

```
from google.colab import drive
```

```
drive.mount('/content/gdrive')
```

Mounted at /content/gdrive

```
import pandas as pd
df =pd.read_csv('/content/gdrive/MyDrive/school_scores.csv')
```

df

	Year	State.Code	State.Name	Total.Math	Total.Test-takers	Total.Verbal	Subjects.Arts/
0	2005	AL	Alabama	559	3985	567	
1	2005	AK	Alaska	519	3996	523	
2	2005	AZ	Arizona	530	18184	526	
3	2005	AR	Arkansas	552	1600	563	
4	2005	CA	California	522	186552	504	
...	
572	2015	VA	Virginia	517	59621	518	
573	2015	WA	Washington	511	44423	502	
574	2015	WV	West Virginia	500	2501	509	
575	2015	WI	Wisconsin	606	2277	591	
576	2015	WY	Wyoming	587	181	588	

577 rows × 99 columns

```
df.info()
```

```
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 577 entries, 0 to 576
Data columns (total 99 columns):
#   Column                                                                 Non-Null Count  Dtype
---  -
0   Year                                                                577 non-null   int64
1   State.Code                                                         577 non-null   object
2   State.Name                                                         577 non-null   object
3   Total.Math                                                         577 non-null   int64
4   Total.Test-takers                                                 577 non-null   int64
5   Total.Verbal                                                       577 non-null   int64
6   Academic Subjects.Arts/Music.Average GPA                        577 non-null   float64
7   Academic Subjects.Arts/Music.Average Years                     577 non-null   float64
8   Academic Subjects.English.Average GPA                          577 non-null   float64
9   Academic Subjects.English.Average Years                        577 non-null   float64
10  Academic Subjects.Foreign Languages.Average GPA                577 non-null   float64
11  Academic Subjects.Foreign Languages.Average Years              577 non-null   float64
12  Academic Subjects.Mathematics.Average GPA                      577 non-null   float64
13  Academic Subjects.Mathematics.Average Years                   577 non-null   float64
14  Academic Subjects.Natural Sciences.Average GPA                577 non-null   float64
15  Academic Subjects.Natural Sciences.Average Years              577 non-null   float64
16  Academic Subjects.Social Sciences/History.Average GPA         577 non-null   float64
17  Academic Subjects.Social Sciences/History.Average Years       577 non-null   float64
18  Family Income.Between 20-40k.Math                               577 non-null   int64
19  Family Income.Between 20-40k.Test-takers                       577 non-null   int64
20  Family Income.Between 20-40k.Verbal                             577 non-null   int64
21  Family Income.Between 40-60k.Math                               577 non-null   int64
22  Family Income.Between 40-60k.Test-takers                       577 non-null   int64
23  Family Income.Between 40-60k.Verbal                             577 non-null   int64
24  Family Income.Between 60-80k.Math                               577 non-null   int64
25  Family Income.Between 60-80k.Test-takers                       577 non-null   int64
26  Family Income.Between 60-80k.Verbal                             577 non-null   int64
27  Family Income.Between 80-100k.Math                              577 non-null   int64
28  Family Income.Between 80-100k.Test-takers                      577 non-null   int64
29  Family Income.Between 80-100k.Verbal                           577 non-null   int64
30  Family Income.Less than 20k.Math                                577 non-null   int64
```

```
31 Family Income.Less than 20k.Test-takers      577 non-null    int64
32 Family Income.Less than 20k.Verbal            577 non-null    int64
33 Family Income.More than 100k.Math             577 non-null    int64
34 Family Income.More than 100k.Test-takers      577 non-null    int64
35 Family Income.More than 100k.Verbal           577 non-null    int64
36 GPA.A minus.Math                             577 non-null    int64
37 GPA.A minus.Test-takers                      577 non-null    int64
38 GPA.A minus.Verbal                           577 non-null    int64
39 GPA.A plus.Math                              577 non-null    int64
40 GPA.A plus.Test-takers                      577 non-null    int64
41 GPA.A plus.Verbal                           577 non-null    int64
42 GPA.A.Math                                   577 non-null    int64
43 GPA.A.Test-takers                          577 non-null    int64
44 GPA.A.Verbal                               577 non-null    int64
45 GPA.B.Math                                   577 non-null    int64
46 GPA.B.Test-takers                          577 non-null    int64
47 GPA.B.Verbal                               577 non-null    int64
48 GPA.C.Math                                   577 non-null    int64
49 GPA.C.Test-takers                          577 non-null    int64
50 GPA.C.Verbal                               577 non-null    int64
51 GPA.D or lower.Math                         577 non-null    int64
52 GPA.D or lower.Test-takers                  577 non-null    int64
```

```
df.describe(include='all')
```

	Year	State.Code	State.Name	Total.Math	Total.Test-takers	Total.Verbal	Sut
count	577.000000	577	577	577.000000	577.000000	577.000000	
unique	NaN	53	53	NaN	NaN	NaN	
top	NaN	AL	Alabama	NaN	NaN	NaN	
freq	NaN	11	11	NaN	NaN	NaN	
mean	2010.019064	NaN	NaN	535.682842	27914.242634	531.334489	
std	3.169623	NaN	NaN	46.171611	45602.106878	44.318302	
min	2005.000000	NaN	NaN	383.000000	134.000000	401.000000	
25%	2007.000000	NaN	NaN	504.000000	2536.000000	496.000000	
50%	2010.000000	NaN	NaN	527.000000	6468.000000	522.000000	
75%	2013.000000	NaN	NaN	571.000000	35799.000000	572.000000	
max	2015.000000	NaN	NaN	619.000000	241553.000000	612.000000	

11 rows × 99 columns

```
df.isnull()
```

```
print("no null values -\n",df)
```

```
no null values -
  Year State.Code State.Name Total.Math Total.Test-takers \
0   2005      AL   Alabama      559      3985
1   2005      AK    Alaska      519      3996
2   2005      AZ   Arizona      530     18184
3   2005      AR  Arkansas      552      1600
4   2005      CA  California      522     186552
..   ...      ...      ...      ...      ...
572  2015      VA   Virginia      517     59621
573  2015      WA  Washington      511     44423
574  2015      WV West Virginia      500      2501
575  2015      WI  Wisconsin      606      2277
576  2015      WY   Wyoming      587       181
```

```
  Total.Verbal Academic Subjects.Arts/Music.Average GPA \
0           567           3.92
1           523           3.76
2           526           3.85
3           563           3.90
4           504           3.76
..          ...           ...
572          518           3.83
573          502           3.83
574          509           3.92
575          591           3.93
576          588           3.91
```

```
  Academic Subjects.Arts/Music.Average Years \
0                                           2.2
1                                           1.9
2                                           2.1
3                                           2.2
4                                           1.8
..                                          ...
572                                         2.1
573                                         2.2
574                                         2.4
575                                         2.6
576                                         2.5
```

```
  Academic Subjects.English.Average GPA \
0           3.53
1           3.35
2           3.45
3           3.61
4           3.32
..          ...
572          3.47
573          3.50
574          3.71
575          3.77
576          3.84
```

```
  Academic Subjects.English.Average Years ... \
0           3.9 ...
1           3.9 ...
2           3.9 ...
3           4.0 ...
```

