

Ramsay Data Insights

Take-home Technical Test

Instructions:

- Submit your answers in a well-organised document or set of files, including any code (preferable in a Github Repo) and visualisations.
- Ensure your work is clearly documented and explained.

Part	Questions
Part 1: Data Exploration and Preparation	<p>1. Identify and describe 2 data quality issues present in the dataset.</p> <p>Briefly propose strategies to address these issues. Document the steps taken and provide a summary of the data quality improvements.</p>
	<p>2. Using the data provided create a feature that could be valuable for analysis or modelling.</p> <p>Explain the rationale behind the feature you created and how they might be useful for analysis.</p>
Part 2: Data Analysis and Visualisation	<p>3. Using the data provided produce a piece of analysis that describes to Ramsay which DRGs accrue the largest charges and your hypotheses for the drivers of these charge.</p> <p>Visualise these trends using appropriate charts or graphs and describe the results.</p>

	<p>4. Write an SQL query to calculate the total and average admissions for each month over the last two years. Include the month and year in the results.</p> <p>5. Write an SQL query to analyse the distribution of <code>TotalCharges</code> by <code>PrincipalDiagnosis</code> and <code>Sex</code>. Use percentiles to describe the distribution.</p>
Part 4: Strategic Insights and Recommendations	<p>6. Based on your analysis, identify two strategic insights that could help Ramsay improve hospital operations or patient care. Justify your insights with evidence from your data analysis.</p>
Part 5: Model Development	<p>7. Describe a predictive model that could help Ramsay act upon one of the insights you found in Part 4. Describe your model purpose, model choice, preprocessing steps, and evaluation metrics.</p>
Part 6: MLOps and Deployment	<p>8. Describe how you would deploy the trained model into a production environment. Discuss how you would monitor its performance and handle any potential issues.</p>