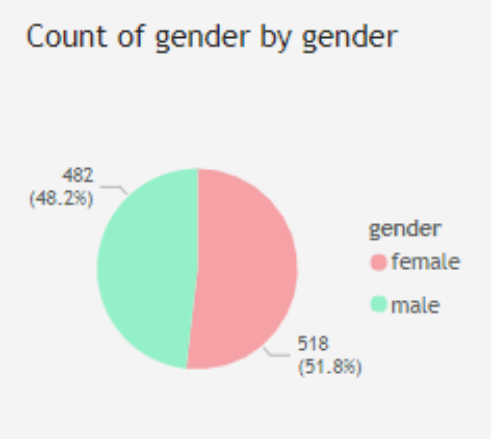
Students Performance

The dataset is about the Students Performance, contain 8 columns
(String 5, Integer 3).
columns:

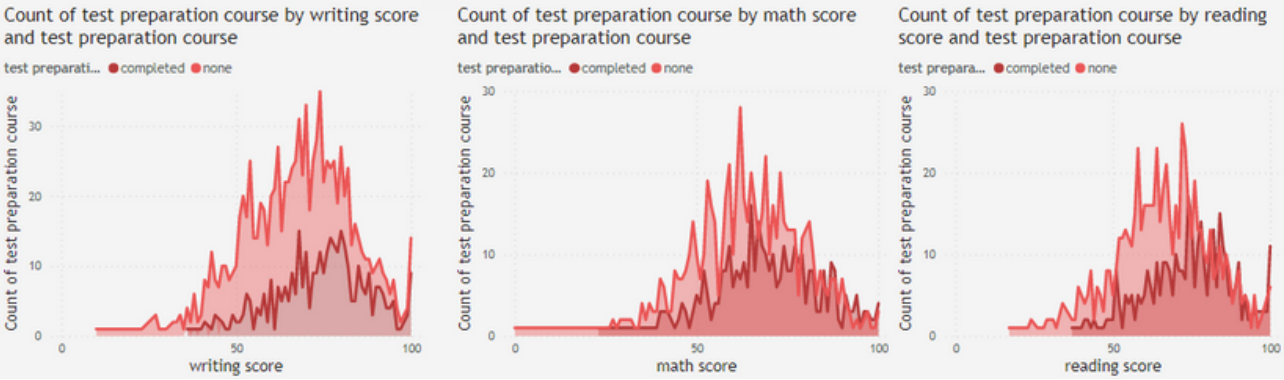
gender	**student gender, female, male**
race/ethnicity	group A, group B, group C, group D, group E
parental level of education	some college, associate's degree, high school, some high school, bachelor's degree
lunch	(standard, free/reduced)
test preparation course	(none, completed)
math score	score of math test from 100
reading score	score of reading test from 100
writing score	score of writing test from 100

Derive three business insights from your filtered dataset.

First of all, here we see the count of number of Female= 51.8% and Male=48.2%

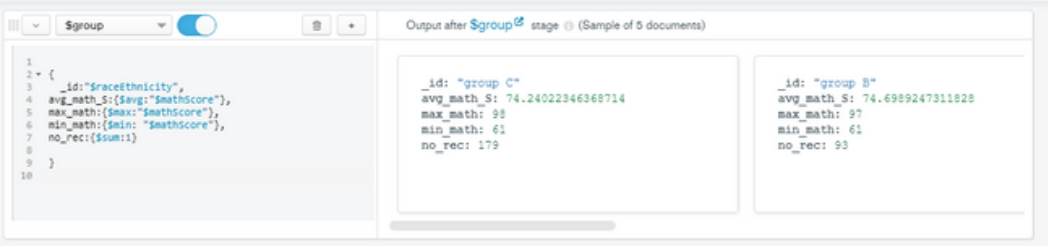


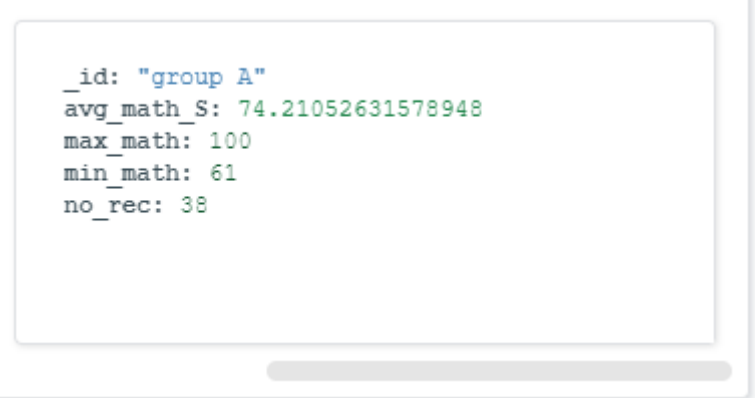
and we want to know the student in 3 tests in(math,reading, and writing) by looking into the test preparation course and the score of the test, there is two cases in the test preparation (none, completed)
and in all 3 test the student not done the test preparation, the less in math ...

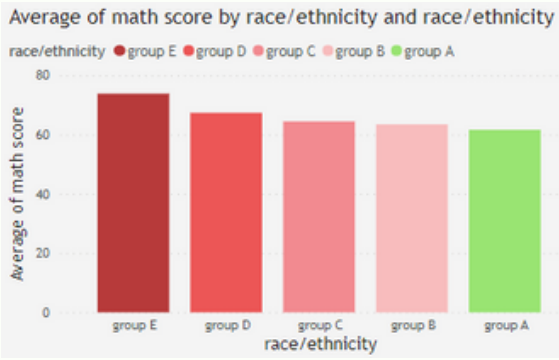


calculate the avarage score and min, max in each group,
as can you see there is 5 groups.

The group E has the large avg score in all test , the students in this group done well in there axam .

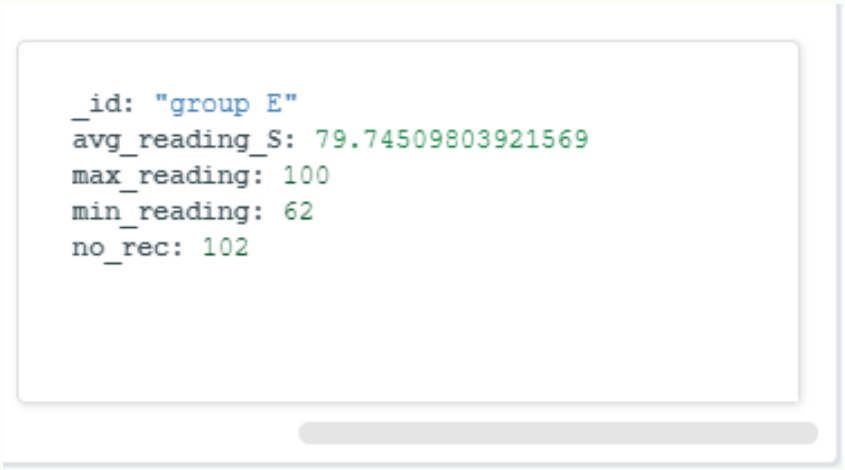






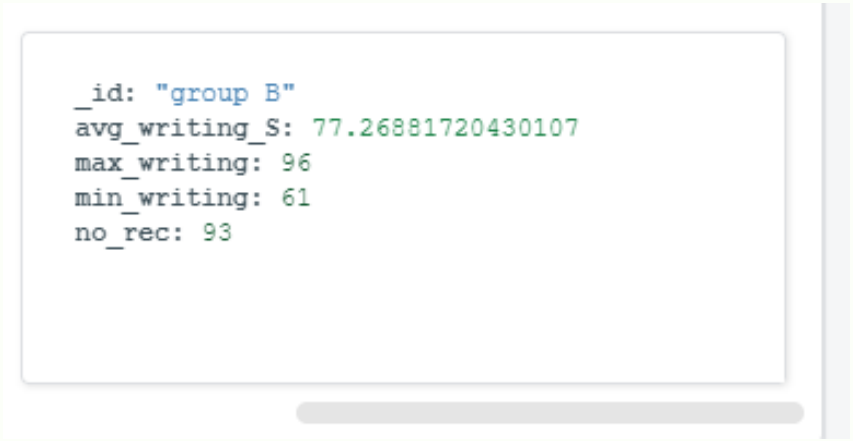

$group
{
_id:"$raceEthnicity",
avg_reading_S:{$avg:"$readingScore"},
max_reading:{$max:"$readingScore"},
min_reading:{$min: "$readingScore"},
no_rec:{$sum:1}
}
Output after $group stage (Sample of 5 documents)
_id: "group C"
avg_reading_S: 78.24581005586592
max_reading: 100
min_reading: 61
no_rec: 179
_id: "group B"
avg_reading_S: 79.10752688172043
max_reading: 97
min_reading: 62
no_rec: 93


Output after $group stage (Sample of 5 documents)
_id: "group D"
avg_reading_S: 77.62275449101796
max_reading: 100
min_reading: 61
no_rec: 167
_id: "group A"
avg_reading_S: 77.65789473684211
max_reading: 100
min_reading: 61
no_rec: 38


_id: "group E"
avg_reading_S: 79.74509803921569
max_reading: 100
min_reading: 62
no_rec: 102


$group
{
_id:"$raceEthnicity",
avg_writing_S:{$avg:"$writingScore"},
max_writing:{$max:"$writingScore"},
min_writing:{$min: "$writingScore"},
no_rec:{$sum:1}
}
Output after $group stage (Sample of 5 documents)
_id: "group D"
avg_writing_S: 77.9880239520958
max_writing: 100
min_writing: 61
no_rec: 167
_id: "group A"
avg_writing_S: 75.39473684210526
max_writing: 97
min_writing: 61
no_rec: 38


Output after $group stage (Sample of 5 documents)
_id: "group E"
avg_writing_S: 78.12745098039215
max_writing: 100
min_writing: 61
no_rec: 102
_id: "group C"
avg_writing_S: 77.49162011173185
max_writing: 100
min_writing: 61
no_rec: 179

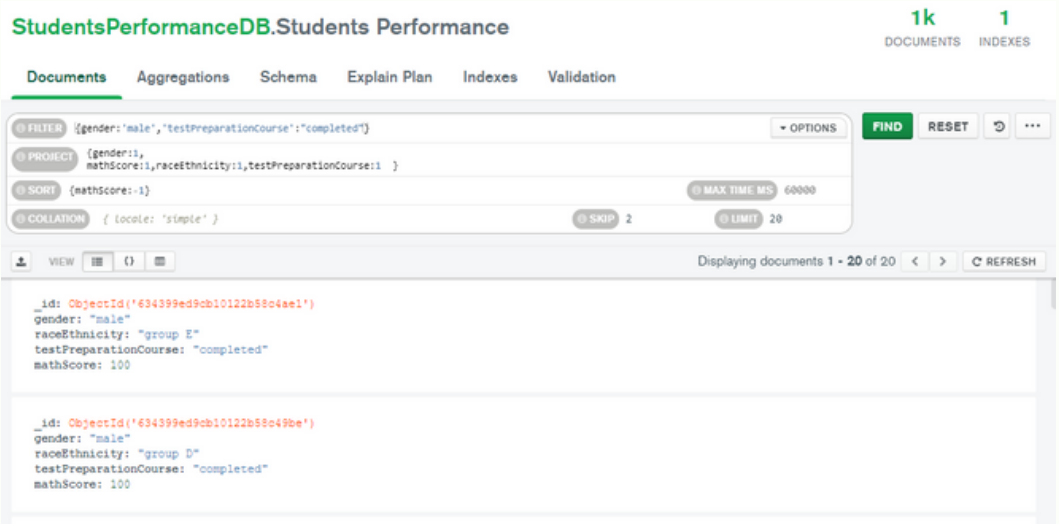

_id: "group B"
avg_writing_S: 77.26881720430107
max_writing: 96
min_writing: 61
no_rec: 93

Export your pipeline.

```
[
    {
        '$project': {
            '_id': 0,
            'gender': 1,
            'raceEthnicity': 1,
            'parentalLevelOfEducation': 1,
            'lunch': 1,
            'testPreparationCourse': 1,
            'mathScore': 1,
            'readingScore': 1,
            'writingScore': 1
        }
    }, {
        '$match': {
            'mathScore': {
                '$gt': 60
            },
            'readingScore': {
                '$gt': 60
            },
            'writingScore': {
                '$gt': 60
            }
        }
    }, {
        '$group': {
            '_id': '$raceEthnicity',
            'avg_math_S': {
                '$avg': '$mathScore'
            },
            'max_math': {
                '$max': '$mathScore'
            },
            'min_math': {
                '$min': '$mathScore'
            },
            'no_rec': {
                '$sum': 1
            }
        }
    },
    {
        '$sort': {
            'max_math': 1
        }
    }, {
        '$project': {
            'avg_math_S': {
                '$trunc': [
                    '$avg_math_S'
                ]
            },
            'no_rec': 1,
            'math_score_range': {
                '$subtract': [
                    '$max_math', '$min_math'
                ]
            }
        }
    }
]
```

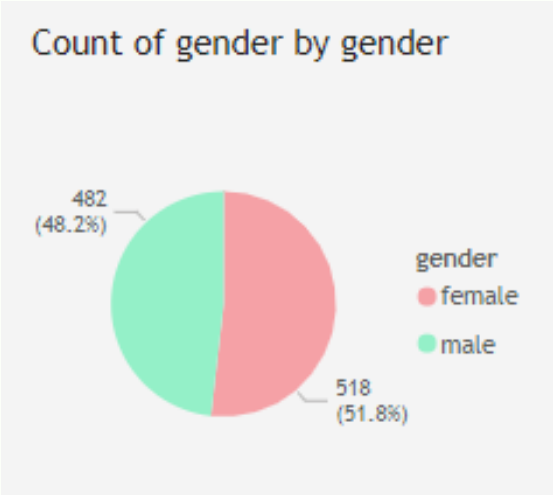
Export your filtered dataset as a CSV file.

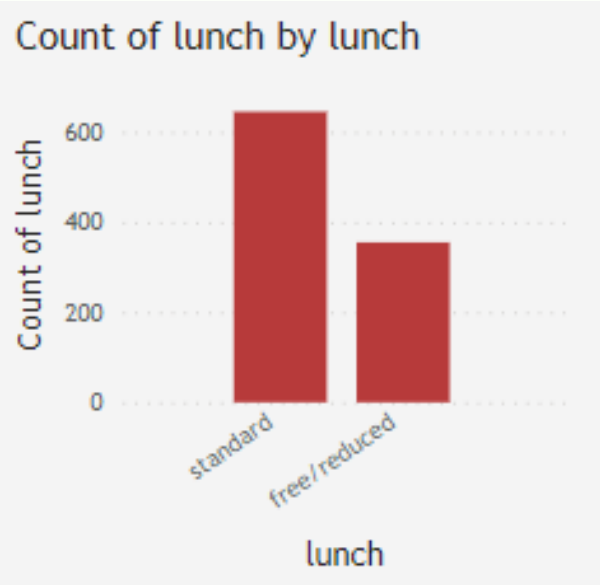
```
db.Students Performance.find(
  {gender: 'male',testPreparationCourse: 'completed'}
).limit(20).skip(2)
```

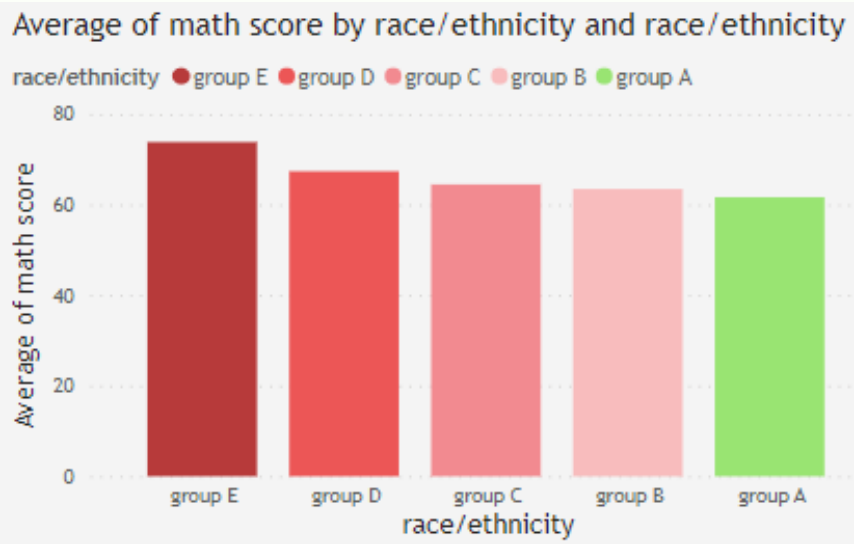


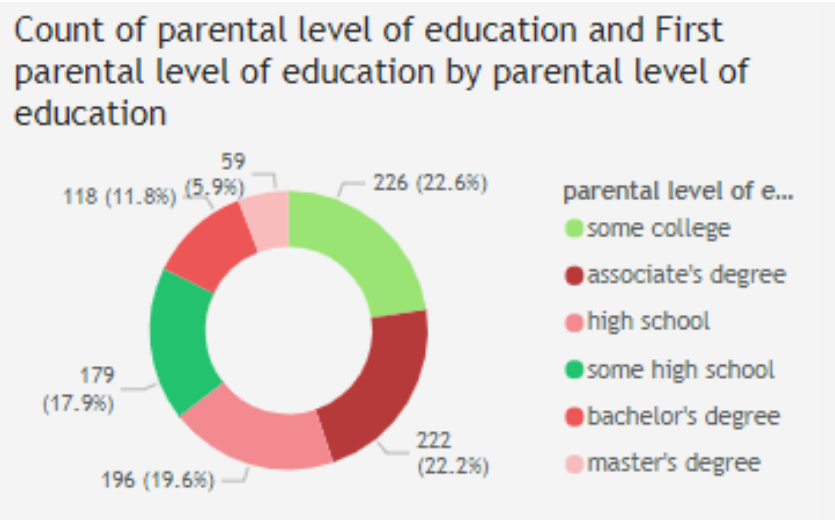
	A	B	C	D	E
1	gender	mathScore	raceEthnicity	testPreparationCourse	
2	male	46	group C	completed	
3	male	74	group D	completed	
4	male	81	group E	completed	
5	male	59	group B	completed	
6	male	82	group C	completed	
7	male	77	group E	completed	
8	male	58	group D	completed	
9	male	79	group E	completed	
10	male	63	group D	completed	
11	male	80	group A	completed	
12	male	50	group A	completed	
13	male	43	group C	completed	
14	male	78	group C	completed	
15	male	65	group B	completed	
16	male	68	group D	completed	
17	male	60	group B	completed	
18	male	98	group C	completed	
19	male	66	group E	completed	
20	male	91	group B	completed	
21	male	65	group D	completed	
22					

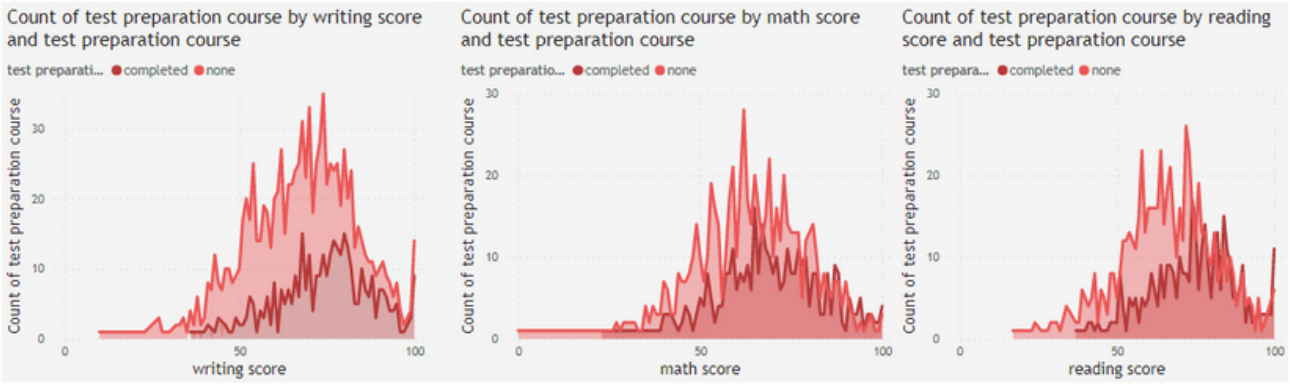
Visualize your results in excel if your insights are numerical.








Count of parental level of education and First parental level of education by parental level of education
59 (5.9%)
226 (22.6%)
118 (11.8%)
179 (17.9%)
222 (22.2%)
196 (19.6%)
parental level of e...
some college
associate's degree
high school
some high school
bachelor's degree
master's degree


Count of test preparation course by writing score and test preparation course
test preparati... completed none
Count of test preparation course
writing score
Count of test preparation course by math score and test preparation course
test preparatio... completed none
Count of test preparation course
math score
Count of test preparation course by reading score and test preparation course
test prepara... completed none
Count of test preparation course
reading score