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Project 1 – College Data

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Based on the dataset 10 simple questions:

1. What is the average (mean) graduation rate among the colleges?
 - Method: Calculate the mean of the graduation rates.
2. What is the median SAT score across all colleges?
 - Method: Determine the median of the SAT scores.
3. What is the standard deviation of the student-to-faculty ratios?
 - Method: Compute the standard deviation for student-to-faculty.
4. How are the colleges distributed across different regions?
 - Method: Create a barplot or pie chart showing the frequency of colleges in each region.
5. What is the distribution of tuition fees among the colleges?
 - Method: Generate a histogram of the tuition fees.
6. Are there any outliers in the distribution of acceptance rates?
 - Method: Use a boxplot to identify outliers in acceptance rates.
7. What is the variance in the number of undergraduate students enrolled?
 - Method: Calculate the variance of undergraduate enrollment numbers.
8. Is there a correlation between SAT scores and graduation rates?
 - Method: Compute the correlation coefficient between SAT scores and graduation rates.
9. What proportion of colleges are private versus public?
 - Method: Create a barplot or pie chart to show the proportion of private and public colleges.

10. How does the average tuition fee compare between private and public colleges?
 - Method: Calculate and compare the mean tuition fees for private and public colleges.

ChatGPT Questions:

1. What is the average (mean) tuition fee for colleges in the dataset?
 - Method: Calculate the mean of the tuition fees.
2. What is the median student-to-faculty ratio among the colleges?
 - Method: Determine the median of the student-to-faculty ratios.
3. What is the range of graduation rates across all colleges?
 - Method: Identify the minimum and maximum graduation rates to determine the range.
4. How many colleges have an acceptance rate below 50%?
 - Method: Use a barplot to show the count of colleges with acceptance rates below 50%.
5. What is the distribution of colleges based on their control (public vs. private)?
 - Method: Create a pie chart to display the proportion of public and private colleges.
6. Is there a correlation between tuition fees and SAT scores?
 - Method: Compute the correlation coefficient between tuition fees and SAT scores.
7. What is the standard deviation of the graduation rates?
 - Method: Calculate the standard deviation of graduation rates.
8. How are colleges distributed across different regions in terms of tuition fees?
 - Method: Generate boxplots to compare tuition fees across regions.
9. What percentage of colleges have a student-to-faculty ratio greater than 20?

- Method: Calculate the proportion and represent it using a barplot.

10. Is there a significant difference in average SAT scores between public and private colleges?

- Method: Compare the mean SAT scores between public and private colleges using barplots.

Final Selection of 10 Questions for Analysis:

1. What is the average (mean) graduation rate among colleges?

- Method: Calculate the mean of the graduation rates.

2. What is the median SAT score across all colleges?

- Method: Determine the median of the SAT scores.

3. What is the standard deviation of the student-to-faculty ratios?

- Method: Compute the standard deviation for student-to-faculty ratios.

4. How are the colleges distributed across different regions?

- Method: Create a barplot showing the frequency of colleges in each region.

5. What is the distribution of tuition fees among the colleges?

- Method: Generate a histogram of the tuition fees.

6. Are there any outliers in the distribution of acceptance rates?

- Method: Use a boxplot to identify outliers in acceptance rates.

7. Is there a correlation between SAT scores and graduation rates?

- Method: Compute the correlation coefficient between SAT scores and graduation rates.

8. What proportion of colleges are private versus public?

- Method: Create a pie chart to show the proportion of private and public colleges.

9. How does the average tuition fee compare between private and public colleges?

- Method: Calculate and compare the mean tuition fees for private and public colleges.

10. Is there a significant difference in average SAT scores between public and private colleges?

- Method: Compare the mean SAT scores between public and private colleges using barplots.