Scenario 1: Customer Satisfaction Analysis

Question:
A company wants to analyze customer satisfaction survey data. How can Data Science concepts help to clean and analyze this data?

Ans:

Step 1: Data collection and preprocessing, if any missing value or null value present, correct them and remove duplicates.

Step 2:Data type correction can be done to handle categorical data if any.

Step 3: Start EDA process, by visualizing data of customer satisfaction for various region using bar plot.

Step 4: To analysis trend, calculate mean of customer satisfaction.

Scenario 2: Product Sales Performance

Question:
A retail store has recorded monthly sales data for its products. How can Data Science concepts be applied to understand sales performance?

Ans:

Step 1: Data collection and preprocessing the data for EDA. remove duplicate value, handle missing data and categorical data conversion if any.

Step 2: Start EDA process using line plot for checking trend, box plot for outliers, bar plot for categorical comparison of monthly sales.

Step 3: Calculate mean. Median, and standard deviation for the dataset for descriptive statistical analysis.

Scenario 3: Medical Test Effectiveness

Question:
A hospital conducted a study to check the effectiveness of a new medical test. How can Data Science concepts be used to validate its results?

Ans:

Step 1: Data collection and preprocessing the data by handling missing value.

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Step 2: Perform ttest and hypothesis test to analysis the effectiveness of the new medical test.

Step 3: If the p value is less than or equal to 0.05, then it rejects the null hypothesis I.e there is a effectiveness of the new medical test. Otherwise, there is no significant difference if it doesn't satisfy the condition.

Scenario 4: Employee Performance Evaluation

Question:
 A company wants to evaluate employee performance using various metrics. How can Data Science concepts be applied?

Ans:

Step 1: Data collection and preprocessing the data by handling missing value, categorical features and duplicate data.

Step 2: Calculate correlation matrix to check the relationship between the data features. And check multicollinearity using VIF.

Step 3: Use histogram to show the overall data distribution and box plot for performance comparison.

Scenario 5: Flight Delay Investigation

Question:
 An airline tracks flight delays (in minutes) for 30 flights. How can Data Science concepts help in understanding the delays?

Ans:

Step 1:Data collection and preprocessing by handing missing data.

Step 2: Calculated mean, median, mode and standard dievation for descriptive statistics.

Step 3:For Outlier detection do interquartile range calculation and use box plot for visualization

Step 4: For overall normal distribution of data use histogram for visualization