

Pre-Interview Screening Test

Welcome and thanks for your interest in joining Macquarie Electric!

We're really excited to have you move forward in our hiring process. Before the interview, we'd love for you to take a quick screening test. Please take your time to read through the instructions carefully. We're looking forward to seeing how you tackle this!

Question

You're working with three datasets: customers, their transactions, and a product catalog. The goal is to build a complete pipeline; from uploading the data to generating reports—that helps make sense of all this information.

1. A Simple Web App

Create a simple python Flask-based web application where users can upload an Excel file containing all three sheets: Transactions, Customers, and Products.

2. File Validation

Once the file is uploaded, check that it's structured correctly and contains the expected data.

3. Data Processing with Pandas

After validation, use Pandas to:

- a. Detect changes in customer addresses over time and keep a history of those changes.
- b. Calculate total transaction amount of each customer for each product category.
- c. Identify the top spender in each category.
- d. Rank all customers based on their total purchase value across all products.

4. Geolocation Enrichment

Use any external API to fetch latitude and longitude for each unique customer address. Add this location data to the customer records.

Note: It's okay if fetched geolocation is not entirely accurate, since the addresses in the dataset are not accurate.

5. Logging Uploads

Save metadata about each upload (i.e. upload timestamp, file name, and row count of each sheet) into SQLite database for maintaining a log.

6. Downloadable Output

Let users download the cleaned and processed Excel file with different sheets.

7. Summary Report

Create a short Word document summarizing the entire process and key insights.

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Submission Instructions

Please submit your completed pre-screening test as either:

- A ZIP file containing your project, or
- A Git repository link

You may choose whichever format is more convenient for you. Once ready, please email your submission back to us.