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BRANCH : CSE
YEAR : III

```
#Now the dataset is to analyze the perfarmance of the student on factor
s like the course completion and parents education.
#Source-->https://www.kaggle.com/datasets/whenamancodes/students-
performance-in-exams

#Import the pandas library
import pandas as pd
df=pd.read_csv("/content/archive (6).zip")
df
```

	gender	race/ethnicity	parental level of education	lunch	test preparation course	math score	reading score	writing score
0	male	group A	high school	standard	completed	67	67	63
1	female	group D	some high school	free/reduced	none	40	59	55
2	male	group E	some college	free/reduced	none	59	60	50
3	male	group B	high school	standard	none	77	78	68
4	male	group E	associate's degree	standard	completed	78	73	68
...	...	...	...	...	...	...	...	...
995	male	group C	high school	standard	none	73	70	65
996	male	group D	associate's degree	free/reduced	completed	85	91	92
997	female	group C	some high school	free/reduced	none	32	35	41
998	female	group C	some college	standard	none	73	74	82

999	male	group A	some college	standard	completed	65	60	62

1000 rows × 8 columns

```
#To find the total number of cells
df.size
```

```
8000
```

```
#To find the number of rows and columns
df.shape
```

```
(1000, 8)
```

```
# Total information in brief
df.info()
```

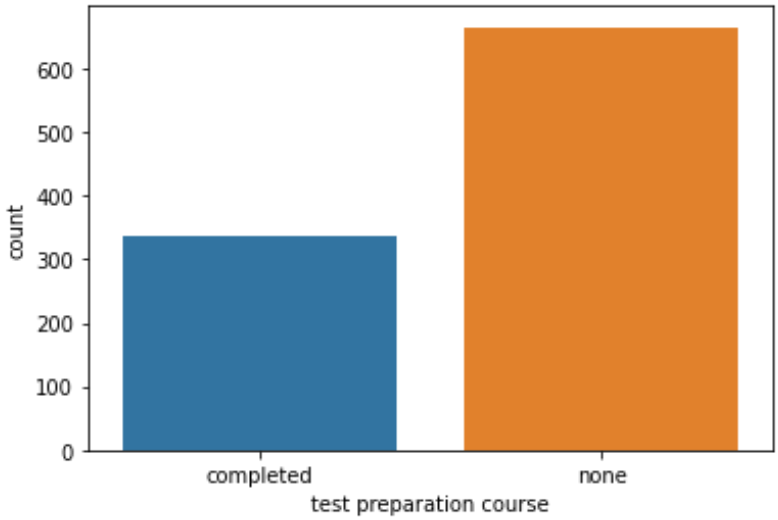
```
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 1000 entries, 0 to 999
Data columns (total 8 columns):
 #   Column                       Non-Null Count  Dtype 
---  ------                       --------------  ----- 
 0   gender                       1000 non-null   object
 1   race/ethnicity               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
```

```
#To know number of students completed their courses
df['test preparation course'].value_counts()
```

none 665
completed 335
Name: test preparation course,
dtype: int64
CodeText

```
#Import seaborn library
import seaborn as sns
sns.countplot(x='test preparation course',data=df)
```

```
<matplotlib.axes._subplots.AxesSubplot at 0x7fbc87b360d0>
```




```
#Among 1000 students 335 are completed their course
#And 665 students are not completed their course
#To know number of male and female students
df['gender'].value_counts()
```

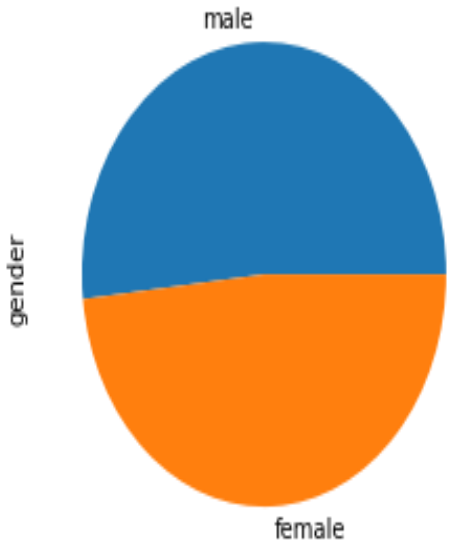
```
male 517

female 483

Name: gender, dtype: int64
```

```
df['gender'].value_counts().plot(kind="pie")
```

```
<matplotlib.axes._subplots.AxesSubplot at 0x7fbc94daf590>
```




```
#To know number of male and female students completed their course
df.groupby(['gender','test preparation course']).size()
```

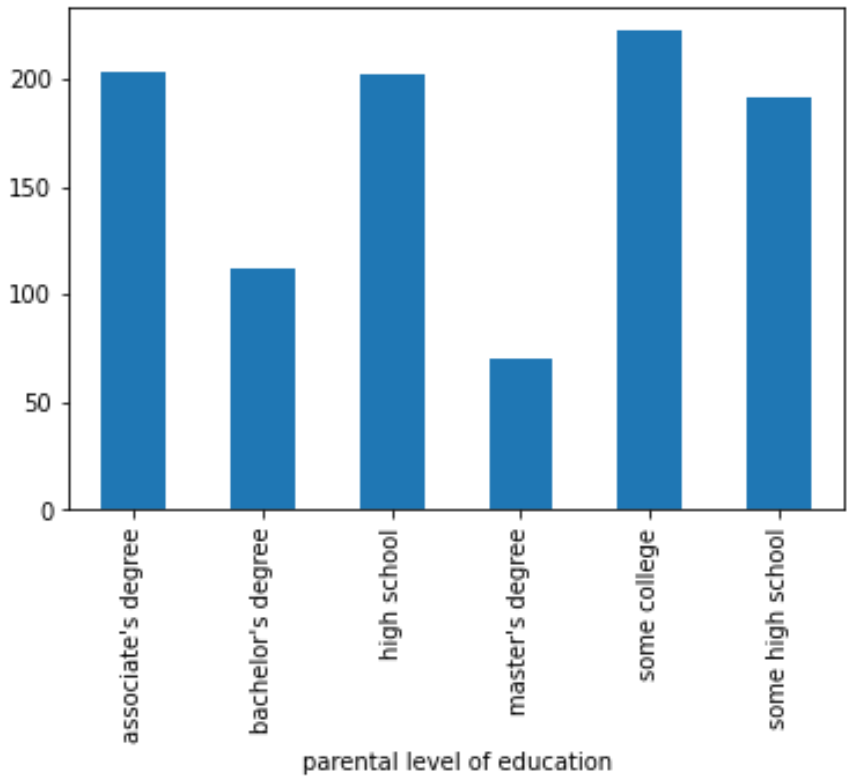
```
gender test preparation course
```

```
 female completed 160
        none 323
 male completed 175
       none 342
dtype: int64
```

```
#To know the childrens parents education level
df.groupby('parental level of education').size()
```

```
parental level of education
associate's degree 203
bachelor's degree 112
high school 202
master's degree 70
some college 222
some high school 191
dtype: int64
```

```
# Barplot is plotted
df.groupby('parental level of education').size().plot(kind='bar')
<matplotlib.axes._subplots.AxesSubplot at 0x7f92db323bd0>
```




```
#From these we can analyse that many of the parents are well educated
#Here our main goal is to determine preparation of course and marks are
 dependent or not
#To get only the course completion and scores of the student from the d
ataframe
```

```
df1=df.iloc[:,4:8]
df1
```

	test preparation course	math score	reading score	writing score
0	completed	67	67	63
1	none	40	59	55
2	none	59	60	50
3	none	77	78	68
4	completed	78	73	68
...	...	...	...	...
995	none	73	70	65
996	completed	85	91	92
997	none	32	35	41
998	none	73	74	82
999	completed	65	60	62

1000 rows × 4 columns

```
#To obtain the average marks of the students and their course completio
n status
df1=pd.concat([df1['test preparation course'],mean],axis=1)
df1
```

	test preparation course	0
0	completed	65.666667
1	none	51.333333
2	none	56.333333
3	none	74.333333
4	completed	73.000000
...	...	...
995	none	69.333333
996	completed	89.333333
997	none	36.000000
998	none	76.333333
999	completed	62.333333

1000 rows × 2 columns

```
#To get the maximum marks of average
df1.max(mean)
```

```
100.0
```

```
#To know the maximum markes got by a student whether he completed test
#preparation course or not
pd.concat([df1['test preparation course'],mean],axis=1).max()
```

```
test preparation course none
   0                        100.0
   dtype: object
```

```
#Hence we can say that preparation not only plays a role in maximum sco
ring
#Minumam average marks students
```

```
pd.concat([df1['test preparation course'],mean],axis=1).min()
```

```
test preparation course   completed
 0                        21.666667
 dtype: object
```

```
#Even a student after completed a course, he can't able to get the good
 marks
#Checking whether the parents education qualification impacts on the st
udent
pd.concat([df['parental level of education'],mean],axis=1).min()
```

```
parental level of education    associate's degree
   0                              21.666667
dtype: object
```

```
#And also we can see that parents educational qualification also doesn'
t shows
# an much impact on students education

#Knowing the maximum scored parents educational qualification
pd.concat([df['parental level of education'],mean],axis=1).max()
```

```
parental level of education     some high school
   0                               100.0
dtype: object
```

```
#Finally we can conclude that there is not that much of impact of stude
nts score
#on parents education and the course completion
```