**Assignment-1**

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**Q2: Explain what kind analysis has become easier with each of the visualizations.**

**Ans.** The visualizations provide several insights into the student performance dataset. The distribution plots for math, reading, and writing scores make it easy to see how scores are spread, allowing us to detect skewness or outliers and compare performance across subjects. The gender-based box plots help highlight differences in performance between male and female students, making it easier to spot trends or variations in test results by gender. Bar charts showing the relationship between parental education levels and test scores reveal the impact of parental background on student achievement, allowing for comparisons across different education groups. The scatter plots for lunch type versus test scores indicate the influence of socio-economic factors on performance, with distinctions made clearer when visualizing by lunch type and gender. Finally, the correlation heatmap highlights the relationships between scores in different subjects, making it easier to identify strong or weak correlations, which can guide further analysis on related factors influencing academic success. These visualizations facilitate a deeper understanding of the dataset by making complex patterns and relationships more apparent.