

Alpha Vantage API Tutorials

Alpha Vantage Stock and Crypto Market API

- Provides real-time and historical financial data for various asset classes, including stocks, cryptocurrencies, forex, and technical indicators.
- We will use it throughout Module 3 in lectures, labs, and assignments.

<https://www.alphavantage.co/documentation/>

API request example

`https://www.alphavantage.co/query?`

`function=DIGITAL_CURRENCY_DAILY&symbol=BTC&market=EUR&apikey=demo`

Base URL: `https://www.alphavantage.co`

Path: `/query`

Query parameters:

- `function`: DIGITAL_CURRENCY_DAILY
- `symbol`: BTC
- `market`: EUR
- `apikey`: demo

API response example

```
{
  "Meta Data": {
    "1. Information": "Daily Prices and Volumes for Digital Currency",
    "2. Digital Currency Code": "BTC",
    "3. Digital Currency Name": "Bitcoin",
    "4. Market Code": "EUR",
    "5. Market Name": "Euro",
    "6. Last Refreshed": "2024-11-11 00:00:00",
    "7. Time Zone": "UTC"
  },
  "Time Series (Digital Currency Daily)": {
    "2024-11-11": {
      "1. open": "74780.73000000",
      "2. high": "76000.00000000",
      "3. low": "74639.10000000",
      "4. close": "75653.75000000",
      "5. volume": "20.70191291"
    },
    "2024-11-10": {
      "1. open": "71562.42000000",
      "2. high": "75699.99000000",
      "3. low": "71388.80000000",
      "4. close": "74757.19000000",
      "5. volume": "760.24717970"
    },
    ...
  }
}
```

Query parameters for digital currency daily

- `function`
- `symbol`
- `market`
- `apikey`
 - Your API key is required to access the Alpha Vantage API **without rate limits**
 - **Replace `demo` with your own API key (check your email)**

DIGITAL_CURRENCY_DAILY

This API returns the daily historical time series for a cryptocurrency (e.g., BTC) traded on a specific market (e.g., EUR/Euro), refreshed daily at midnight (UTC). Prices and volumes are quoted in both the market-specific currency and USD.

API Parameters

■ Required: `function`

The time series of your choice. In this case, `function=DIGITAL_CURRENCY_DAILY`

■ Required: `symbol`

The cryptocurrency of your choice. It can be any of the "from" currencies in the [cryptocurrency list](#). For example: `symbol=BTC`.

■ Required: `market`

The exchange market of your choice. It can be any of the "to" currencies in the [cryptocurrency list](#). For example: `market=EUR`.

■ Required: `apikey`

Your API key. Claim your free API key [here](#).

Get daily time series for Polygon (POL) in USD market

Base URL: `https://www.alphavantage.co`

Path: `/query`

Query parameters:

- `function`: DIGITAL_CURRENCY_DAILY
- `symbol`: POL
- `market`: USD
- `apikey`: your_api_key_here



List of closing prices for Polygon (POL) in USD market

1. Make a request to the Alpha Vantage API to get daily time series for Polygon (POL) in USD market
2. Print the date and closing price for each data point



Get Income Statements of NVIDIA

1. Identify the relevant API endpoint and necessary parameters to get the income statements of NVIDIA (ticker symbol: NVDA).
2. Make the API call using Python's requests library.
3. Process the JSON response to extract ebitda values for the last 5 years.
4. Print the results.



Alpha Vantage API: What else can we build?

1. Form teams of three or four.
2. Review the Alpha Vantage documentation and explore the available API endpoints.
3. Brainstorm interesting questions or insights you can generate using the API.
 - Use **at least** two different endpoints (e.g., stock price and commodity price).
4. Implement your idea in Python:
 - Identify the relevant API endpoint(s) and necessary parameters.
 - Make API calls.
 - Process the JSON response to extract useful information.
 - Print your results.