Data Analyst Technical Challenge

Scenario: Analysing Medical Claims Data for Cost Reduction Opportunities

Dataset: You are provided with a historical medical claims dataset for a health insurance company. This dataset includes anonymised information on individual members, their diagnoses, procedures performed, medications prescribed, and the associated costs for each claim.

Data Features:

Member Demographics: Age, gender, geographic location, Health Facility,

Claims Data: Diagnosis codes (ICD-10), procedure codes (CPT), medication codes (NDC), dates of service, billed amount, verified amount, and paid amounts

Analytical Requirement

The health insurance company is looking to identify areas for cost reduction within its member population. Your task is to analyse the claims data and present insights that can help the company achieve this goal using a tool of your choice.

Here are some guiding questions to consider during your analysis (***do not be limited to these***):

1. Are they specific diagnoses or procedures that are driving a high proportion of healthcare costs?

2. Are there any variations in costs based on member demographics, plan type, or geographic location?

3. Can you identify any potential areas for cost savings through negotiations with healthcare providers or by implementing disease management programs?

Evaluation Criteria

The interviewer will be evaluating your approach to this scenario based on the following:

1. Understanding of the Business Problem: Do you clearly understand the objective of cost reduction and how data analysis can be used to achieve this goal?

2. Data Exploration and Visualisation: Can you effectively explore the data to identify trends and patterns? Do you choose appropriate visual representations to communicate your findings clearly and concisely (e.g., bar charts, heat maps, scatterplots)?

3. Analytical Skills: Can you identify statistically significant relationships within the data? Are you able to interpret the results and draw meaningful conclusions?

4. Communication Skills: Can you explain your findings in a clear, concise, and non-technical manner that is understandable to a business audience?

5. Actionable Insights: Do your recommendations provide actionable insights that the company can use to reduce healthcare costs?