In [15]:
```
student = pd.read_csv("C:\StudentsPerformance.csv")
```

In [16]:
```
student
```

Out[16]:

	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 [33]:
```
student.info
```

Out[33]:
```
<bound method DataFrame.info of       gender race/ethnicity parental level of education         lunch  \
0     female        group B   bachelor's degree      standard
1     female        group C        some college      standard
2     female        group B    master's degree      standard
3       male        group A  associate's degree  free/reduced
4       male        group C        some college      standard
..       ...            ...                   ...           ...
995   female        group E    master's degree      standard
996     male        group C        high school  free/reduced
997   female        group C        high school  free/reduced
998   female        group D        some college      standard
999   female        group D        some college  free/reduced

    test preparation course  math score  reading score  writing score
0                      none          72             72             74
1                 completed          69             90             88
2                      none          90             95             93
3                      none          47             57             44
4                      none          76             78             75
..                      ...         ...            ...            ...
995               completed          88             99             95
996                    none          62             55             55
997               completed          59             71             65
998               completed          68             78             77
999                    none          77             86             86

[1000 rows x 8 columns]>
```

In [18]:
```
student.info()
```

```
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 1000 entries, 0 to 999
Data columns (total 8 columns):
 #   Column                       Non-Null Count  Dtype
---  ------                       --------------  -----
 0   gender                       1000 non-null   object
 1   race/ethnicity               1000 non-null   object
 2   parental level of education  1000 non-null   object
 3   lunch                        1000 non-null   object
 4   test preparation course      1000 non-null   object
 5   math score                   1000 non-null   int64
 6   reading score                1000 non-null   int64
 7   writing score                1000 non-null   int64
dtypes: int64(3), object(5)
memory usage: 62.6+ KB
```

In [21]:
```
student.shape
```

Out[21]:
```
(1000, 8)
```

In [22]:
```
# Assignment create a column to create percentage based on Math, reading and writing score
```

In [25]:
```
student["percentage"]= (student["math score"]+student["reading score"]+student["writing score"])/3
```

In [27]:
```
student
```

Out[27]:

	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 [12]:
```
# based on percentage column take out male scored more than 50%
```

In [29]:
```
student.loc[(student["gender"]=="male") & (student["percentage"]>50.0)]
```

Out[29]:

	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	free/reduced	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 [3]:
```
# based on percentage column take out male scored less than 50%
```

In [34]:
```
student.loc[(student['percentage']<50.0) & (student['gender']=='male')]
```

Out[34]:

	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 [4]:
```
# female students above 50%
```

In [32]:
```
student.loc[(student['percentage']>50.0) & (student['gender']=='female')]
```

Out[32]:

	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 [ ]:
```
#female students below 50%
```

In [35]:
```
student.loc[(student['percentage']<50.0) & (student['gender']=='female')]
```

Out[35]:

	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
55	female	group C	high school	free/reduced	none	33	41	43	39.000000
59	female	group C	some high school	free/reduced	none	0	17	10	9.000000
72	female	group A	associate's degree	free/reduced	none	41	51	48	46.666667
80	female	group B	associate's degree	standard	none	47	49	50	48.666667
145	female	group C	some college	free/reduced	none	22	39	33	31.333333
174	female	group C	bachelor's degree	free/reduced	completed	43	51	54	49.333333
182	female	group E	high school	standard	none	50	50	47	49.000000
217	female	group C	some high school	free/reduced	none	34	42	39	38.333333
262	female	group B	some high school	free/reduced	none	44	50	51	48.333333
284	female	group B	some high school	standard	none	37	46	46	43.000000
323	female	group C	some high school	free/reduced	none	43	53	53	49.666667
324	female	group C	high school	free/reduced	none	41	46	43	43.333333
329	female	group B	some high school	standard	none	41	55	51	49.000000
338	female	group B	some high school	free/reduced	none	24	38	27	29.666667
363	female	group D	some high school	free/reduced	none	27	34	32	31.000000
383	female	group E	some high school	free/reduced	none	38	49	45	44.000000
384	female	group A	some high school	free/reduced	none	38	43	43	41.333333
466	female	group D	associate's degree	free/reduced	none	26	31	38	31.666667
527	female	group C	high school	free/reduced	none	36	53	43	44.000000
528	female	group D	bachelor's degree	free/reduced	none	29	41	47	39.000000
552	female	group B	associate's degree	standard	none	40	48	50	46.000000
555	female	group C	some college	free/reduced	none	32	39	33	34.666667
601	female	group C	high school	standard	none	29	29	30	29.333333
616	female	group E	bachelor's degree	standard	none	37	45	38	40.000000
683	female	group C	some high school	free/reduced	completed	29	40	44	37.666667
777	female	group C	some college	free/reduced	none	35	44	43	40.666667
785	female	group B	some high school	standard	completed	32	51	44	42.333333
787	female	group B	some college	standard	none	19	38	28	28.666667
794	female	group B	high school	standard	none	42	52	51	48.333333
807	female	group E	high school	free/reduced	none	41	45	40	42.000000
840	female	group D	high school	free/reduced	none	39	52	46	45.666667
842	female	group B	high school	free/reduced	completed	23	44	36	34.333333
895	female	group E	some high school	free/reduced	none	32	34	38	34.666667
902	female	group A	high school	free/reduced	completed	34	48	41	41.000000
921	female	group C	high school	free/reduced	none	35	53	46	44.666667
980	female	group B	high school	free/reduced	none	8	24	23	18.333333
988	female	group A	some high school	free/reduced	none	44	45	45	44.666667

In [5]:
```
# how many female candidates are there
```

In [37]:
```
student.loc[student['gender'] == 'female'].count()
```

Out[37]:
```
gender                         518
race/ethnicity                 518
parental level of education    518
lunch                          518
test preparation course        518
math score                     518
reading score                  518
writing score                  518
percentage                     518
dtype: int64
```

In [6]:
```
# how many male candidates are there
```

In [38]:
```
student.loc[student['gender'] == 'male'].count()
```

Out[38]:
```
gender                         482
race/ethnicity                 482
parental level of education    482
lunch                          482
test preparation course        482
math score                     482
reading score                  482
writing score                  482
percentage                     482
dtype: int64
```

In [7]:
```
# from this data find out how many students parent level educations are batchelors degree
```

In [40]:
```
student.loc[student['parental level of education'] == 'bachelor's degree'].count()
```

Out[40]:
```
gender                         118
race/ethnicity                 118
parental level of education    118
lunch                          118
test preparation course        118
math score                     118
reading score                  118
writing score                  118
percentage                     118
dtype: int64
```

In [8]:
```
# how many students in standard lunch
```

In [41]:
```
student.loc[student['lunch'] == 'standard'].count()
```

Out[41]:
```
gender                         645
race/ethnicity                 645
parental level of education    645
lunch                          645
test preparation course        645
math score                     645
reading score                  645
writing score                  645
percentage                     645
dtype: int64
```

In [9]:
```
# how many students in free lunch
```

In [42]:
```
student.loc[student['lunch'] == 'free/reduced'].count()
```

Out[42]:
```
gender                         355
race/ethnicity                 355
parental level of education    355
lunch                          355
test preparation course        355
math score                     355
reading score                  355
writing score                  355
percentage                     355
dtype: int64
```

In [47]:
```
# how many males are there in standard lunch
student.loc[(student["gender"]=="male") & (student["lunch"]=="standard")].count()
```

Out[47]:
```
gender                         316
race/ethnicity                 316
parental level of education    316
lunch                          316
test preparation course        316
math score                     316
reading score                  316
writing score                  316
percentage                     316
dtype: int64
```

In [48]:
```
# how many females are there in standard lunch
student.loc[(student["gender"]=="female") & (student["lunch"]=="standard")].count()
```

Out[48]:
```
gender                         329
race/ethnicity                 329
parental level of education    329
lunch                          329
test preparation course        329
math score                     329
reading score                  329
writing score                  329
percentage                     329
dtype: int64
```

In [49]:
```
# how many females are there in free/reduced lunch
student.loc[(student["gender"]=="female") & (student["lunch"]=="free/reduced")].count()
```

Out[49]:
```
gender                         189
race/ethnicity                 189
parental level of education    189
lunch                          189
test preparation course        189
math score                     189
reading score                  189
writing score                  189
percentage                     189
dtype: int64
```

In [50]:
```
# how many males are there in free/reduced lunch
student.loc[(student["gender"]=="male") & (student["lunch"]=="free/reduced")].count()
```

Out[50]:
```
gender                         166
race/ethnicity                 166
parental level of education    166
lunch                          166
test preparation course        166
math score                     166
reading score                  166
writing score                  166
percentage                     166
dtype: int64
```

In [ ]:
```

```