

Ramsay Data Insights

Take-home Technical Test

Instructions:

- Submit your answers via email response 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	Example answers (not to be shared)
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>E.g. Inconsistencies in data types, unusual values, or outliers.</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>	<p>Create a feature representing the ChargePerDay (i.e., the total charges divided by LengthOfStay).</p> <p>Create a binary feature indicating whether the AdmissionTime is during office hours (e.g., 9</p>

		AM to 5 PM) or outside of office hours.
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>For example:</p> <p>Explore how <code>TotalCharges</code> changes over different <code>caretype</code> and <code>modeofseparation</code>.</p> <p>Analyze changes in the <code>LengthOfStay</code> over different DRGs.</p> <p>Identify a trend of interest based on your understanding of the data.</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>	

