Rate Matching and Calculation

Background

A major part of what we do at Kuebix is our rate calculation algorithm. Your goal will be to write a simple matching algorithm that finds and calculates the correct rates given the origin and destination locations. The sort order is based on the calculated price.

Dataset provided

locations.csv: list of location addresses; each row is a possible origin and destination
rate_matching_criteria.csv: list of criteria that corresponds to location information and a rate.
rates.csv: list of rates; each row represents a rate for freight carrier.

Assignment

The shipment consists of an origin address, a destination address, and a list of items. Write an application that allows the user to enter this information in order to find and calculate the rates for a simple shipment. Rates should be returned when **either** the origin or the destination criteria is met.

You can use any third party libraries, but be prepared to discuss why you chose to use them.

A mechanism to search and retrieve the results must be provided. Based on your experience and the position you are applying for, this could mean one or more of the following: a single page application (SPA), a web application, or an API service with client (tests cases or scripts).

Walk Through

Note: The examples in this section are not using the dataset provided.
Example 1:
Origin: 5 Mill & Main Place Maynard, MA 01754
Destination: 100 Main St Beverly Hills, CA 90210
Line Items: Quantity: 4, Dimensions 48'x40'x48' Weight:1500 lb, Packaging Type: Pallet.

Matches:
Rate: $42.50, Carrier Name: Bix Express, Calculation Type: QUANTITY, ORIGIN
Rate: $0.25, Carrier Name: McMurphy National, Calculation Type: PER_POUND, DESTINATION

Result: Bix Express $170.00, McMurphy National $375.00

Example 2:
Origin: 5 Mill & Main Place Maynard, MA 01754
Destination: 100 Main St Beverly Hills, CA 90210
Line Items: Quantity: 1, Dimensions 48'x40'x48' Weight:1000 lb, Packaging Type: Pallet.
              Quantity: 5, Dimensions 10'x10'x10' Weight:50 lb, Packaging Type: Box.

Matches:
Rate: $0.27, Carrier Name: Bix Express, Calculation Type: PER_POUND, ORIGIN
Rate: $0.25, Carrier Name: McMurphy National, Calculation Type: PER_POUND, DESTINATION

Result: McMurphy National $262.50, Bix Express $283.50

Presentation

After a code review of your submission, you will participate in a discussion with other engineers who will discuss your solution, the integrity of your code and examine your thinking process.

Questions

If you have any questions or concerns, please email the hiring manager.

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