Principles of data science

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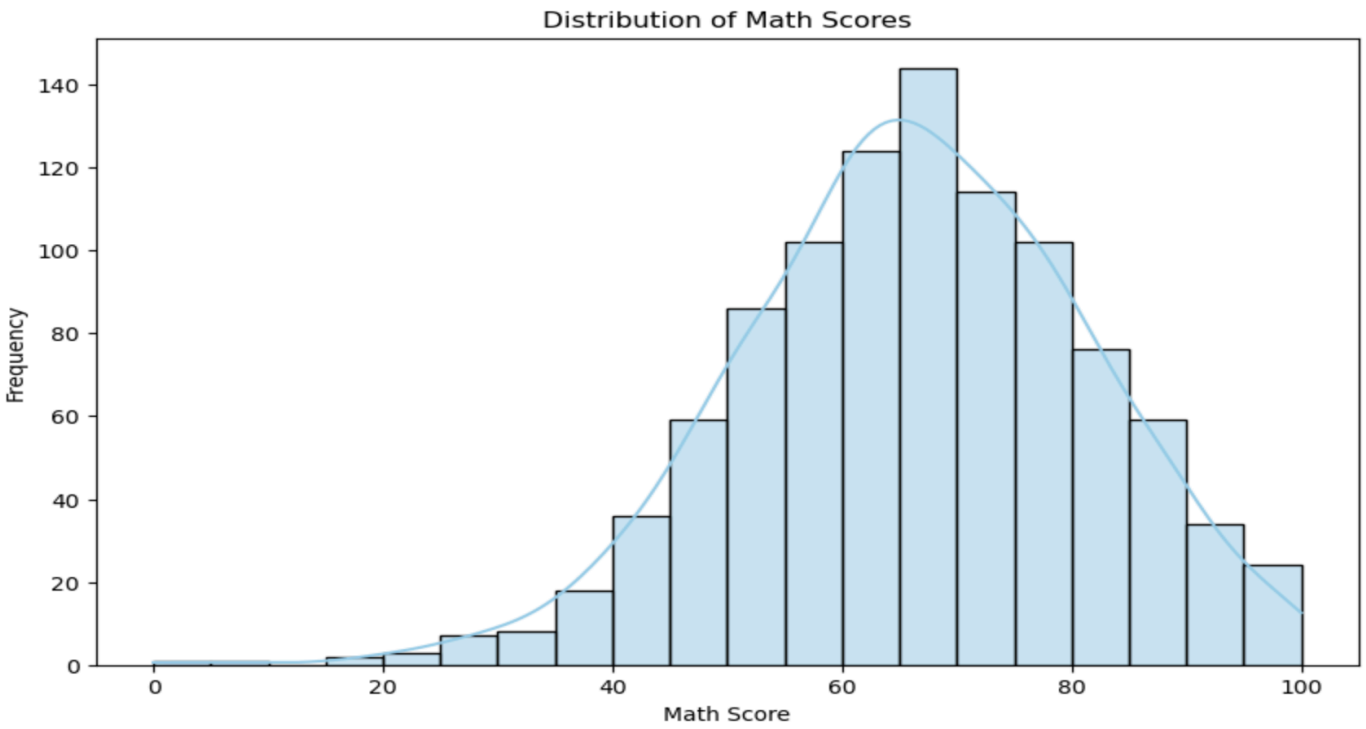
Question 2:
Plot1 :
The horizontal axis displays the various math scores, while the vertical axis displays the frequency of each score. For example, pupils who scored between 60 and 80 outnumber all other score ranges.

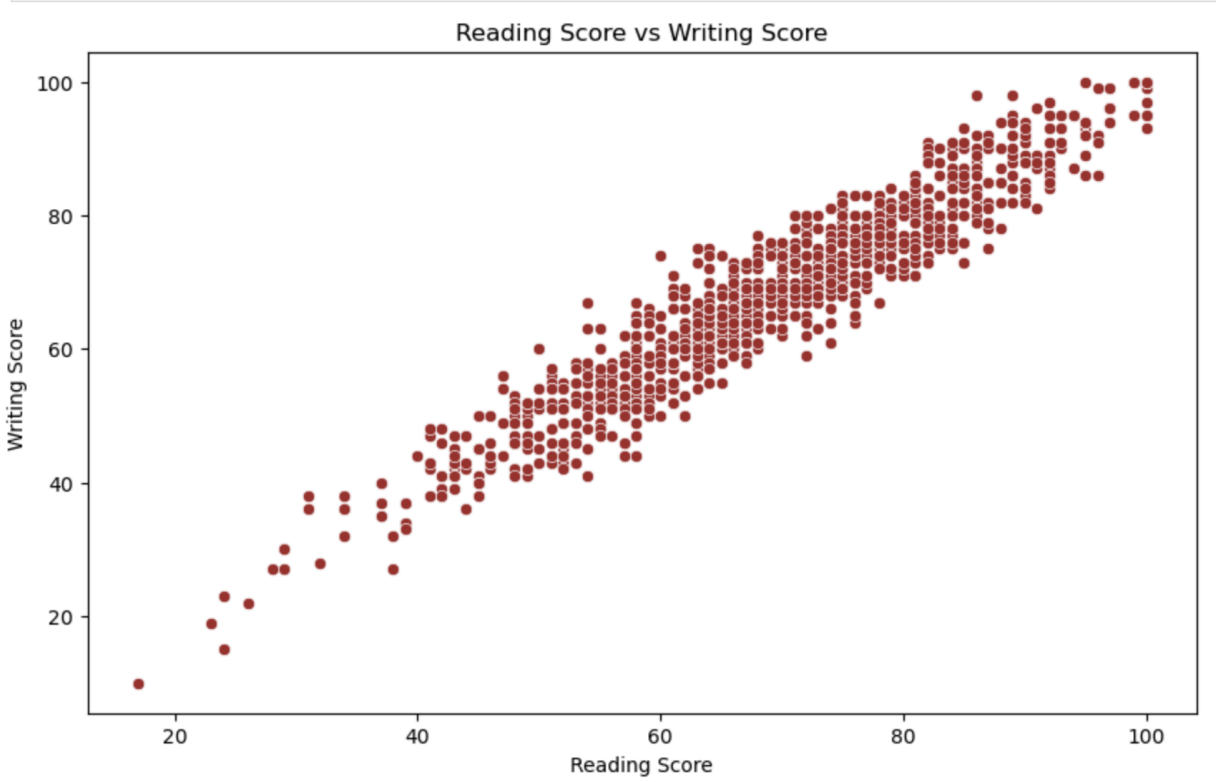
The histogram's form indicates that the math scores are normally distributed, which implies that the majority of the scores are concentrated around the average, with less points as you move away from the average in either direction.

Overall, the histogram indicates that the arithmetic scores in this dataset are normally distributed, with the majority of scores concentrated around the mean.

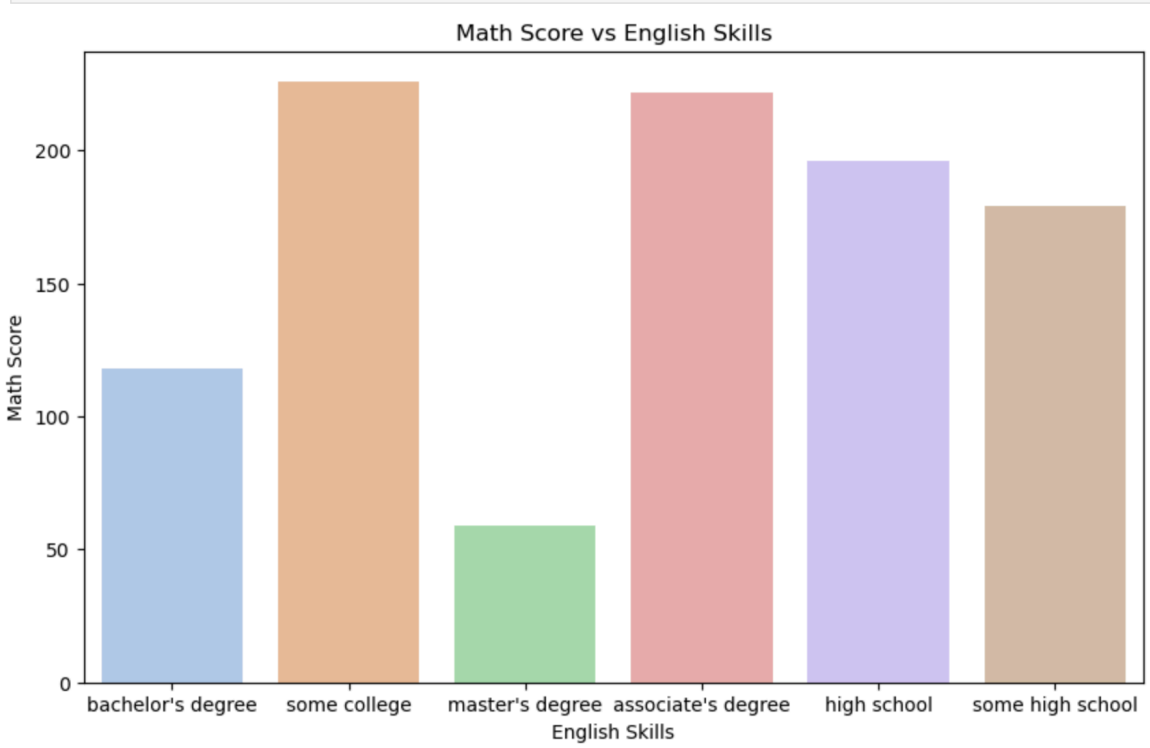


Plot2 :

The graph illustrates that those with better reading scores tend to have higher writing scores as well. But keep in mind that good reading does not necessarily translate into good writing. Another factor, such as intelligence or a high education, may benefit both. Also, the connection might be poor, not really robust. Overall, reading and writing appear to be inextricably linked, although the relationship is more nuanced than a straightforward cause-and-effect.

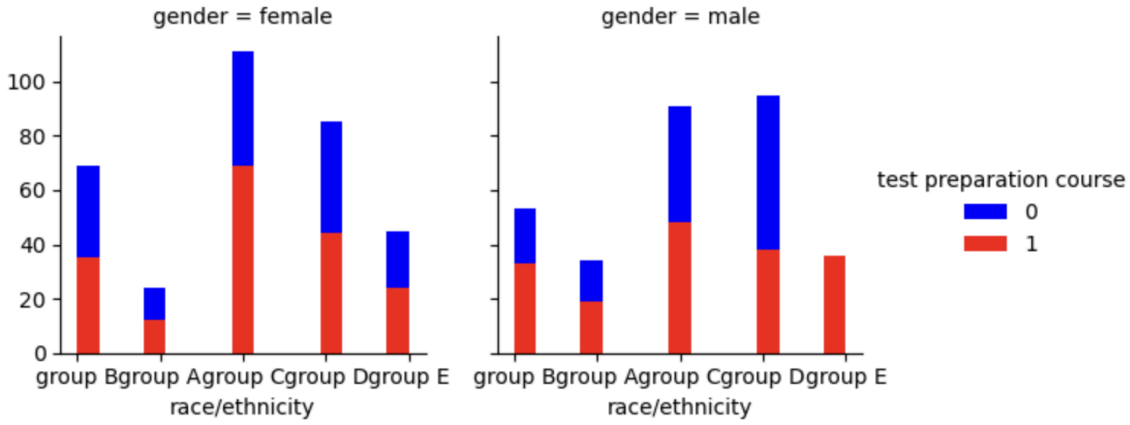


Plot3:
This graph indicates that persons with greater education tend to do better on math and English examinations. Consider it as climbing a ladder: the higher you climb (more education), the higher your average score. However, keep in mind that there is always someone lower on the ladder with you, as well as someone far higher, even at the same level!



Plot4:
The blue line reflects the percentage of persons who did not take the course, while the red line represents those who did.

Overall, more women than men finished the exam preparation course. For example, in group A, 70% of ladies finished the course, whereas only 40% of males did. This trend is consistent across all five groups displayed in the graph.



Plot5:
Strong positive correlations: Scores that are very positively associated have values close to one. For example, reading and writing scores have a correlation of 0.99, indicating that they are extremely tightly associated.
Strong negative correlations: Scores that are substantially negatively connected have values near -1.0. There are no significant negative associations in this heatmap.
Weaker correlations: Scores with correlations close to zero indicate a weaker link. For example, arithmetic and English skills have a correlation coefficient of 0.82, suggesting a somewhat favorable link.