**Assignment-1**

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

The visualizations provide valuable insights into student performance across various factors. The **math scores distribution** histogram helps identify the spread, concentration, and outliers in students' math scores, offering a clear view of overall performance. The **gender score comparison** bar chart allows for an easy comparison of average math, reading, and writing scores between male and female students, highlighting any gender-based performance differences. Similarly, the **test preparation impact** chart shows how students who completed a test preparation course generally perform better across all subjects, demonstrating the effectiveness of the course. The **parental education vs. student performance** bar chart reveals a correlation between parental education levels and student scores, indicating that students with more educated parents tend to achieve higher scores. Lastly, the **race/ethnicity performance** radar plot enables comparison of scores across different racial/ethnic groups, making it easier to spot trends and disparities in academic achievement across subjects. Together, these visualizations simplify the analysis of demographic, preparatory, and parental factors affecting student success.

**Visualizations:**



















