In [4]:
```
import pandas as pd
pd.set_option('display.max.row', 20)
```

In [5]:
```
df = pd.read_csv(r"C:\Users\kallzz\Desktop\Data Analytics Stuff\Data Analyst - Boot
```

In [6]:
```
df
```

Out[6]:

	Rank	CCA3	Country	Capital	Continent	2022 Population	2020 Population	2015 Population	201(Populatio
0	36	AFG	Afghanistan	Kabul	Asia	41128771.0	38972230.0	33753499.0	28189672.(
1	138	ALB	Albania	Tirana	Europe	2842321.0	2866849.0	2882481.0	2913399.(
2	34	DZA	Algeria	Algiers	Africa	44903225.0	43451666.0	39543154.0	35856344.(
3	213	ASM	American Samoa	Pago Pago	Oceania	44273.0	46189.0	51368.0	54849.(
4	203	AND	Andorra	Andorra la Vella	Europe	79824.0	77700.0	71746.0	71519.(
...	...	...	...	...	...	...	...	...	...
229	226	WLF	Wallis and Futuna	Mata-Utu	Oceania	11572.0	11655.0	12182.0	13142.(
230	172	ESH	Western Sahara	El Aaiún	Africa	575986.0	556048.0	491824.0	413296.(
231	46	YEM	Yemen	Sanaa	Asia	33696614.0	32284046.0	28516545.0	24743946.(
232	63	ZMB	Zambia	Lusaka	Africa	20017675.0	18927715.0	NaN	13792086.(
233	74	ZWE	Zimbabwe	Harare	Africa	16320537.0	15669666.0	14154937.0	12839771.(

234 rows × 17 columns

In [7]:
```
# set index - method 1
df = pd.read_csv(r"C:\Users\kallzz\Desktop\Data Analytics Stuff\Data Analyst - Boot
df
```

Out[7]:

Country	Rank	CCA3	Capital	Continent	2022 Population	2020 Population	2015 Population	2010 Population	Po
Afghanistan	36	AFG	Kabul	Asia	41128771.0	38972230.0	33753499.0	28189672.0	19
Albania	138	ALB	Tirana	Europe	2842321.0	2866849.0	2882481.0	2913399.0	3
Algeria	34	DZA	Algiers	Africa	44903225.0	43451666.0	39543154.0	35856344.0	30
American Samoa	213	ASM	Pago Pago	Oceania	44273.0	46189.0	51368.0	54849.0	
Andorra	203	AND	Andorra la Vella	Europe	79824.0	77700.0	71746.0	71519.0	
...	...	...	...	...	...	...	...	...	
Wallis and Futuna	226	WLF	Mata-Utu	Oceania	11572.0	11655.0	12182.0	13142.0	
Western Sahara	172	ESH	El Aaiún	Africa	575986.0	556048.0	491824.0	413296.0	
Yemen	46	YEM	Sanaa	Asia	33696614.0	32284046.0	28516545.0	24743946.0	18
Zambia	63	ZMB	Lusaka	Africa	20017675.0	18927715.0	NaN	13792086.0	9
Zimbabwe	74	ZWE	Harare	Africa	16320537.0	15669666.0	14154937.0	12839771.0	11

234 rows × 16 columns

In [12]:
```
# reset index
df.reset_index(inplace = True)
df
```

Out[12]:

	index	Rank	CCA3	Country	Capital	Continent	2022 Population	2020 Population	2015 Population	Po
0	0	36	AFG	Afghanistan	Kabul	Asia	41128771.0	38972230.0	33753499.0	28
1	1	138	ALB	Albania	Tirana	Europe	2842321.0	2866849.0	2882481.0	2
2	2	34	DZA	Algeria	Algiers	Africa	44903225.0	43451666.0	39543154.0	35
3	3	213	ASM	American Samoa	Pago Pago	Oceania	44273.0	46189.0	51368.0	
4	4	203	AND	Andorra	Andorra la Vella	Europe	79824.0	77700.0	71746.0	
...	...	...	...	...	...	...	...	...	...	
229	229	226	WLF	Wallis and Futuna	Mata-Utu	Oceania	11572.0	11655.0	12182.0	
230	230	172	ESH	Western Sahara	El Aaiún	Africa	575986.0	556048.0	491824.0	
231	231	46	YEM	Yemen	Sanaa	Asia	33696614.0	32284046.0	28516545.0	24
232	232	63	ZMB	Zambia	Lusaka	Africa	20017675.0	18927715.0	NaN	13
233	233	74	ZWE	Zimbabwe	Harare	Africa	16320537.0	15669666.0	14154937.0	12

234 rows × 18 columns

In [14]:
```
df.set_index('Country')
```

Out[14]:

Country	index	Rank	CCA3	Capital	Continent	2022 Population	2020 Population	2015 Population	2 Populat
Afghanistan	0	36	AFG	Kabul	Asia	41128771.0	38972230.0	33753499.0	281896
Albania	1	138	ALB	Tirana	Europe	2842321.0	2866849.0	2882481.0	29133
Algeria	2	34	DZA	Algiers	Africa	44903225.0	43451666.0	39543154.0	358563
American Samoa	3	213	ASM	Pago Pago	Oceania	44273.0	46189.0	51368.0	548
Andorra	4	203	AND	Andorra la Vella	Europe	79824.0	77700.0	71746.0	715
...	...	...	...	...	...	...	...	...	
Wallis and Futuna	229	226	WLF	Mata-Utu	Oceania	11572.0	11655.0	12182.0	131
Western Sahara	230	172	ESH	El Aaiún	Africa	575986.0	556048.0	491824.0	4132
Yemen	231	46	YEM	Sanaa	Asia	33696614.0	32284046.0	28516545.0	247439
Zambia	232	63	ZMB	Lusaka	Africa	20017675.0	18927715.0	NaN	137920
Zimbabwe	233	74	ZWE	Harare	Africa	16320537.0	15669666.0	14154937.0	128397

234 rows × 17 columns

In [17]:
```
# multi index
df.set_index(['Continent','Country'], inplace=True)
```

In [18]:
```
df.sort_index()
```

Out[18]:

Continent	Country	index	Rank	CCA3	Capital	2022 Population	2020 Population	2015 Population	Pop
Africa	Algeria	2	34	DZA	Algiers	44903225.0	43451666.0	39543154.0	358
	Angola	5	42	AGO	Luanda	35588987.0	33428485.0	28127721.0	233
	Benin	21	77	BEN	Porto-Novo	13352864.0	12643123.0	10932783.0	94
	Botswana	26	144	BWA	Gaborone	2630296.0	2546402.0	2305171.0	20
	Burkina Faso	31	58	BFA	Ouagadougou	22673762.0	21522626.0	18718019.0	161
...	...	...	...	...	...	...	...	...	
South America	Paraguay	161	109	PRY	Asunción	6780744.0	6618695.0	6177950.0	57
	Peru	162	44	PER	Lima	34049588.0	33304756.0	30711863.0	292
	Suriname	199	170	SUR	Paramaribo	618040.0	607065.0	575475.0	5
	Uruguay	223	133	URY	Montevideo	3422794.0	3429086.0	3402818.0	33
	Venezuela	227	51	VEN	Caracas	28301696.0	28490453.0	30529716.0	287

234 rows × 16 columns

In [19]:
```
df.sort_index(ascending = [True, False]) # sorts Capital in asc and country in dsc
```

Out[19]:

Continent	Country	index	Rank	CCA3	Capital	2022 Population	2020 Population	2015 Population	Popu
Africa	Zimbabwe	233	74	ZWE	Harare	16320537.0	15669666.0	14154937.0	1283
	Zambia	232	63	ZMB	Lusaka	20017675.0	18927715.0	NaN	1379
	Western Sahara	230	172	ESH	El Aaiún	575986.0	556048.0	491824.0	41
	Uganda	217	31	UGA	Kampala	47249585.0	44404611.0	37477356.0	3234
	Tunisia	212	79	TUN	Tunis	12356117.0	12161723.0	11557779.0	1089
...	...	...	...	...	...	...	...	...	
South America	Colombia	42	28	COL	Bogota	51874024.0	50930662.0	47119728.0	
	Chile	40	65	CHL	Santiago	19603733.0	19300315.0	17870124.0	1700
	Brazil	27	7	BRA	Brasilia	215313498.0	213196304.0	205188205.0	19635
	Bolivia	24	80	BOL	Sucre	12224110.0	11936162.0	11090085.0	1022
	Argentina	8	33	ARG	Buenos Aires	45510318.0	45036032.0	43257065.0	4110

234 rows × 16 columns

In [20]:
```
df.loc['Africa']
```

Out[20]:

Country	index	Rank	CCA3	Capital	2022 Population	2020 Population	2015 Population	2010 Population	Pc
Algeria	2	34	DZA	Algiers	44903225.0	43451666.0	39543154.0	35856344.0	30
Angola	5	42	AGO	Luanda	35588987.0	33428485.0	28127721.0	23364185.0	16
Benin	21	77	BEN	Porto-Novo	13352864.0	12643123.0	10932783.0	9445710.0	6
Botswana	26	144	BWA	Gaborone	2630296.0	2546402.0	2305171.0	2091664.0	1
Burkina Faso	31	58	BFA	Ouagadougou	22673762.0	21522626.0	18718019.0	16116845.0	11
...	...	...	...	...	...	...	...	...	
Tunisia	212	79	TUN	Tunis	12356117.0	12161723.0	11557779.0	10895063.0	9
Uganda	217	31	UGA	Kampala	47249585.0	44404611.0	37477356.0	32341728.0	24
Western Sahara	230	172	ESH	El Aaiún	575986.0	556048.0	491824.0	413296.0	
Zambia	232	63	ZMB	Lusaka	20017675.0	18927715.0	NaN	13792086.0	9
Zimbabwe	233	74	ZWE	Harare	16320537.0	15669666.0	14154937.0	12839771.0	11

57 rows × 16 columns

In [21]:
```
df.loc['Africa', 'Algeria']
```

Out[21]:
```
index                              2
Rank                              34
CCA3                             DZA
Capital                      Algiers
2022 Population           44903225.0
2020 Population           43451666.0
2015 Population           39543154.0
2010 Population           35856344.0
2000 Population           30774621.0
1990 Population           25518074.0
1980 Population           18739378.0
1970 Population           13795915.0
Area (km²)                 2381741.0
Density (per km²)            18.8531
Growth Rate                   1.0164
World Population Percentage     0.56
Name: (Africa, Algeria), dtype: object
```

In [22]:
```
df.iloc[1]
```

Out[22]:
```
index                            1
Rank                           138
CCA3                           ALB
Capital                     Tirana
2022 Population          2842321.0
2020 Population          2866849.0
2015 Population          2882481.0
2010 Population          2913399.0
2000 Population          3182021.0
1990 Population          3295066.0
1980 Population          2941651.0
1970 Population          2324731.0
Area (km²)                 28748.0
Density (per km²)          98.8702
Growth Rate                 0.9957
World Population Percentage   0.04
Name: (Europe, Albania), dtype: object
```

In [23]:
```
df.iloc[1,1] # it doesn't work with multi indexes
```

Out[23]:
```
138
```

In [ ]:
```

```