```
from google.colab import files

import pandas as pd

files.upload()
```

Choose Files data.csv

- **data.csv**(text/csv) - 8357 bytes, last modified: 6/4/2025 - 100% done

```
Saving data.csv to data (1).csv
{'data (1).csv':
b'CountryName,CountryCode,BirthRate,InternetUsers,IncomeGroup\r\nAruba,ABW,10.
income\r\nAfghanistan,AFG,35.253,5.9,Low
income\r\nAngola,AGO,45.985,19.1,Upper middle
income\r\nAlbania,ALB,12.877,57.2,Upper middle income\r\nUnited Arab
Emirates,ARE,11.044,88,High income\r\nArgentina,ARG,17.716,59.9,High
income\r\nArmenia,ARM,13.308,41.9,Lower middle income\r\nAntigua and
Barbuda,ATG,16.447,63.4,High income\r\nAustralia,AUS,13.2,83,High
income\r\nAustria,AUT,9.4,80.6188,High
income\r\nAzerbaijan,AZE,18.3,58.7,Upper middle
income\r\nBurundi,BDI,44.151,1.3,Low income\r\nBelgium,BEL,11.2,82.1702,High
income\r\nBenin,BEN,36.44,4.9,Low income\r\nBurkina Faso,BFA,40.551,9.1,Low
income\r\nBangladesh,BGD,20.142,6.63,Lower middle
income\r\nBulgaria,BGR,9.2,53.0615,Upper middle
income\r\nBahrain,BHR,15.04,90.0000397,High income\r\n"Bahamas,
The",BHS,15.339,72,High income\r\nBosnia and
Herzegovina,BIH,9.062,57.79,Upper middle
income\r\nBelarus,BLR,12.5,54.17,Upper middle
income\r\nBelize,BLZ,23.092,33.6,Upper middle
income\r\nBermuda,BMU,10.4,95.3,High income\r\nBolivia,BOL,24.236,36.94,Lower
middle income\r\nBrazil,BRA,14.931,51.04,Upper middle
income\r\nBarbados,BRB,12.188,73,High income\r\nBrunei
Darussalam,BRN,16.405,64.5,High income\r\nBhutan,BTN,18.134,29.9,Lower middle
income\r\nBotswana,BWA,25.267,15,Upper middle income\r\nCentral African
Republic,CAF,34.076,3.5,Low income\r\nCanada,CAN,10.9,85.8,High
income\r\nSwitzerland,CHE,10.2,86.34,High
income\r\nChile,CHL,13.385,66.5,High income\r\nChina,CHN,12.1,45.8,Upper
middle income\r\nCote d\'Ivoire,CIV,37.32,8.4,Lower middle
income\r\nCameroon,CMR,37.236,6.4,Lower middle income\r\n"Congo,
Rep.",COG,37.011,6.6,Lower middle income\r\nColombia,COL,16.076,51.7,Upper
middle income\r\nComoros,COM,34.326,6.5,Low income\r\nCabo
Verde,CPV,21.625,37.5,Lower middle income\r\nCosta
Rica,CRI,15.022,45.96,Upper middle income\r\nCuba,CUB,10.4,27.93,Upper middle
income\r\nCayman Islands,CYM,12.5,74.1,High
income\r\nCyprus,CYP,11.436,65.4548,High income\r\nCzech
Republic,CZE,10.2,74.1104,High income\r\nGermany,DEU,8.5,84.17,High
income\r\nDjibouti,DJI,25.486,9.5,Lower middle
income\r\nDenmark,DNK,10,94.6297,High income\r\nDominican
Republic,DOM,21.198,45.9,Upper middle income\r\nAlgeria,DZA,24.738,16.5,Upper
middle income\r\nEcuador,ECU,21.07,40.35368423,Upper middle income\r\n"Egypt,
Arab Rep.",EGY,28.032,29.4,Lower middle income\r\nEritrea,ERI,34.8,0.9,Low
income\r\nSpain,ESP,9.1,71.635,High income\r\nEstonia,EST,10.3,79.4,High
income\r\nEthiopia,ETH,32.925,1.9,Low income\r\nFinland,FIN,10.7,91.5144,High
income\r\nFiji,FJI,20.463,37.1,Upper middle
income\r\nFrance,FRA,12.3,81.9198,High income\r\n"Micronesia, Fed.
Sts.",FSM,23.511,27.8,Lower middle income\r\nGabon,GAB,30.555,9.2,Upper
middle income\r\nUnited Kingdom,GBR,12.2,89.8441,High
income\r\nGeorgia,GEO,13.332,43.3,Lower middle
income\r\nGhana,GHA,33.131,12.3,Lower middle
income\r\nGuinea,GIN,37.337,1.6,Low income\r\n"Gambia, The",GMB,42.525,14,Low
income\r\nGuinea-Bissau,GNB,37.503,3.1,Low income\r\nEquatorial
Guinea,GNQ,35.362,16.4,High income\r\nGreece,GRC,8.5,59.8663,High
income\r\nGrenada,GRD,19.334,35,Upper middle
income\r\nGreenland,GRL,14.5,65.8,High
income\r\nGuatemala,GTM,27.465,19.7,Lower middle
income\r\nGuam,GUM,17.389,65.4,High income\r\nGuyana,GUY,18.885,35,Lower
middle income\r\n"Hong Kong SAR, China",HKG,7.9,74.2,High
```

income\r\nHonduras,HND,21.593,17.8,Lower middle
income\r\nCroatia,HRV,9.4,66.7476,High income\r\nHaiti,HTI,25.345,10.6,Low
income\r\nHungary,HUN,9.2,72.6439,High
income\r\nIndonesia,IDN,20.297,14.94,Lower middle
income\r\nIndia,IND,20.291,15.1,Lower middle
income\r\nIreland,IRL,15,78.2477,High income\r\n"Iran, Islamic
Rep.",IRN,17.9,29.95,Upper middle income\r\nIraq,IRQ,31.093,9.2,Upper middle
income\r\nIceland,ISL,13.4,96.5468,High income\r\nIsrael,ISR,21.3,70.8,High
income\r\nItaly,ITA,8.5,58.4593,High income\r\nJamaica,JAM,13.54,37.1,Upper
middle income\r\nJordan,JOR,27.046,41,Upper middle
income\r\nJapan,JPN,8.2,89.71,High income\r\nKazakhstan,KAZ,22.73,54,Upper
middle income\r\nKenya,KEN,35.194,39,Lower middle income\r\nKyrgyz
Republic,KGZ,27.2,23,Lower middle income\r\nCambodia,KHM,24.462,6.8,Low
income\r\nKiribati,KIR,29.044,11.5,Lower middle income\r\n"Korea,
Rep.",KOR,8.6,84.77,High income\r\nKuwait,KWT,20.575,75.46,High income\r\nLao
PDR,LAO,27.051,12.5,Lower middle income\r\nLebanon,LBN,13.426,70.5,Upper
middle income\r\nLiberia,LBR,35.521,3.2,Low
income\r\nLibya,LBY,21.425,16.5,Upper middle income\r\nSt.
Lucia,LCA,15.43,46.2,Upper middle income\r\nLiechtenstein,LIE,9.2,93.8,High
income\r\nSri Lanka,LKA,17.863,21.9,Lower middle
income\r\nLesotho,LSO,28.738,5,Lower middle
income\r\nLithuania,LTU,10.1,68.4529,High
income\r\nLuxembourg,LUX,11.3,93.7765,High
income\r\nLatvia,LVA,10.2,75.2344,High income\r\n"Macao SAR,
China",MAC,11.256,65.8,High income\r\nMorocco,MAR,21.023,56,Lower middle
income\r\nMoldova,MDA,12.141,45,Lower middle
income\r\nMadagascar,MDG,34.686,3,Low
income\r\nMaldives,MDV,21.447,44.1,Upper middle
income\r\nMexico,MEX,19.104,43.46,Upper middle income\r\n"Macedonia,
FYR",MKD,11.222,65.24,Upper middle income\r\nMali,MLI,44.138,3.5,Low
income\r\nMalta,MLT,9.5,68.9138,High income\r\nMyanmar,MMR,18.119,1.6,Lower
middle income\r\nMontenegro,MNE,11.616,60.31,Upper middle
income\r\nMongolia,MNG,24.275,20,Upper middle
income\r\nMozambique,MOZ,39.705,5.4,Low
income\r\nMauritania,MRT,33.801,6.2,Lower middle
income\r\nMauritius,MUS,10.9,39,Upper middle
income\r\nMalawi,MWI,39.459,5.05,Low
income\r\nMalaysia,MYS,16.805,66.97,Upper middle
income\r\nNamibia,NAM,29.937,13.9,Upper middle income\r\nNew
Caledonia,NCL,17,66,High income\r\nNiger,NER,49.661,1.7,Low
income\r\nNigeria,NGA,40.045,38,Lower middle
income\r\nNicaragua,NIC,20.788,15.5,Lower middle
income\r\nNetherlands,NLD,10.2,93.9564,High
income\r\nNorway,NOR,11.6,95.0534,High income\r\nNepal,NPL,20.923,13.3,Low
income\r\nNew Zealand,NZL,13.12,82.78,High
income\r\nOman,OMN,20.419,66.45,High income\r\nPakistan,PAK,29.582,10.9,Lower
middle income\r\nPanama,PAN,19.68,44.03,Upper middle
income\r\nPeru,PER,20.198,39.2,Upper middle
income\r\nPhilippines,PHL,23.79,37,Lower middle income\r\nPapua New
Guinea,PNG,28.899,6.5,Lower middle income\r\nPoland,POL,9.6,62.8492,High
income\r\nPuerto Rico,PRI,10.8,73.9,High
income\r\nPortugal,PRT,7.9,62.0956,High
income\r\nParaguay,PRY,21.588,36.9,Upper middle income\r\nFrench
Polynesia,PYF,16.393,56.8,High income\r\nQatar,QAT,11.94,85.3,High
income\r\nRomania,ROU,8.8,49.7645,Upper middle income\r\nRussian
Federation,RUS,13.2,67.97,High income\r\nRwanda,RWA,32.689,9,Low
income\r\nSaudi Arabia,SAU,20.576,60.5,High
income\r\nSudan,SDN,33.477,22.7,Lower middle
income\r\nSenegal,SEN,38.533,13.1,Lower middle
income\r\nSingapore,SGP,9.3,81,High income\r\nSolomon

Islands,SLB,30.578,8,Lower middle income\r\nSierra Leone,SLE,36.729,1.7,Low income\r\nEl Salvador,SLV,17.476,23.1093,Lower middle income\r\nSomalia,SOM,43.891,1.5,Low income\r\nSerbia,SRB,9.2,51.5,Upper middle income\r\nSouth Sudan,SSD,37.126,14.1,Low income\r\nSao Tome and Principe,STP,34.537,23,Lower middle income\r\nSuriname,SUR,18.455,37.4,Upper middle income\r\nSlovak Republic,SVK,10.1,77.8826,High income\r\nSlovenia,SVN,10.2,72.6756,High income\r\nSweden,SWE,11.8,94.7836,High income\r\nSwaziland,SWZ,30.093,24.7,Lower middle income\r\nSeychelles,SYC,18.6,50.4,High income\r\nSyrian Arab Republic,SYR,24.043,26.2,Lower middle income\r\nChad,TCD,45.745,2.3,Low income\r\nTogo,TGO,36.08,4.5,Low income\r\nThailand,THA,11.041,28.94,Upper middle income\r\nTajikistan,TJK,30.792,16,Lower middle income\r\nTurkmenistan,TKM,21.322,9.6,Upper middle income\r\nTimor-Leste,TLS,35.755,1.1,Lower middle income\r\nTonga,TON,25.409,35,Upper middle income\r\nTrinidad and Tobago,TTO,14.59,63.8,High income\r\nTunisia,TUN,19.8,43.8,Upper middle income\r\nTurkey,TUR,16.836,46.25,Upper middle income\r\nTanzania,TZA,39.518,4.4,Low income\r\nUganda,UGA,43.474,16.2,Low income\r\nUkraine,UKR,11.1,41,Lower middle income\r\nUruguay,URY,14.374,57.69,High income\r\nUnited States,USA,12.5,84.2,High income\r\nUzbekistan,UZB,22.5,38.2,Lower middle income\r\nSt. Vincent and the Grenadines,VCT,16.306,52,Upper middle income\r\n"Venezuela, RB",VEN,19.842,54.9,High income\r\nVirgin Islands (U.S.),VIR,10.7,45.3,High income\r\nVietnam,VNM,15.537,43.9,Lower middle income\r\nVanuatu,VUT,26.739,11.3,Lower middle income\r\nWest Bank and Gaza,PSE,30.394,46.6,Lower middle income\r\nSamoa,WSM,26.172,15.3,Lower middle income\r\n"Yemen, Rep.",YEM,32.947,20,Lower middle income\r\nSouth Africa,ZAF,20.85,46.5,Upper middle income\r\n"Congo, Dem. Rep.",COD,42.394,2.2,Low income\r\nZambia,ZMB,40.471,15.4,Lower middle income\r\nZimbabwe,ZWE,35.715,18.5,Low income\r\n'}

```
df=pd.read_csv('data.csv')

df
```

	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

Next steps: Generate code with df | View recommended plots | New interactive sheet

```
df.describe()
```

	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

```
df.shape
```

```
(195, 5)
```

```
df.columns
```

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

```
df.isnull().sum()
```

	0
CountryName	0
CountryCode	0
BirthRate	0
InternetUsers	0
IncomeGroup	0

dtype: int64

```
id(df)
```

```
137657519801168
```

```
df.isnull()
```

	CountryName	CountryCode	BirthRate	InternetUsers	IncomeGroup
0	False	False	False	False	False
1	False	False	False	False	False
2	False	False	False	False	False
3	False	False	False	False	False
4	False	False	False	False	False
...	...	...	...	...	...
190	False	False	False	False	False
191	False	False	False	False	False
192	False	False	False	False	False
193	False	False	False	False	False
194	False	False	False	False	False

195 rows × 5 columns

```
df.head(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

Next steps: Generate code with df | View recommended plots | New interactive sheet

```
df.tail()
```

	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

```
df.dtypes
```

	0
CountryName	object
CountryCode	object
BirthRate	float64
InternetUsers	float64
IncomeGroup	object

dtype: object

```
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
```

```
df[:]
```

	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

```
df[::-1]
```

	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

```
df[:11]
```

	CountryName	CountryCode	BirthRate	InternetUsers	IncomeGroup
0	Aruba	ABW	10.244	78.9000	High income
1	Afghanistan	AFG	35.253	5.9000	Low income

```
df[0:200:50]
```

	CountryName	CountryCode	BirthRate	InternetUsers	IncomeGroup
0	Aruba	ABW	10.244	78.900000	High income
50	Ecuador	ECU	21.070	40.353684	Upper middle income
100	Libya	LBY	21.425	16.500000	Upper middle income
150	Sudan	SDN	33.477	22.700000	Lower middle income
7	Antigua and Barbuda	ATG	16.447	63.4000	High income

```
df[['CountryName','CountryCode','BirthRate']]
```

	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