

Description of the project

In this work student performance is going to be predicted by information of their ethnicity, parental level of education, lunch and preparation before the test. Thousand results are given.

Hypothesis

This work believes:

1. parental education would affect performance of children, and examinees with parents with master's degree would have better results
2. people who had had their lunches eaten and preparation done before test would perform better
3. males would be better in math, and reading results would be somewhat equal for both women and men, also, results of writing would be higher for women
4. overall, reading would be the best result for all participants, and math is the worst

General transcribing

In this block it is checked what mean, median, standard deviation, maximum and minimum scores are in each section of the exam (+overall scores).

	math	reading	writing	overall
mean	66.09	69.17	68.05	203.31
median	66.00	70.00	69.00	205.00
std	15.16	14.60	15.20	42.77
min	0.00	17.00	10.00	27.00
max	100.00	100.00	100.00	300.00

By information covered by the table, It is obvious that mean scores for each test was about 67.77.

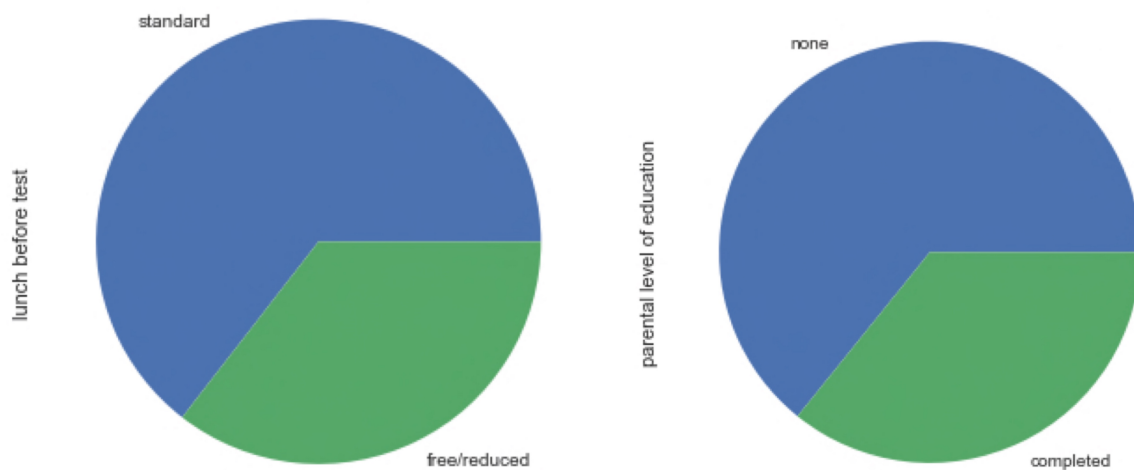
gender	ethn	par_edu	lunch	prep	math	reading	writing	overall
female	group E	bachelor's degree	standard	none	100	100	100	300
male	group E	bachelor's degree	standard	completed	100	100	100	300
female	group E	associate's degree	standard	none	100	100	100	300

So, to get 300 one should preferably:

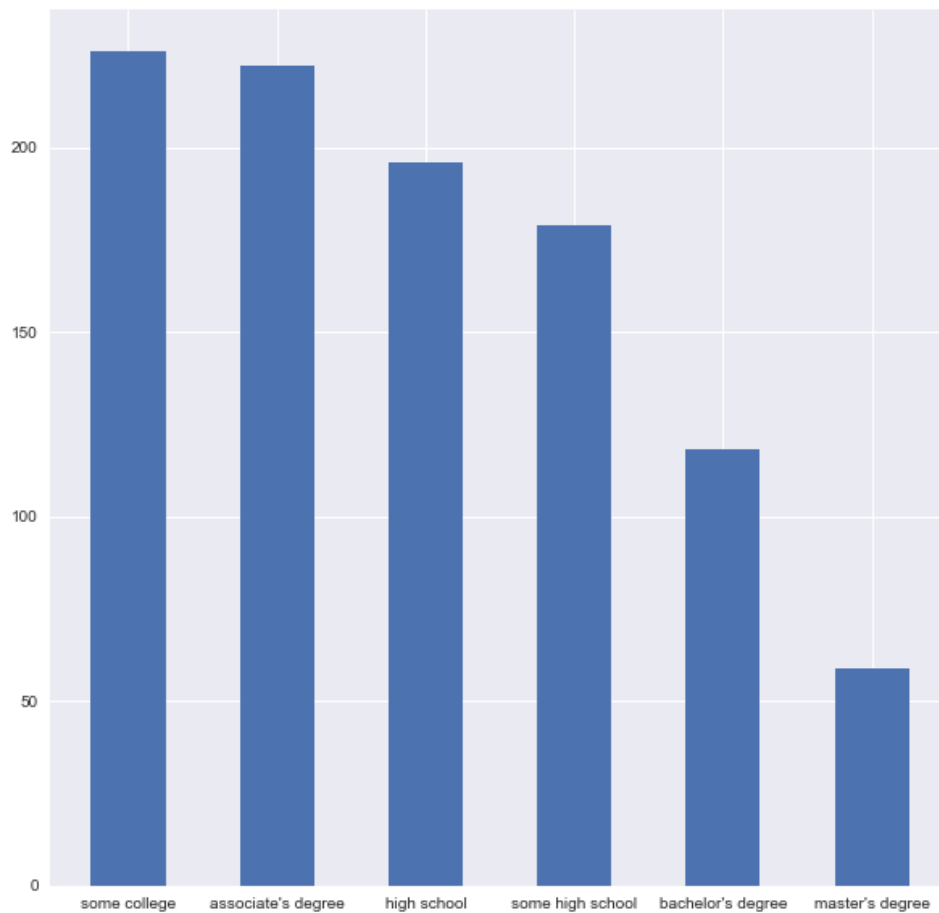
1. be from group E
2. have parents with bachelor's or associate's degree
3. have standard lunch
4. it's okay not to have preparation

Simple visualization

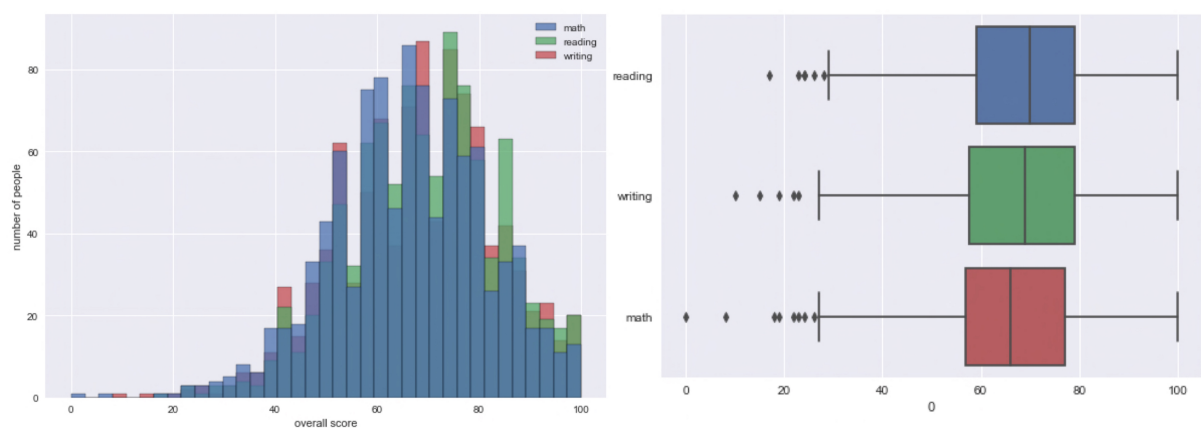
In this block there is simple visualization of given data.



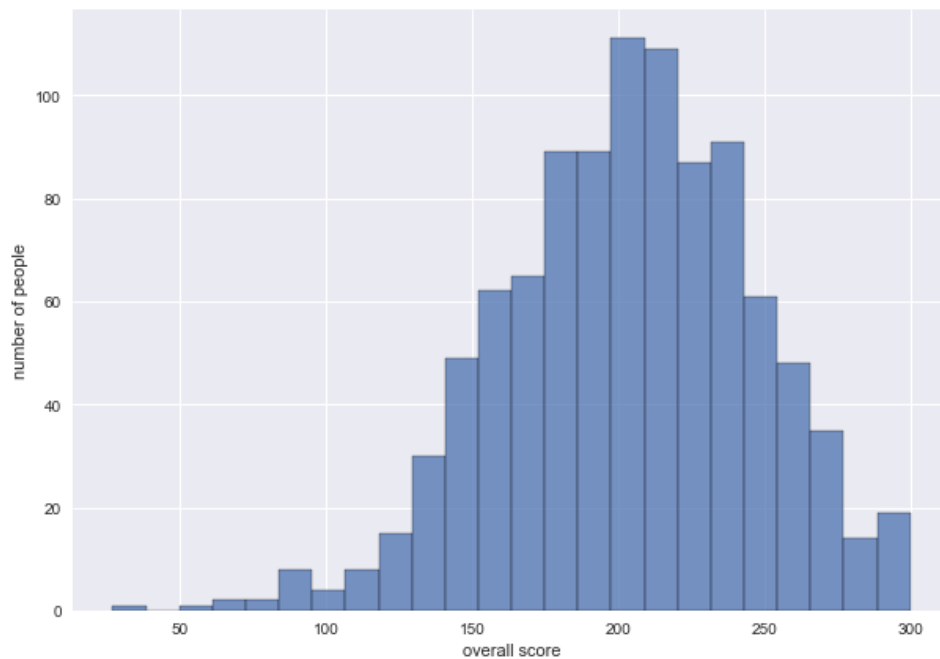
There were more people who preferred standard lunch to free/reduced one. Many participants abandoned the idea of preparation before the test.



Taking a closer look at this bar chart, it can be observed most parents of partakers had some college level of education, less of them had chosen to pursue master's degree.



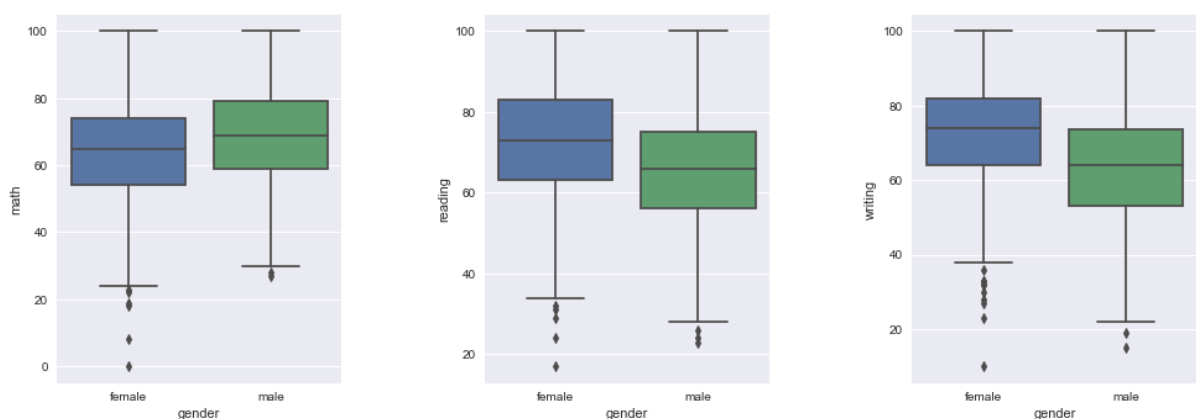
Reading was quite more comprehensible among respondents and math exam was the most complicated one.



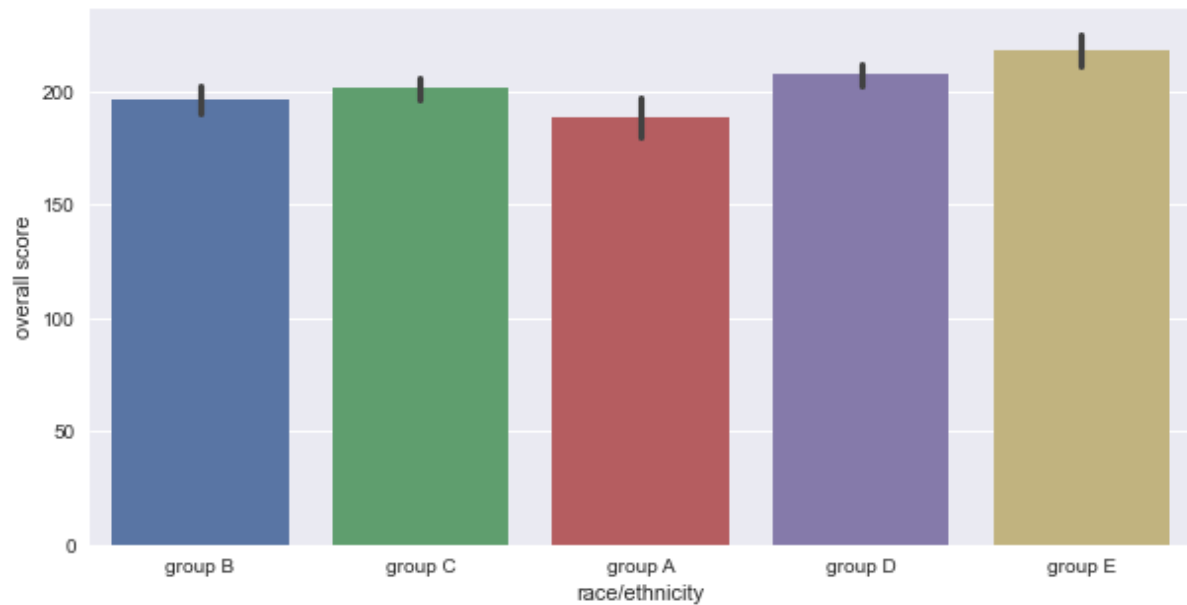
The most common scores were approximately from 180 to 240.

Visualization via comparison

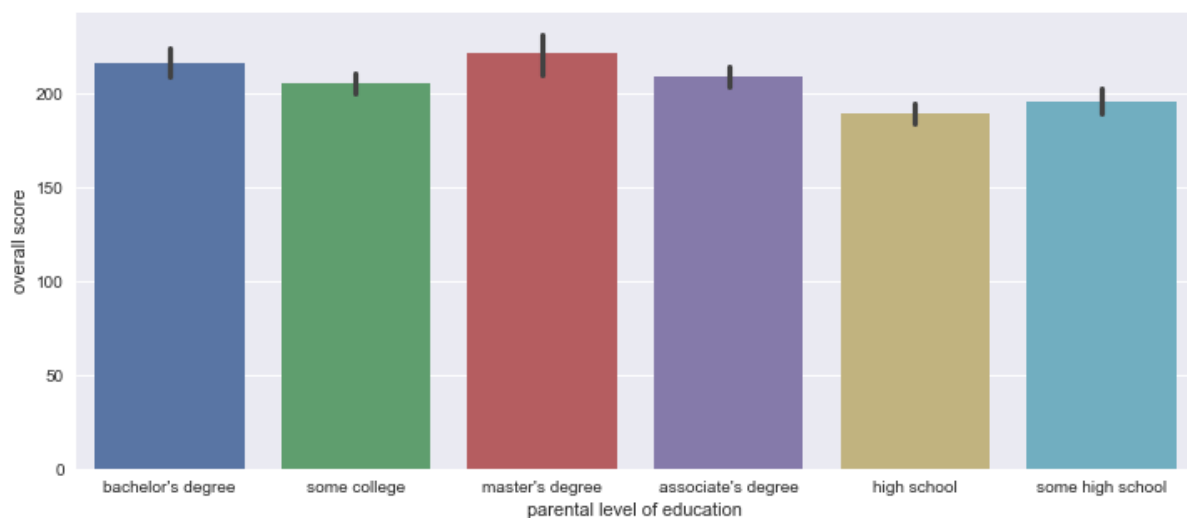
In this block it is observed how different attributes affect student's performance



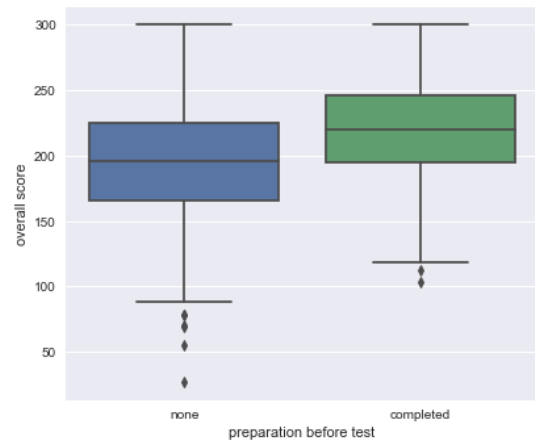
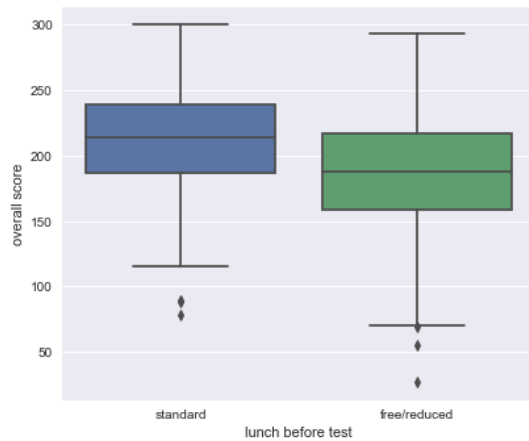
From the box plot it is evident that although men performed better in math, female examinees were superior in writing and reading skills.



Generally, people of group E were better than any other group (more than 200 overall score) and the worst performance is attributed to ethnic group A.



It was expected that students with parents with master's degrees were more likely to finish the test with better results in comparison with those whose parents hadn't graduated with it. The poorest results (average less than 200) were obtained by the group whose parents just left high school without tertiary education.



Clearly, people who had had lunch before taking the exam, they performed better than ones who hadn't eaten or ate reduced lunch. Moreover, it is transparent that without proper preparation results would be inferior to those people who had have it.

Conclusion

After deciphering given table this work can conclude that:

1. parental education would affect performance of children, and examinees with parents with master's degree would have better results (as it was predicted)
2. people who had had their lunches eaten and preparation done before test would perform better (as it was predicted)
3. males would be better in math (as it was predicted), and reading results would be somewhat equal for both women and men (as it was not predicted), also, results of writing would be higher for women (as it was predicted)
4. overall, reading would be the best result for all participants, and math is the worst (as it was predicted)