
```

Out[17]: bool

In [ ]: