Senior Business Intelligence Analyst

Senior Business Intelligence Analyst Skills Challenge

Congratulations on reaching this stage in the interview process! This challenge is designed to evaluate both your technical proficiency and communication skills, which are core elements of the day-to-day work of a Senior Business Intelligence Analyst at Walker & Dunlop.

Overview and Data

Part 1: Business Requirements Documentation (Communication & Stakeholder Engagement)

Scenario

You have been embedded with the Loan Servicing team and asked to assist in creating a new set of Power BI dashboards to support their monthly loan performance reporting. Your responsibility is to gather and own the business requirements and communicate them clearly to a data engineering team.

Your Task

Draft a short (1 to 2 page) Business Requirements Document (BRD) for a hypothetical Loan Performance Summary dashboard.

Your BRD should include:

- Stakeholder goals
- Key metrics / KPIs (e.g., delinquency %, portfolio size, aging buckets)
- Proposed visual elements (e.g., slicers or filters, cards, tables, graphs)
- Any assumptions or gaps requiring clarification.

Write your BRD with both a non-technical stakeholder and a developer in mind. Be clear, concise, and specific.

Part 2: Commercial Real Estate Property Analysis (Technical Challenge)

Scenario

Our product team is exploring commercial real estate opportunities and needs help identifying which properties show the highest potential return on investment. You will use property and demographic data to calculate relevant metrics, surface insights, and develop a Power BI report.

Provided Datasets

- Property_dataset_sample.csv
  - The property dataset contains commercial real estate property details across various U.S. states.
- Demographics_US.csv
  - State-level demographic indicators from the U.S. Census Bureau
- State_codes_mapping.csv
  - Mapping between U.S. state codes and names

Your Task

- Perform Exploratory Data Analysis (EDA) on the property dataset.
- Enrich the dataset with demographic data (state-level)
- Calculate and include the following for each property:
  - Cap Rate
  - Cap Rate Ranking (within each state)
  - Rent % Difference from State Median Rent
  - Rent Affordability Ratio
  - Rent Affordability Percentile Rank (within state)
- Create a Power BI report that includes:
  - Key metrics summary
  - Comparison of property profitability (Cap Rate) across locations
  - Top three income-generating properties per state
- Documentation (README.txt)
  - In your documentation, please address the following:
    - Assumptions and reasoning behind your metric definitions
    - Data handling and processing decisions

    - How would you automate regular updates of the analysis and Power BI Report?
    - How would you communicate findings to executives and non-technical stakeholders?

Should Haves

- Define and include in the dataset a Property Occupancy Index (relative to State)
    - This should indicate if the property's occupancy rate is above or below the State's occupancy rate.
- Propose a new, relevant metric of your choosing and explain your rationale.

Suggested Technologies

- SQL (database of your choice
- Power BI Desktop

Submission Instructions

Create a private GitHub or GitLab repository and contribute your work as iterations. Once complete, share the repository link via email.

- Your submission must include:
    - Part 1 (Business Requirements Documentation (Communication & Stakeholder Engagement))
        - Business Requirements Document
    - Part 2 (Commercial Real Estate Property Analysis (Technical Challenge))
        - SQL scripts
        - Excel export of your enriched dataset
        - Power BI Report (pbix file)
        - README.txt with:
            - Metric logic and assumptions
            - Data processing decisions
            - Communication strategy