

Assignment: Data Analytics Process and Interpretation

Objective:

Assume you are working as a Data Analyst at a company, where you have been assigned to perform a complete data analytics process to gain insights into a specific business problem. Your goal is to analyze a dataset, apply statistical methods, visualize key findings, and document your approach in a structured report.

Task Details:

1. Select a Business Domain & Dataset:
 - a. Choose a dataset relevant to a specific business domain (e.g., finance, healthcare, e-commerce, marketing, social media, or customer behavior).
 - b. Public datasets from Kaggle, UCI Machine Learning Repository, or government open data portals can be used.
2. Define an Analytical Scenario & Process:
 - a. Identify a specific business question or challenge.
 - b. Clearly define the data analytics process you will follow, including data collection, preprocessing, exploratory data analysis (EDA), statistical analysis, and visualization.
3. Perform the Analysis Using Python:
 - a. Load and preprocess the data (handling missing values, encoding categorical variables, etc.).
 - b. Conduct exploratory data analysis (EDA) using summary statistics and visualizations.
 - c. Apply relevant statistical methods (correlation analysis, regression, clustering, etc.).
 - d. Visualize key findings using libraries such as Matplotlib, Seaborn, Plotly, and Bokeh.

4. Document your work in a report of up to 3 pages, including graphs, tables, and images.:
 - a. Clearly explain your data selection, analytical process, and findings.
 - b. Include data visualizations and statistical analysis results (graphs, charts, tables).
 - c. Interpret your results and discuss their implications for decision-making in the business context.
 5. Maintain a GitHub Repository:
 - a. Upload your entire analysis, including Python scripts or Jupyter notebooks.
 - b. Ensure the repository is public with a clear README.md explaining your project.
 - c. Maintain commit history to track progress.
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Deliverables:

- Professional report in PDF format (max. 3 pages, including GitHub repository link). – VLE submission.
- GitHub repository with complete code and commit history.

Submission Deadline: 27/02/2024

(You have 21 days to complete this assignment. Ensure that all work is original and clearly documented.)
