Team Cara Driven Project 1

Currency Converter

SCOPE

Create an interface that will allow a user to select 2 different currencies and an amount to be calculated.

SCOPE

Create an interface that will allow a user to select 2 different currencies and an amount to be calculated.

The currency ratio will come from an API and will be relatively "Live".

SCOPE

Create an interface that will allow a user to select 2 different currencies and an amount to be calculated.

The currency ratio will come from an API and will be relatively "Live".

A map will be displayed that will show all countries both currencies are circulated.

Features

- Supports 168 currencies.

- "Live" updates for currencies using the CurrencyLayer API

- "Smart" Caching for Currency Pair Calls

- Dynamic Map that will display all countries which will use selected currencies.
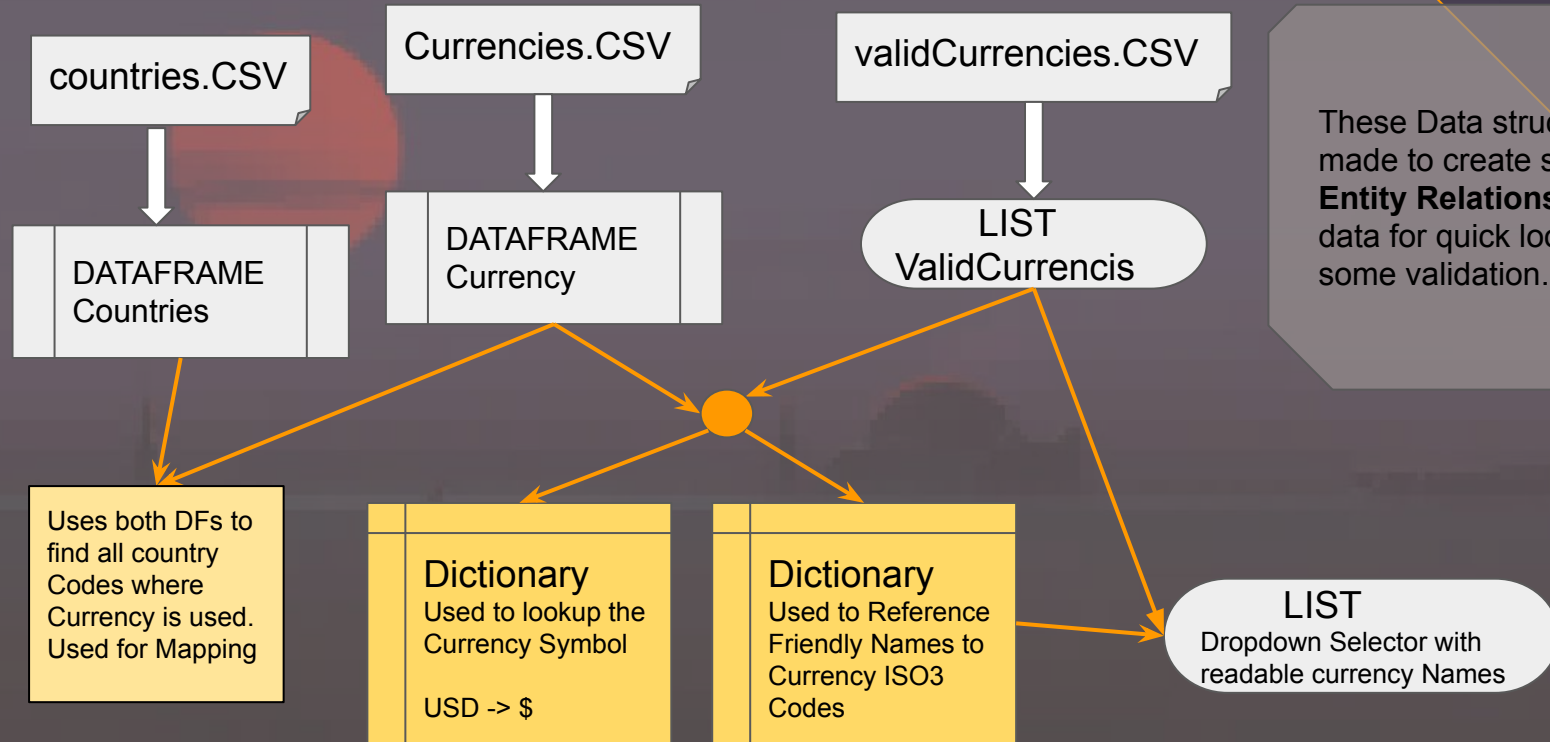
Main Components

Entity Relationship between countries, currencies, symbols, readable names and valid pairs for our API

Mapping Function	Currency Converter
Interface	

Breakdown

countries.CSV

Currencies.CSV

validCurrencies.CSV

These Data structures are made to create some basic **Entity Relationship** between data for quick lookups and for some validation.

DATAFRAME Countries

DATAFRAME Currency

LIST ValidCurrencis

Uses both DFs to find all country Codes where Currency is used. Used for Mapping

Dictionary
Used to lookup the Currency Symbol

USD -> $

Dictionary
Used to Reference Friendly Names to Currency ISO3 Codes

LIST
Dropdown Selector with readable currency Names

Initial Data

Currency Conversion

Top level function handles how the API call works, how to determine to pull from cache along with it's management.

advGetCurrencyPairRatio

- useCacheOrGetNew

- GetJsonFromCurrencyLayer

- extractPairRatioFromJson

- updateCache

Cache is a dictionary with the currency pair as a string and a list object with the currency ratio along with a timestamp.

Cache (DICTIONARY)

GBPUSD : [.07 , <timestampe>]
USDINR : [20.1 , <timestampe>]
USDEUR : [.92 , <timestampe>]
…
...

Use Case

- How would a potential traveler be able to track the cost of exchanging currencies before going on a trip?

- Are there any recent examples of a period when a particular currency pair changed rapidly?

Example

- The 2016 Brexit referendum led to a noticeable decline in the GBP relative to the USD

- During the 5-day period following vote, the USD strengthened versus the GBP roughly 9%

Figure

GBP/USD FX Rate — Days after Brexit the GBP weakened. Brexit 2020
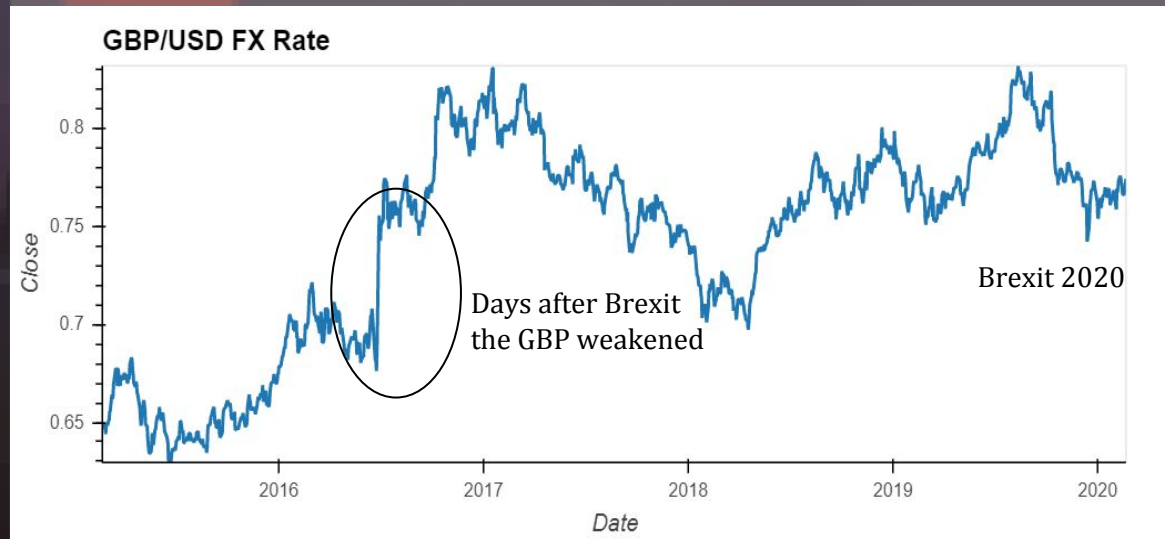
- Currency pairs may provide indicative levels of economic conditions, but do not fully account for all costs that a traveler may incur when estimating cross-border expenses.

Questions