Assignment-01

Principles of Data Science-5530

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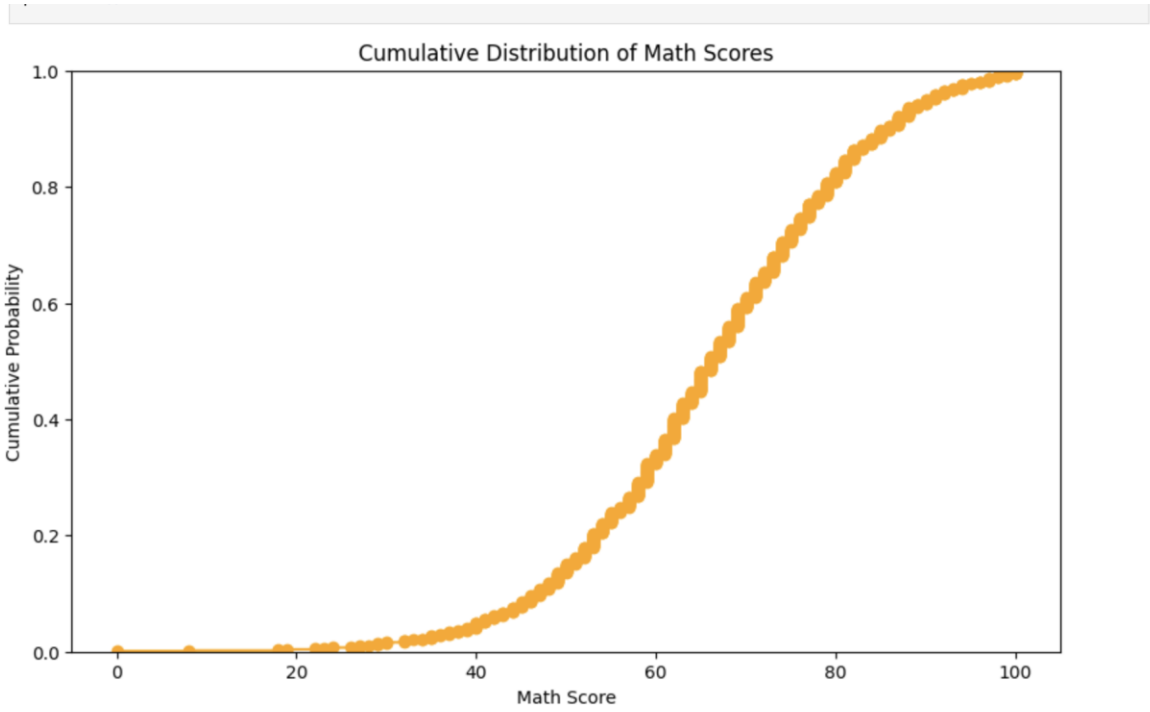
Plot 1:

This graph creates an empirical cumulative distribution function (ECDF) plot, effectively illustrating the cumulative distribution of math scores within the dataset. Each data point is represented by a marker and connected by lines, making it easy to discern the distribution's shape and spread. This visualization offers a clear understanding of the cumulative probability distribution of math scores, providing valuable insights into the overall performance distribution of students in the dataset.

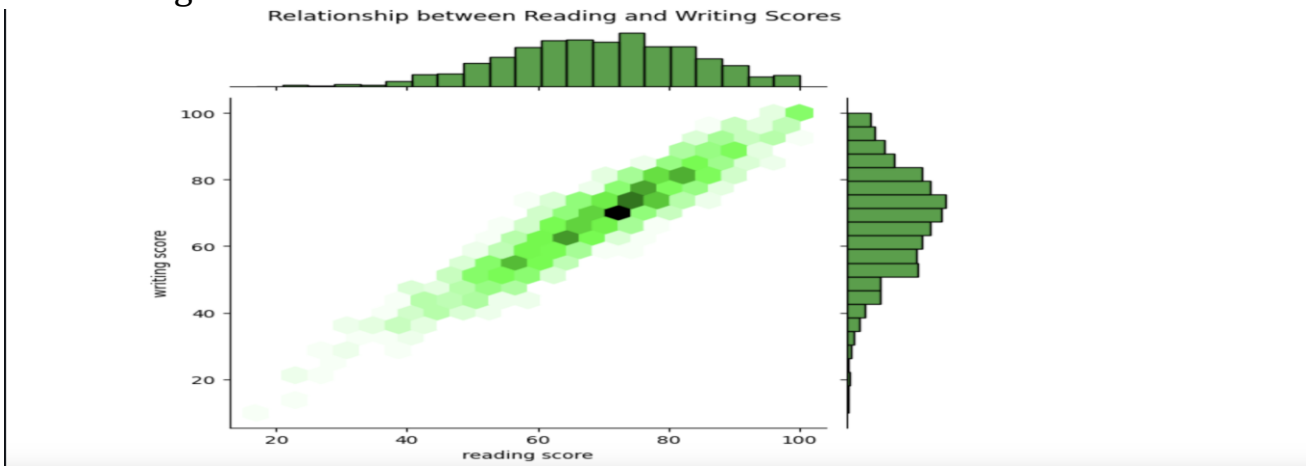
X- axis: Math Score

Y – axis: Cumulative Probability



Plot 2

Visualizations displaying the relationships between different pairs of scores within the dataset. The first plot employs a joint hexbin plot to illustrate the density of data points and the correlation between reading and writing scores

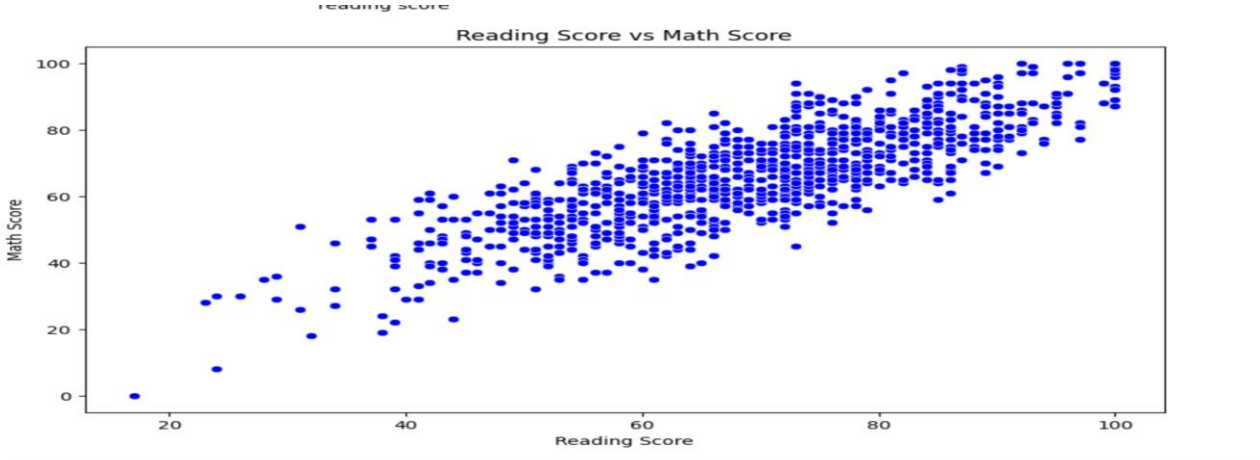


Plot 3:

The plot uses a scatter plot to depict the relationship between reading and math scores.

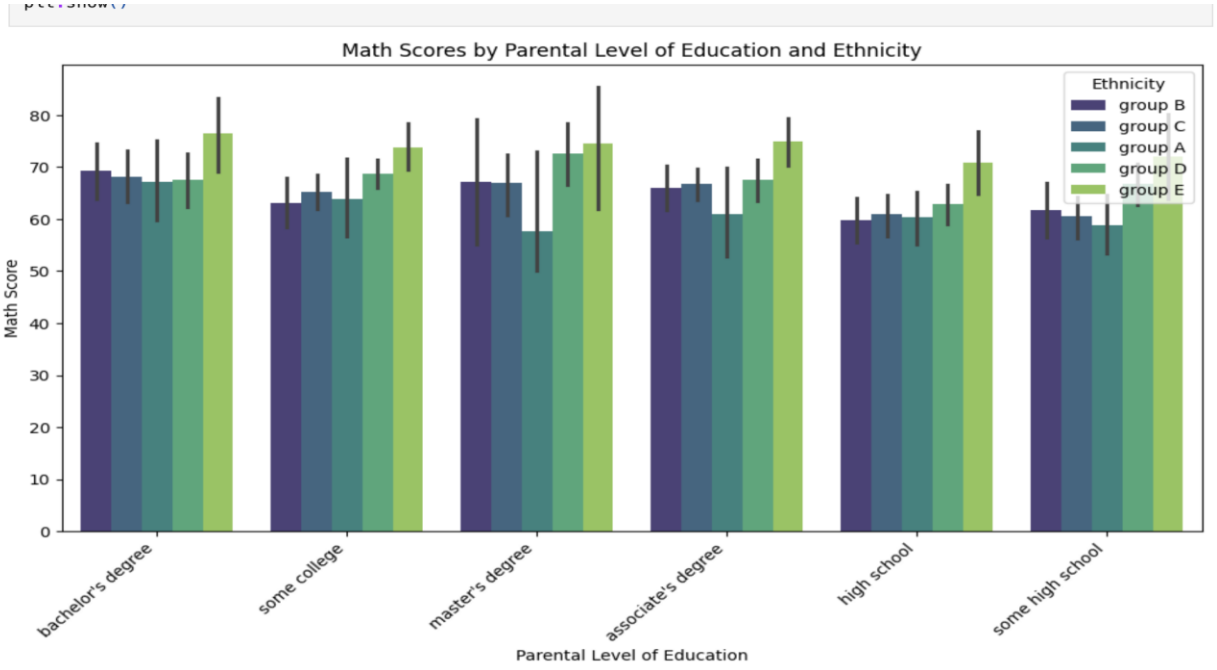
X-Axis: Reading Score

Y-Axis: Math Score



Plot 4:

The bar plot shows the average math scores across various parental levels of education, further categorized by ethnicity. This visualization enables easy comparison of math performance between different educational backgrounds and ethnic groups within the dataset, offering insights into potential disparities or patterns in academic achievement. The clear labeling, including a descriptive title, axis labels, and a legend, enhances the interpretability of the plot, facilitating a comprehensive understanding of the relationship between parental education, ethnicity, and math scores.



Plot 5:

The bar plot shows the count of students who have taken or not taken a test preparation course across different parental levels of education. This visualization allows for a comparative analysis of test preparation course participation among various parental education levels, providing insights into potential disparities or patterns in test readiness efforts.

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plt.show()
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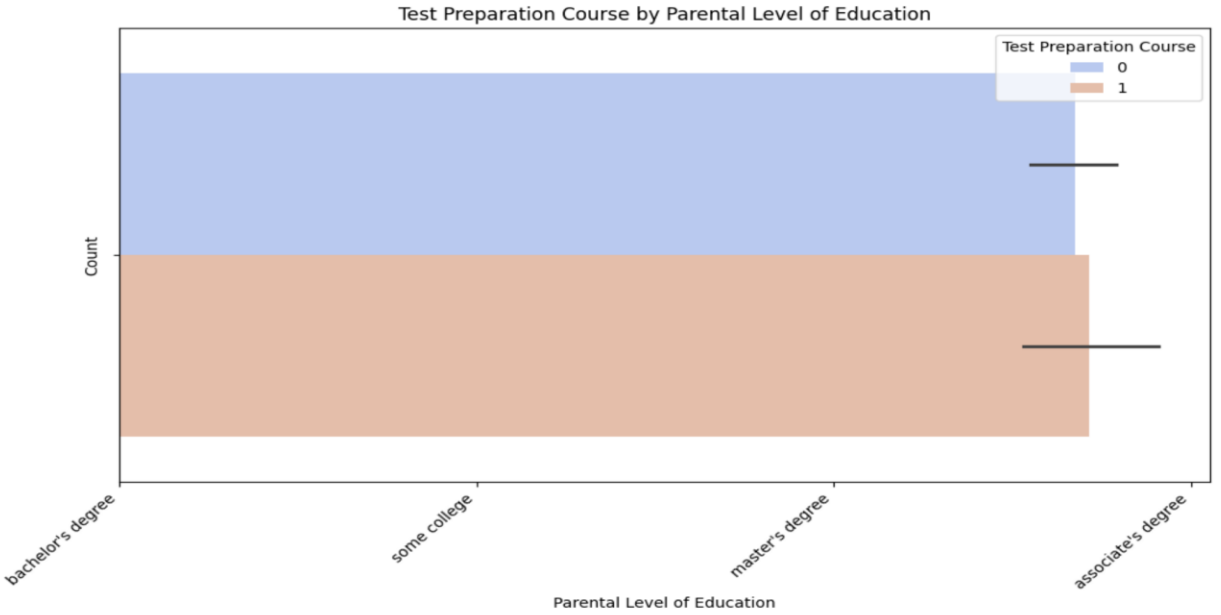
Test Preparation Course by Parental Level of Education
Test Preparation Course
0
1
Count
bachelor's degree
some college
master's degree
associate's degree
Parental Level of Education