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**Assignment-1**

**Data Analysis of Student Performance Dataset Results**

1. The graph below illustrates the distribution of males and females across different race/ethnicity groups in the dataset. The race/ethnicity categories are divided into Group A, Group B, Group C, Group D, and Group E. In the graph, females are represented by the color period(light blue), while males are represented by the color blue.

A graph of a number of people

Description automatically generated

***Conclusion:***

It is evident that the majority of both females and males fall into the Group C race/ethnicity category. The second highest count of both males and females can be observed in the Group D race/ethnicity category. Conversely, the lowest counts of both females and males are associated with the Group A race/ethnicity category.

1. Histograms have been utilized to depict the distribution of Reading, Writing, and Math Scores. On the X-axis, you can observe the score ranges for Reading, Writing, and Math, while the Y-axis represents the frequency of occurrence.

A group of graphs showing different levels of writing

Description automatically generated with medium confidence

***Conclusion:***

It can be inferred that the majority of students have Reading Scores, Math Scores, and Writing Scores falling within the range of 60 to 80.

1. Various types of scores have been compared between males and females. On the X-axis, you can see the different score categories being compared between the two genders, while the Y-axis represents the count or frequency of observations.

A graph of different colored bars

Description automatically generated with medium confidence

***Conclusion:***

The figure indicates that, on average, males tend to excel in math scores, while females tend to achieve higher scores in reading and writing.

1. Scores are being compared against the Test Preparation course variable, categorized into "completed" or "none," for both males and females. On the X-axis, you can see the Test Preparation course categories, while the Y-axis represents the types of scores being examined.

A group of blue and orange boxes

Description automatically generated

***Conclusion:***

Participating in test preparation courses can enhance students' performance, although the impact may vary slightly based on the type of score and gender.

1. The graph below illustrates a heatmap representing the correlation matrix for Writing, Reading, and Math Scores.

A screenshot of a graph

Description automatically generated

***Conclusion:***

The Reading Score and Writing Score exhibit a positive correlation, while both the Reading Score and Writing Score show a negative correlation with the Math Score.