Assignment Title: Descriptive Analytics for Mixed Data

Objective:
Elevate your mastery of descriptive analytics for diverse data types within the sphere of business. You are to deploy statistical methodologies and qualitative assessment to deconstruct and understand patterns and trends from a provided dataset.

Assignment Overview:
A dataset from a list of customers, inclusive of service charges, has been furnished for your analysis. It encompasses both qualitative insights and quantitative details in the form of product sales, and customer data over a two-year period.

Task 1: Quantitative Data Analysis
- Compute average, median, and mode values for the quantitative.
- Construct a sales (charges) data frequency distribution.
- Ascertain data spread by calculating range, variance, and standard deviation.
- Develop visual aids like histograms, box plots, or bar graphs to depict sales figures.

Task 2: Qualitative Data Analysis
- Review categorial data.
- Quantify and visualize the categorial data with meaningful categories and charts.
- Create dummy variables for region and smoker, and one other categorial data.
- Compile your discoveries into a narrative, emphasizing major insights and potential links to the sales figures.
- Analyze correlations between different attributes, if exists.

Data Sample:
Your dataset (**descriptive.xlsx**) is attached.

Deliverables:
1. An analytical report on the quantitative data, inclusive of computations and graphical representations.
2. A synthesis of the qualitative data examination, spotlighting the emergent themes and their implications for sales.
3. A cohesive analysis that intertwines the qualitative findings with the sales trends.
4. Strategic recommendations for the retail establishment, derived from your analysis.

Submission Instructions:
- Present your work as a PDF file.
- Label and elucidate all diagrams and tables unambiguously.
- Append any supplementary software data or coding structures utilized.

Assessment Criteria:
- Precision of statistical metrics and calculations.
- Suitability and lucidity of graphical depictions.
- Cohesiveness of the analysis and practical suggestions.

Notes:
- Execute all analysis with suitable software (e.g., Excel, SPSS, Tableau).
- Originality is critical; ensure the authenticity of your submission.
- Using proper charts that convey your conclusions is very important.

Wishing you success—we anticipate your analytical interpretations!

Evaluation Outline:
Descriptive Analysis Assignment Grading Scheme
The assignment carries a total of 10 marks, allocated as follows:
1. Descriptive Statistics and Calculations (2 marks)
      - Accurate mean, median, mode computation (0.5 marks)
      - Precise range, variance, and standard deviation calculation (0.5 marks)
      - Precise frequency distribution (0.5 marks)
      - Additional statistical accuracy (0.5 marks)
2. Data Visualizations (2 marks)
      - Proper visualization selection (1 mark)
      - Visualization clarity and labeling (1 mark)
3. Integrated Analysis (1 marks)
      - Insightful analysis connecting qualitative and quantitative aspects (1 mark)
5. Recommendations (1 mark)
      - Well-founded recommendations for the business (1 mark)
6. Presentation and Submission (1 mark)
      - Report quality

Additional Points:
- Original work is mandatory. Plagiarism will result in a zero mark.