

## **Objective:**

- In this take-home assignment, the goal is to create tests for the UI application attached to this email. Please implement both unit tests and end-to-end (E2E) tests as appropriate, following best practices.
- The project is configured to use Jest for unit tests and Cypress for E2E tests. For unit tests, you may also use a framework of your choice. For E2E tests, please use Cypress. Feel free to get creative and implement other types of tests as well. If you believe any aspect of the app needs modification to enhance testability, you are welcome to make those changes.
- For this task, you will be required to set up an API using Alpha Vantage. Instructions for setting it up can be found below.

## **Application Specification:**

### **Pages:**

#### **1. Card Page**

- The first page displays cards that show the following details:
  - Currency Pair
  - Exchange Rate
  - Last Fetched (Timestamp)
- The data for the currency pair and exchange rate is fetched from the Alpha Vantage API.
- The cards are styled using Material Design components (Material Cards).

#### **2. Grid Page**

- The second page features a grid with the following columns:
  - Currency Pair
  - Bid Price (6 decimal places)
  - Ask Price (6 decimal places)
  - Last Updated (MM/DD/YYYY hh:mm AM/PM)

- The data is also retrieved from the Alpha Vantage API.
- The grid is responsive and presents the data in a clear, structured format.

### API Data:

- You retrieve the following data from the Alpha Vantage API:
  - **Currency Pair:** The two currencies being exchanged (e.g., USD/EUR).
  - **Exchange Rate:** The current exchange rate between the currencies.
  - **Bid and Ask Prices:** The bid (buy) price and ask (sell) price.
  - **Last Updated:** A timestamp indicating when the data is last updated.

### Tech Stack:

- **Angular:** <https://angular.dev/>
- **Language:** TypeScript
- **UI Components Library:** <https://material.angular.io/>
- **Grid Data:** <https://www.ag-grid.com/>
- **Data API:** Alpha Vantage - Free Stock APIs in JSON & Excel | [Alpha Vantage](#)

### Alpha Vantage - How to Retrieve an API Key:

- **Example API:** [https://www.alphavantage.co/query?function=CURRENCY\\_EXCHANGE\\_RATE&from\\_currency=USD&to\\_currency=JPY&apikey=demo](https://www.alphavantage.co/query?function=CURRENCY_EXCHANGE_RATE&from_currency=USD&to_currency=JPY&apikey=demo)
- **Getting an API Key:** Go to [www.alphavantage.co](https://www.alphavantage.co) and follow the steps provided.



alphavantage.co/support/#api-key

Alpha Vantage Support

Claim your API key

Support

## Claim your Free API Key

Claim your free key for the [Alpha Vantage Stock API](#) with lifetime access. We highly recommend that you use a legitimate email address - this is the primary way we will contact you for feature announcements or troubleshooting (e.g., if you lose your API key). By acquiring and using an Alpha Vantage API key, you agree to our [Terms of Service](#) and [Privacy Policy](#).

Which of the following best describes you?

Other

Organization (e.g. company, university, etc.):

Any

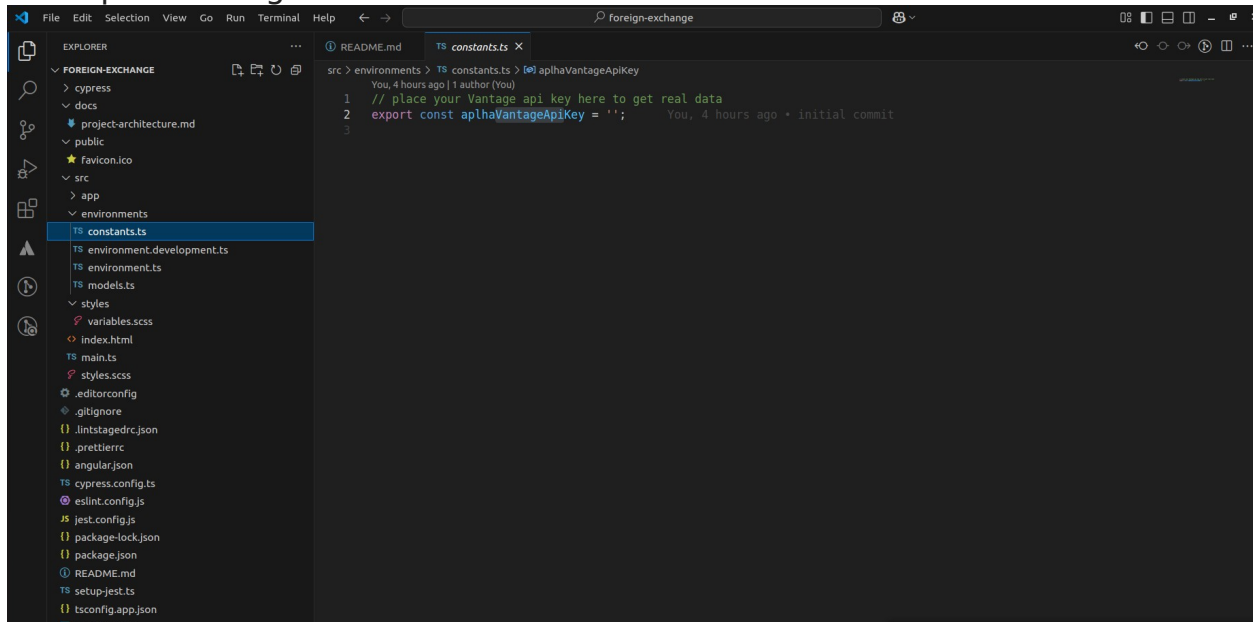
Email:

your.email@gmail

GET FREE API KEY

Welcome to Alpha Vantage! Here is your API key: YOURKEYWILLBEHERE. Please record this API key at a safe place for future data access.

In the code, you will find a file located at `src/environments/constants.ts`. Just paste your code there, and the app will automatically request data from the Alpha Vantage API.



The screenshot shows a Visual Studio Code editor with a project named 'FOREIGN-EXCHANGE'. The file explorer on the left shows the project structure, including a 'src' directory with an 'environments' folder. The 'constants.ts' file is selected and open in the editor. The code in the file is as follows:

```
src > environments > TS constants.ts > alphaVantageApiKey
You, 4 hours ago | 1 author (You)
1 // place your Vantage api key here to get real data
2 export const alphaVantageApiKey = ''; You, 4 hours ago - initial commit
```