In [34]:
```
import pandas as pd
```

In [35]:
```
student_data=pd.read_csv(r"C:\Users\user\Downloads\files for analysis\StudentsPerformance.csv",header=0)
```

In [36]:
```
student_data
```

Out[36]:

	gender	race/ethnicity	parental level of education	lunch	test preparation course	math score	reading score	writing score
0	female	group B	bachelor's degree	standard	none	72	72	74
1	female	group C	some college	standard	completed	69	90	88
2	female	group B	master's degree	standard	none	90	95	93
3	male	group A	associate's degree	free/reduced	none	47	57	44
4	male	group C	some college	standard	none	76	78	75
...	...	...	...	...	...	...	...	...
995	female	group E	master's degree	standard	completed	88	99	95
996	male	group C	high school	free/reduced	none	62	55	55
997	female	group C	high school	free/reduced	completed	59	71	65
998	female	group D	some college	standard	completed	68	78	77
999	female	group D	some college	free/reduced	none	77	86	86

1000 rows × 8 columns

In [37]:
```
#1.create a percentage column
student_data["percentage"]=(student_data["math score"]+student_data["reading score"]+student_data["writing score
```

In [38]:
```
student_data
```

Out[38]:

	gender	race/ethnicity	parental level of education	lunch	test preparation course	math score	reading score	writing score	percentage
0	female	group B	bachelor's degree	standard	none	72	72	74	72.666667
1	female	group C	some college	standard	completed	69	90	88	82.333333
2	female	group B	master's degree	standard	none	90	95	93	92.666667
3	male	group A	associate's degree	free/reduced	none	47	57	44	49.333333
4	male	group C	some college	standard	none	76	78	75	76.333333
...	...	...	...	...	...	...	...	...	...
995	female	group E	master's degree	standard	completed	88	99	95	94.000000
996	male	group C	high school	free/reduced	none	62	55	55	57.333333
997	female	group C	high school	free/reduced	completed	59	71	65	65.000000
998	female	group D	some college	standard	completed	68	78	77	74.333333
999	female	group D	some college	free/reduced	none	77	86	86	83.000000

1000 rows × 9 columns

In [66]:
```
#2.Takeout all the male>50%
m=student_data.loc[(student_data["percentage"]>50)&(student_data["gender"]=="male")]
print("The percentage of all males greater than 50%: ",len(m))
m
```

```
The percentage of all males greater than 50%:  417
```

Out[66]:

	gender	race/ethnicity	parental level of education	lunch	test preparation course	math score	reading score	writing score	percentage
4	male	group C	some college	standard	none	76	78	75	76.333333
8	male	group D	high school	free/reduced	completed	64	64	67	65.000000
10	male	group C	associate's degree	standard	none	58	54	52	54.666667
13	male	group A	some college	standard	completed	78	72	70	73.333333
16	male	group C	high school	standard	none	88	89	86	87.666667
...	...	...	...	...	...	...	...	...	...
985	male	group A	high school	standard	none	57	51	54	54.000000
987	male	group E	some high school	standard	completed	81	75	76	77.333333
990	male	group E	high school	free/reduced	completed	86	81	75	80.666667
994	male	group A	high school	standard	none	63	63	62	62.666667
996	male	group C	high school	free/reduced	none	62	55	55	57.333333

417 rows × 9 columns

In [65]:
```
#3.Takeout all the male<50%
m=student_data.loc[(student_data["percentage"]<50)&(student_data["gender"]=="male")]
print("The percentage of all males lessthan 50%: ",len(m))
m
```

```
The percentage of all males lessthan 50%:  64
```

Out[65]:

	gender	race/ethnicity	parental level of education	lunch	test preparation course	math score	reading score	writing score	percentage
3	male	group A	associate's degree	free/reduced	none	47	57	44	49.333333
7	male	group B	some college	free/reduced	none	40	43	39	40.666667
11	male	group D	associate's degree	standard	none	40	52	43	45.000000
18	male	group C	master's degree	free/reduced	completed	46	42	46	44.666667
33	male	group D	some college	standard	none	40	42	38	40.000000
...	...	...	...	...	...	...	...	...	...
889	male	group D	high school	free/reduced	none	44	51	48	47.666667
896	male	group B	high school	free/reduced	none	36	29	27	30.666667
910	male	group D	bachelor's degree	free/reduced	none	50	42	48	46.666667
928	male	group E	associate's degree	free/reduced	completed	46	43	44	44.333333
978	male	group D	high school	standard	completed	55	41	48	48.000000

64 rows × 9 columns

In [64]:
```
#4.Takeout all the percentage of female>50%
f=student_data.loc[(student_data["percentage"]>50)&(student_data["gender"]=="female")]
print("The percentage of all females greater than 50%: ",len(f))
f
```

```
The percentage of all females greater than 50%:  474
```

Out[64]:

	gender	race/ethnicity	parental level of education	lunch	test preparation course	math score	reading score	writing score	percentage
0	female	group B	bachelor's degree	standard	none	72	72	74	72.666667
1	female	group C	some college	standard	completed	69	90	88	82.333333
2	female	group B	master's degree	standard	none	90	95	93	92.666667
5	female	group B	associate's degree	standard	none	71	83	78	77.333333
6	female	group B	some college	standard	completed	88	95	92	91.666667
...	...	...	...	...	...	...	...	...	...
993	female	group D	bachelor's degree	free/reduced	none	62	72	74	69.333333
995	female	group E	master's degree	standard	completed	88	99	95	94.000000
997	female	group C	high school	free/reduced	completed	59	71	65	65.000000
998	female	group D	some college	standard	completed	68	78	77	74.333333
999	female	group D	some college	free/reduced	none	77	86	86	83.000000

474 rows × 9 columns

In [67]:
```
#5.akeout all the percentage of female<50%
f=student_data.loc[(student_data["percentage"]>50)&(student_data["gender"]=="female")]
print("The percentage of all females less than 50%: ",len(f))
f
```

```
The percentage of all females less than 50%:  474
```

Out[67]:

	gender	race/ethnicity	parental level of education	lunch	test preparation course	math score	reading score	writing score	percentage
0	female	group B	bachelor's degree	standard	none	72	72	74	72.666667
1	female	group C	some college	standard	completed	69	90	88	82.333333
2	female	group B	master's degree	standard	none	90	95	93	92.666667
5	female	group B	associate's degree	standard	none	71	83	78	77.333333
6	female	group B	some college	standard	completed	88	95	92	91.666667
...	...	...	...	...	...	...	...	...	...
993	female	group D	bachelor's degree	free/reduced	none	62	72	74	69.333333
995	female	group E	master's degree	standard	completed	88	99	95	94.000000
997	female	group C	high school	free/reduced	completed	59	71	65	65.000000
998	female	group D	some college	standard	completed	68	78	77	74.333333
999	female	group D	some college	free/reduced	none	77	86	86	83.000000

474 rows × 9 columns

In [70]:
```
#6.calculate total number of Males
t=student_data.loc[(student_data["gender"]=="male")]
print("Total number of males: ",len(t))
t
```

```
Total number of males: 482
```

Out[70]:

	gender	race/ethnicity	parental level of education	lunch	test preparation course	math score	reading score	writing score	percentage
3	male	group A	associate's degree	free/reduced	none	47	57	44	49.333333
4	male	group C	some college	standard	none	76	78	75	76.333333
7	male	group B	some college	free/reduced	none	40	43	39	40.666667
8	male	group D	high school	free/reduced	completed	64	64	67	65.000000
10	male	group C	associate's degree	standard	none	58	54	52	54.666667
...	...	...	...	...	...	...	...	...	...
985	male	group A	high school	standard	none	57	51	54	54.000000
987	male	group E	some high school	standard	completed	81	75	76	77.333333
990	male	group E	high school	free/reduced	completed	86	81	75	80.666667
994	male	group A	high school	standard	none	63	63	62	62.666667
996	male	group C	high school	free/reduced	none	62	55	55	57.333333

482 rows × 9 columns

In [73]:
```
#7.calculate total number of Females
t=student_data.loc[(student_data["gender"]=="female")]
print("Total number of males:",len(t))
t
```

```
Total number of males: 518
```

Out[73]:

	gender	race/ethnicity	parental level of education	lunch	test preparation course	math score	reading score	writing score	percentage
0	female	group B	bachelor's degree	standard	none	72	72	74	72.666667
1	female	group C	some college	standard	completed	69	90	88	82.333333
2	female	group B	master's degree	standard	none	90	95	93	92.666667
5	female	group B	associate's degree	standard	none	71	83	78	77.333333
6	female	group B	some college	standard	completed	88	95	92	91.666667
...	...	...	...	...	...	...	...	...	...
993	female	group D	bachelor's degree	free/reduced	none	62	72	74	69.333333
995	female	group E	master's degree	standard	completed	88	99	95	94.000000
997	female	group C	high school	free/reduced	completed	59	71	65	65.000000
998	female	group D	some college	standard	completed	68	78	77	74.333333
999	female	group D	some college	free/reduced	none	77	86	86	83.000000

518 rows × 9 columns

In [78]:
```
#8.Total number of students in parental level of education selected bachelors degree
education=student_data.loc[(student_data["parental level of education"]=="bachelor's degree")]
print("The students how selected bachelors degree in parental level of education :",len(education))
education
```

```
The students how selected bachelors degree in parental level of education : 118
```

Out[78]:

	gender	race/ethnicity	parental level of education	lunch	test preparation course	math score	reading score	writing score	percentage
0	female	group B	bachelor's degree	standard	none	72	72	74	72.666667
24	male	group D	bachelor's degree	free/reduced	completed	74	71	80	75.000000
27	female	group C	bachelor's degree	standard	none	67	69	75	70.333333
60	male	group E	bachelor's degree	free/reduced	completed	79	74	72	75.000000
77	male	group A	bachelor's degree	standard	completed	80	78	81	79.666667
...	...	...	...	...	...	...	...	...	...
916	male	group E	bachelor's degree	standard	completed	100	100	100	100.000000
933	male	group C	bachelor's degree	free/reduced	completed	70	75	74	73.000000
969	female	group B	bachelor's degree	standard	none	75	84	80	79.666667
970	female	group D	bachelor's degree	standard	none	89	100	100	96.333333
993	female	group D	bachelor's degree	free/reduced	none	62	72	74	69.333333

118 rows × 9 columns

In [84]:
```
#9.The total number of  males and females how selectioned lunch  as standard
lunch=student_data.loc[(student_data["lunch"]=="standard"),["gender"]]
print("Total number of males and females choose lunch as standard",len(lunch))
lunch
```

```
Total number of males and females choose lunch as standard 645
```

Out[84]:

	gender
0	female
1	female
2	female
4	male
5	female
...	...
987	male
991	female
994	male
995	female
998	female

645 rows × 1 columns

In [89]:
```
lunch=student_data.loc[(student_data["lunch"]=="standard")&(student_data["gender"]=="male")]
print("Total number of males choose lunch as standard",len(lunch))
lunch
```

```
Total number of males choose lunch as standard 316
```

Out[89]:

	gender	race/ethnicity	parental level of education	lunch	test preparation course	math score	reading score	writing score	percentage
4	male	group C	some college	standard	none	76	78	75	76.333333
10	male	group C	associate's degree	standard	none	58	54	52	54.666667
11	male	group D	associate's degree	standard	none	40	52	43	45.000000
13	male	group A	some college	standard	completed	78	72	70	73.333333
16	male	group C	high school	standard	none	88	89	86	87.666667
...	...	...	...	...	...	...	...	...	...
981	male	group D	some high school	standard	none	81	78	78	79.000000
982	male	group B	some high school	standard	completed	79	85	86	83.333333
985	male	group A	high school	standard	none	57	51	54	54.000000
987	male	group E	some high school	standard	completed	81	75	76	77.333333
994	male	group A	high school	standard	none	63	63	62	62.666667

316 rows × 9 columns

In [90]:
```
lunch=student_data.loc[(student_data["lunch"]=="standard")&(student_data["gender"]=="female")]
print("Total number of females choose lunch as standard",len(lunch))
lunch
```

```
Total number of females choose lunch as standard 329
```

Out[90]:

	gender	race/ethnicity	parental level of education	lunch	test preparation course	math score	reading score	writing score	percentage
0	female	group B	bachelor's degree	standard	none	72	72	74	72.666667
1	female	group C	some college	standard	completed	69	90	88	82.333333
2	female	group B	master's degree	standard	none	90	95	93	92.666667
5	female	group B	associate's degree	standard	none	71	83	78	77.333333
6	female	group B	some college	standard	completed	88	95	92	91.666667
...	...	...	...	...	...	...	...	...	...
984	female	group C	some high school	standard	none	74	75	82	77.000000
986	female	group C	associate's degree	standard	none	40	59	51	50.000000
991	female	group B	some high school	standard	completed	65	82	78	75.000000
995	female	group E	master's degree	standard	completed	88	99	95	94.000000
998	female	group D	some college	standard	completed	68	78	77	74.333333

329 rows × 9 columns

In [86]:
```
#10.The total number of  males and females how choose  lunch  as free/reduced
lunch=student_data.loc[(student_data["lunch"]=="free/reduced"),["gender"]]
print("Total number of males and females choose lunch as free/reduced:",len(lunch))
lunch
```

```
Total number of males and females choose lunch as free/reduced: 355
```

Out[86]:

	gender
3	male
7	male
8	male
9	female
17	female
...	...
992	female
993	female
996	male
997	female
999	female

355 rows × 1 columns

In [87]:
```
lunch=student_data.loc[(student_data["lunch"]=="free/reduced")&(student_data["gender"]=="male")]
print("Total number of males choose lunch as free/reduced:",len(lunch))
lunch
```

```
Total number of males choose lunch as free/reduced: 166
```

Out[87]:

	gender	race/ethnicity	parental level of education	lunch	test preparation course	math score	reading score	writing score	percentage
3	male	group A	associate's degree	free/reduced	none	47	57	44	49.333333
7	male	group B	some college	free/reduced	none	40	43	39	40.666667
8	male	group D	high school	free/reduced	completed	64	64	67	65.000000
18	male	group C	master's degree	free/reduced	completed	46	42	46	44.666667
24	male	group D	bachelor's degree	free/reduced	completed	74	71	80	75.000000
...	...	...	...	...	...	...	...	...	...
943	male	group A	some high school	free/reduced	completed	61	62	61	61.333333
948	male	group B	some high school	free/reduced	completed	49	50	52	50.333333
976	male	group B	some college	free/reduced	completed	60	62	60	60.666667
990	male	group E	high school	free/reduced	completed	86	81	75	80.666667
996	male	group C	high school	free/reduced	none	62	55	55	57.333333

166 rows × 9 columns

In [88]:
```
lunch=student_data.loc[(student_data["lunch"]=="free/reduced")&(student_data["gender"]=="female")]
print("Total number of females choose lunch as free/reduced:",len(lunch))
lunch
```

```
Total number of females choose lunch as free/reduced: 189
```

Out[88]:

	gender	race/ethnicity	parental level of education	lunch	test preparation course	math score	reading score	writing score	percentage
9	female	group B	high school	free/reduced	none	38	60	50	49.333333
17	female	group B	some high school	free/reduced	none	18	32	28	26.000000
19	female	group C	associate's degree	free/reduced	none	54	58	61	57.666667
21	female	group B	some college	free/reduced	completed	65	75	70	70.000000
32	female	group E	master's degree	free/reduced	none	56	72	65	64.333333
...	...	...	...	...	...	...	...	...	...
989	female	group D	some college	free/reduced	completed	67	86	83	78.666667
992	female	group D	associate's degree	free/reduced	none	55	76	76	69.000000
993	female	group D	bachelor's degree	free/reduced	none	62	72	74	69.333333
997	female	group C	high school	free/reduced	completed	59	71	65	65.000000
999	female	group D	some college	free/reduced	none	77	86	86	83.000000

189 rows × 9 columns