

```
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')

#Task 1--
df
```

	Year	State.Code	State.Name	Total.Math	Total.Test-takers	Total.Verbal	Subjects.Arts/Music.Average GPA	Subjects.Arts/Music.Average Years	Subj
0	2005	AL	Alabama	559	3985	567	3.92	2.2	
1	2005	AK	Alaska	519	3996	523	3.76	1.9	
2	2005	AZ	Arizona	530	18184	526	3.85	2.1	
3	2005	AR	Arkansas	552	1600	563	3.90	2.2	
4	2005	CA	California	522	186552	504	3.76	1.8	
...	
572	2015	VA	Virginia	517	59621	518	3.83	2.1	
573	2015	WA	Washington	511	44423	502	3.83	2.2	
574	2015	WV	West Virginia	500	2501	509	3.92	2.4	
575	2015	WI	Wisconsin	606	2277	591	3.93	2.6	
576	2015	WY	Wyoming	587	181	588	3.91	2.5	

577 rows × 99 columns

```
#Task 2--
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

```
#Task 3--
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

```
#Task 4--
df.isnull()
```

	Year	State.Code	State.Name	Total.Math	Total.Test-takers	Total.Verbal	Subjects.Arts,
0	False	False	False	False	False	False	
1	False	False	False	False	False	False	

#Task 5--

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	...	

