API Mania!

FinTech

Lesson 5.2

Class Objectives

By the end of today's class, you will be able to:

- Register for an API key & use it to fetch authenticated requests using the Requests Library.
- Set/Export environment variables in Windows and Mac and retrieve them in Python.
- Explain the difference between an API and SDK.
- Set authentication for a Python SDK.
- Use a Python SDK to fetch financial data.
- Use SDKs to analyze personal financial data.

The Rise of APIs

APIs in FinTech

There are a number of FinTech APIs available that grant users the ability to create and execute analytic pipelines on various forms of financial data.

Because APIs often offer practical services, they may require subscriptions or payment.

API Keys

API Keys

API keys are like keys to a house or car: they’re used to get access to resources.

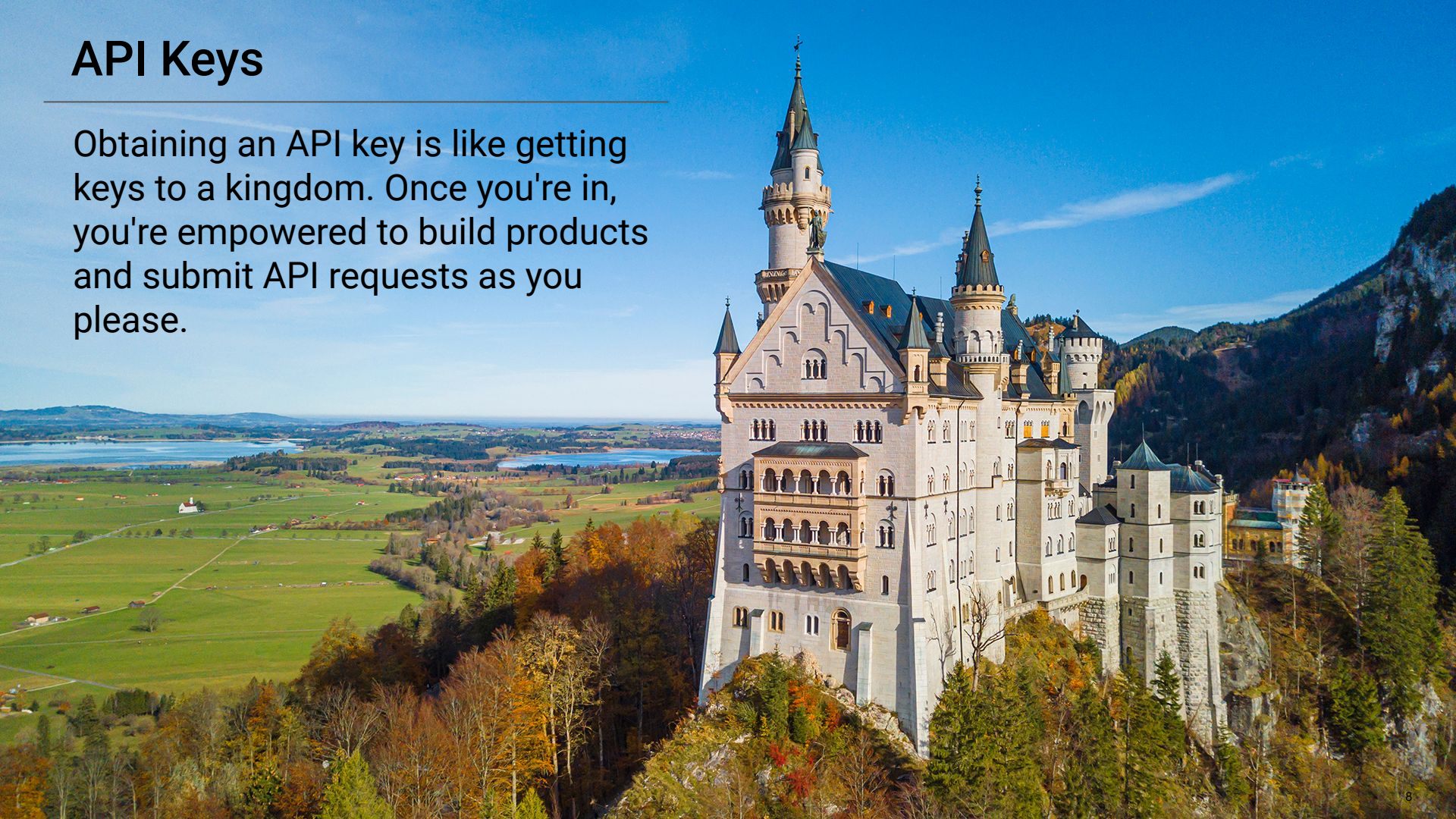
A key must be provided with every request for APIs that require keys.

API Keys

Companies use API keys as a means to secure data, as well as monitor traffic. Using keys in this manner allows companies to limit and block requests as needed.

API Keys

Obtaining an API key is like getting keys to a kingdom. Once you're in, you're empowered to build products and submit API requests as you please.



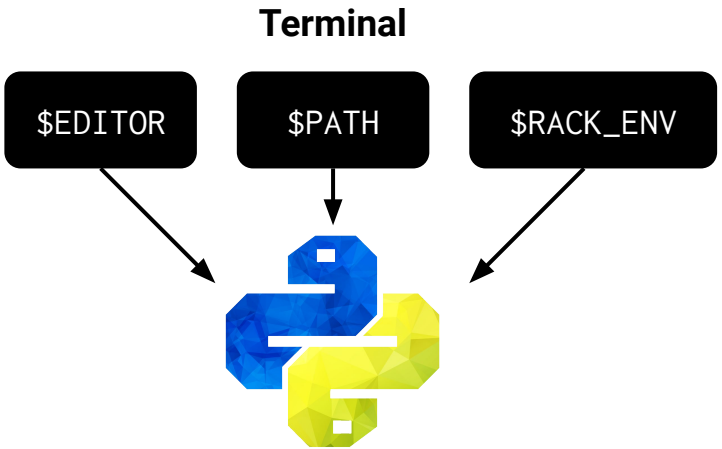
Environment Variables

Environment Variables

API keys are accessed when stored as environment variables.

Environment Variables

Child process gets copies of parent's environment variables



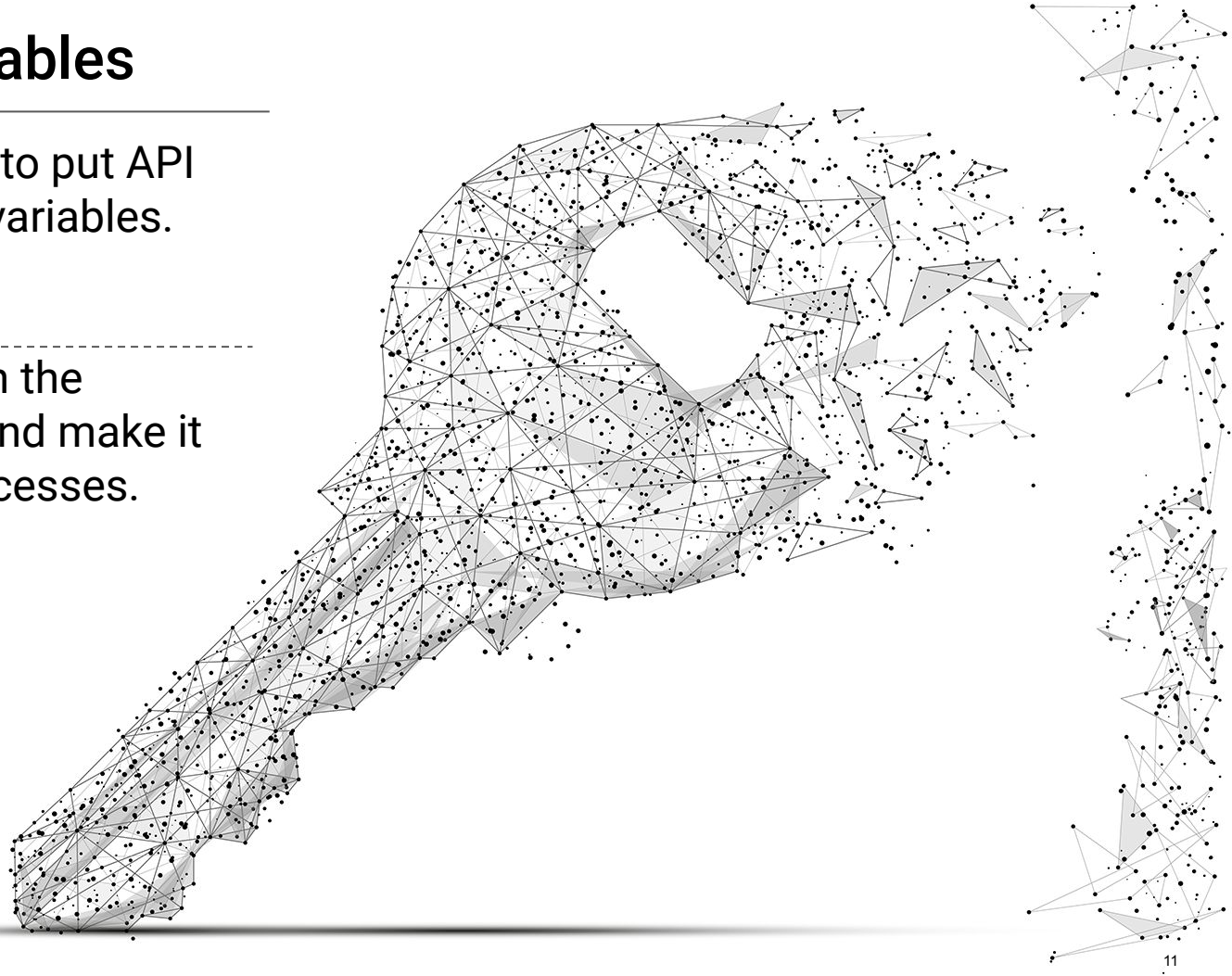
Local Variables

Child process doesn't get any copies of local variables

Environment Variables

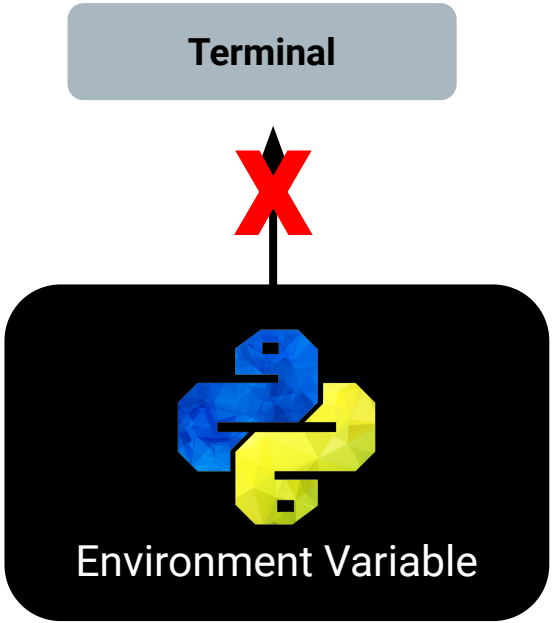
A `.env` file can be used to put API keys into environment variables.

The `.env` file will contain the environment variable, and make it accessible by child processes.

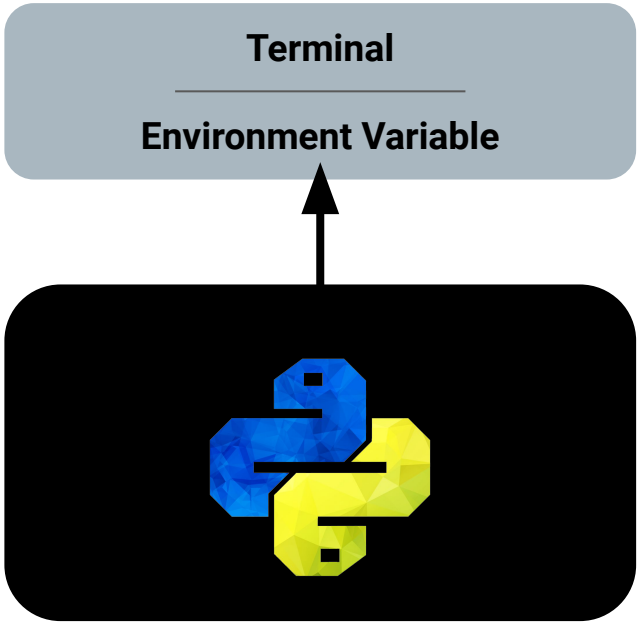


Environment Variables

An environment variable created in Python **cannot** be accessed by a terminal.

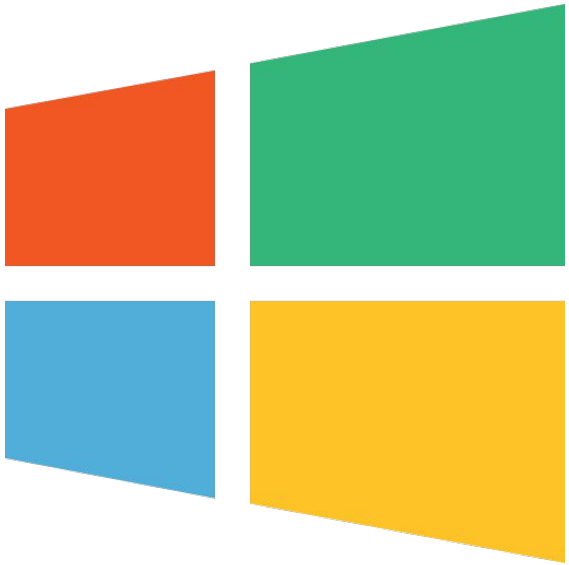


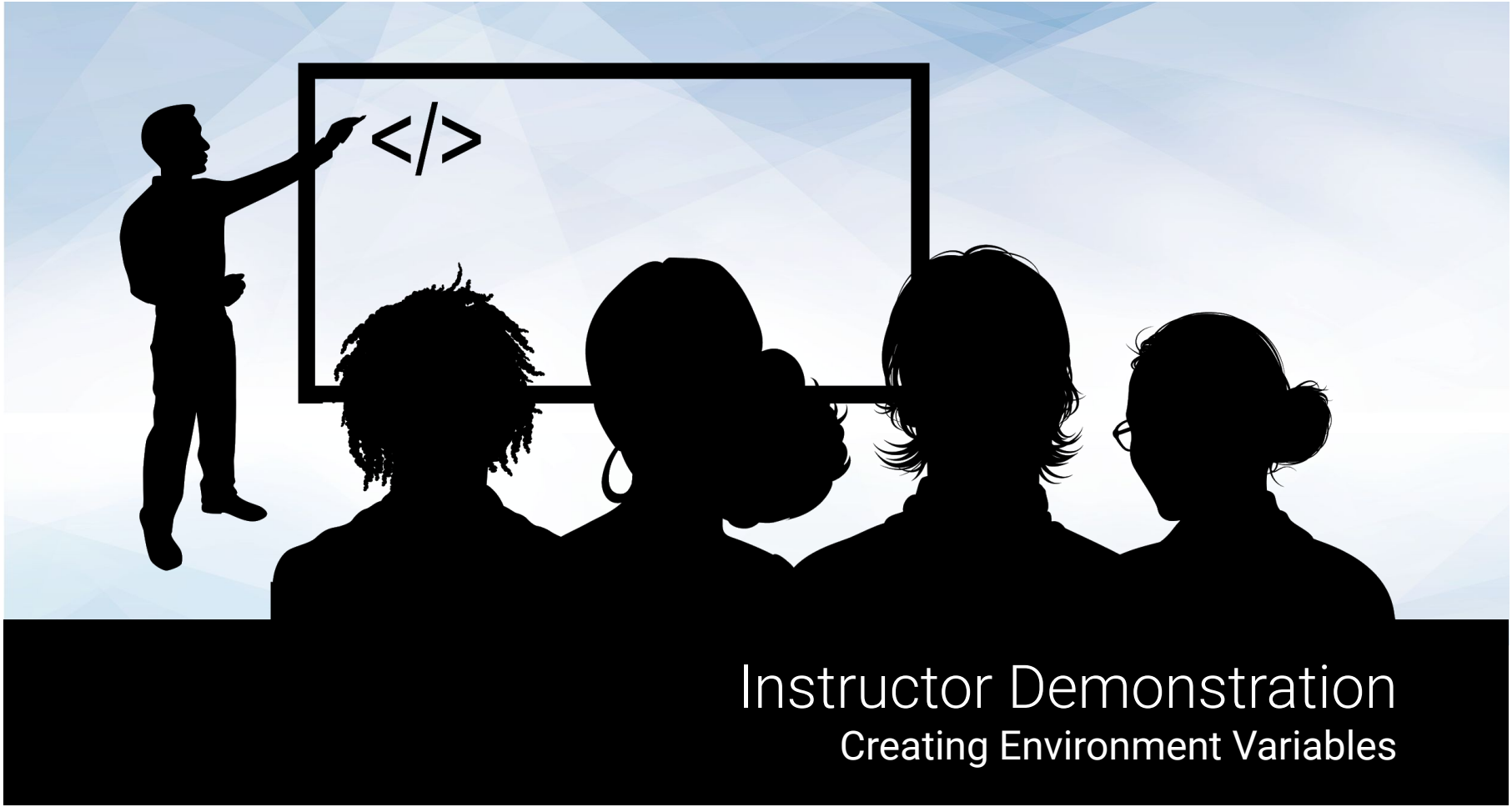
An environment variable created in a terminal **can** be accessed by Python.



Environment Variables

Because environment variables are at the **operating system level**, variables can be passed down from parent processes to child processes.





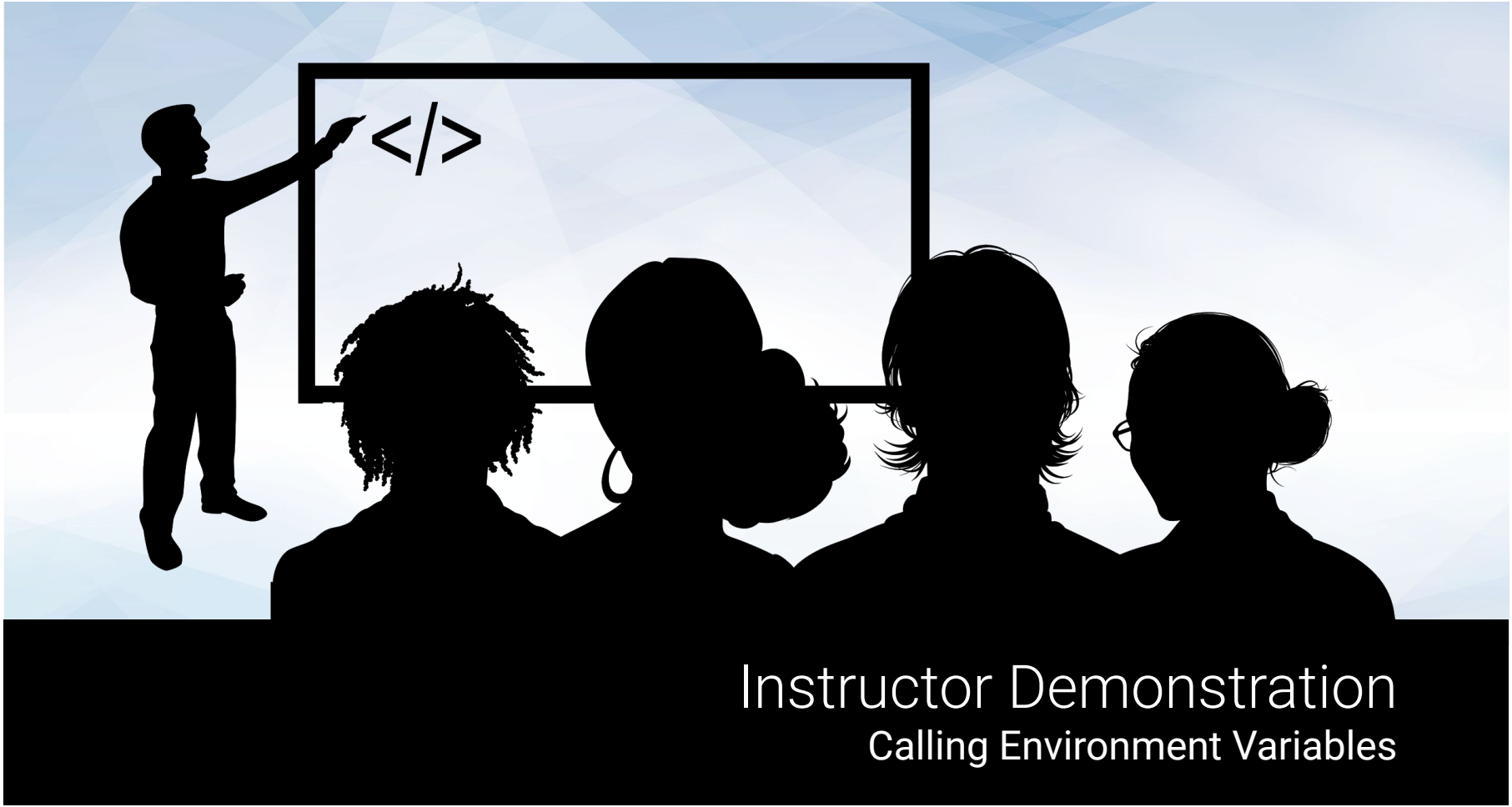
Instructor Demonstration

Creating Environment Variables

Calling Environment Variables

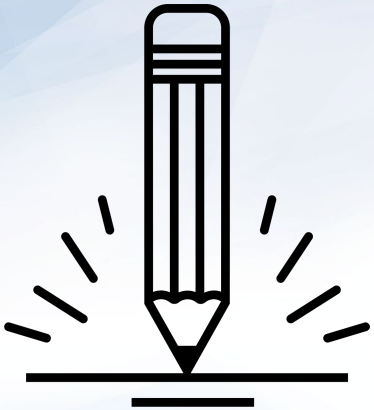
In order to make environment variables inheritable, they have to be exported and sourced.

```
Api_key = os.getenv()
```



Instructor Demonstration

Calling Environment Variables



Activity: Under Lock and Key

In this activity, you will create a Python code that retrieves the environment variable and passes the key with the request URL.
(Instructions sent via Slack.)

Suggested Time:
20 minutes

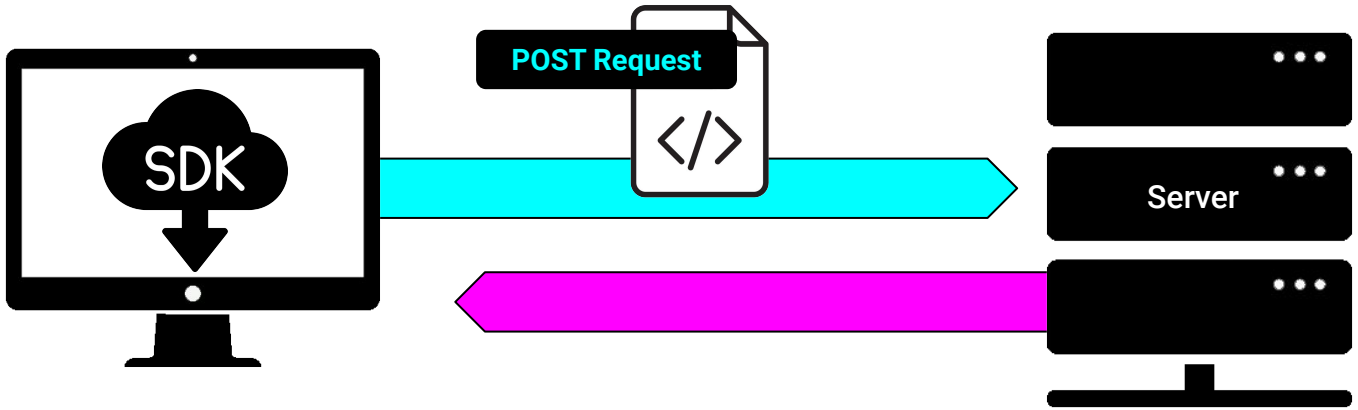
Time’s Up! Let’s Review.

SDKs


Break

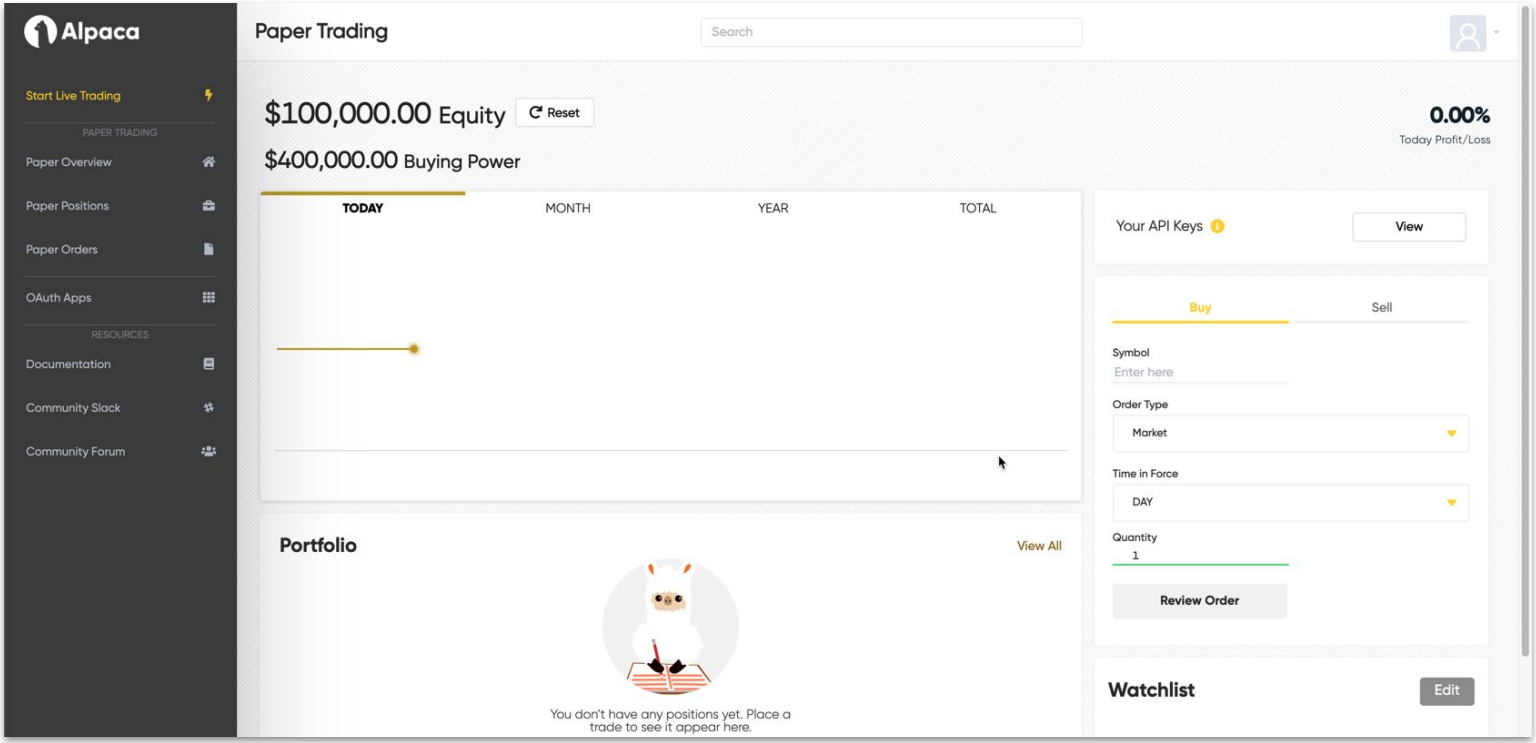
SDKs

SDKs work in the same fashion as the Python requests library: they provide functions to submit GET and POST API requests.



SDKs

Some companies, like Alpaca, offer Software Development Kits as a means to submit requests to their APIs.



SDKs

In addition to the generic GET and POST functions though, SDKs offer functions that are specific to their services/API. For example, the Quandl SDK lets you execute a function that returns historical stock prices.

```
# Using the Python requests library
requests.get("https://www.quandl.com/api/v3/datasets/WIKI/AMD?api_key=1A3")

# Using the Quandl SDK
quandl.get("WIKI/AMD", rows=5)
```

Introduction to Alpaca

What is Alpaca

Alpaca is a trading API that encapsulates banking, security, and regulatory complexity, allowing FinTech startups to build brokerage apps on top for free quickly.

As a FinTech professional, you can use Alpaca to fetch current stock market data free of charge from five different exchanges (IEX, NYSE National, NYSE Chicago, Nasdaq BX, and Nasdaq PSX).

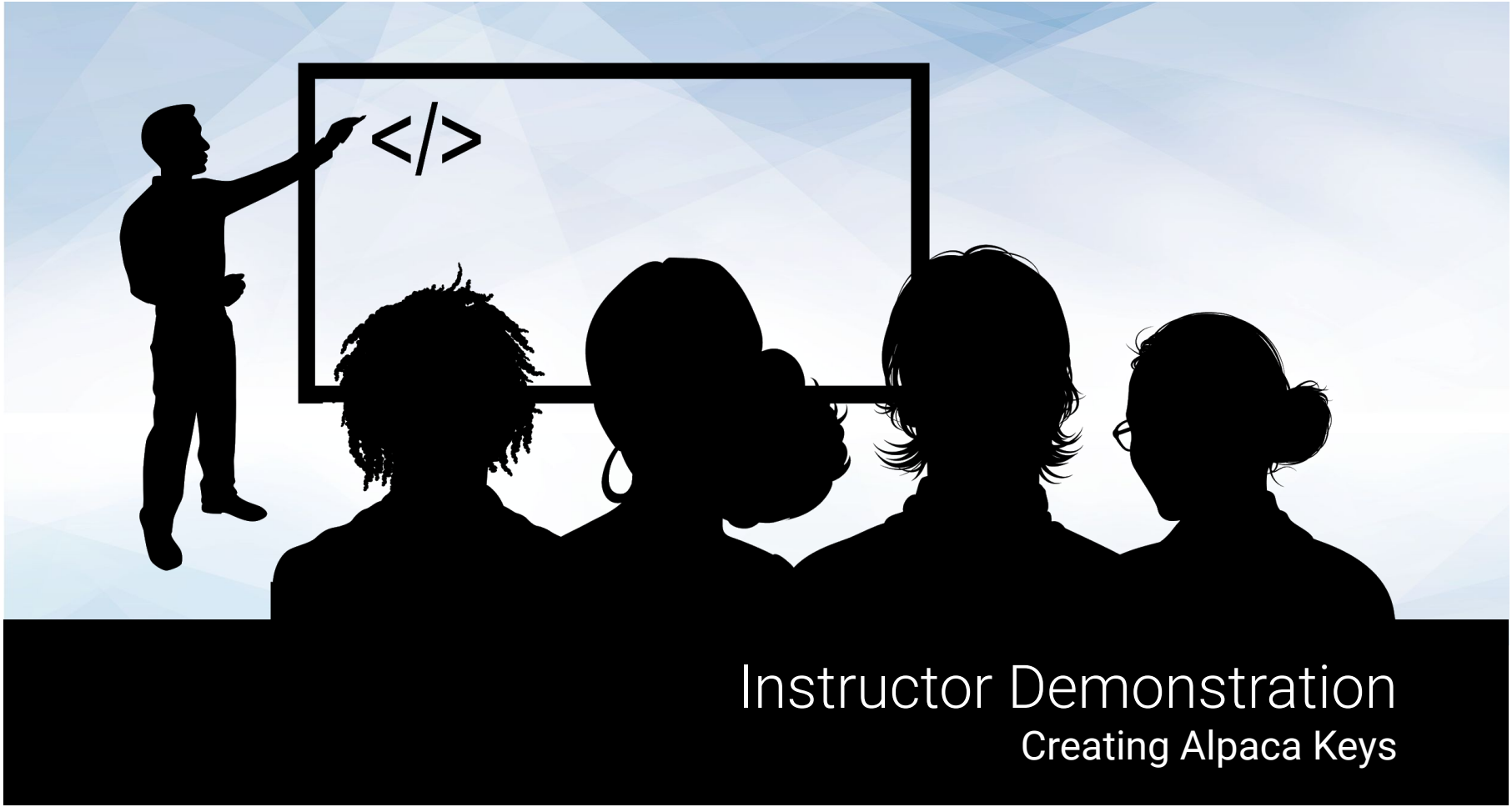
Installing Alpaca Python SDK

The Alpaca Python SDK can be downloaded using pip-install:

```
pip install alpaca-trade-api
```

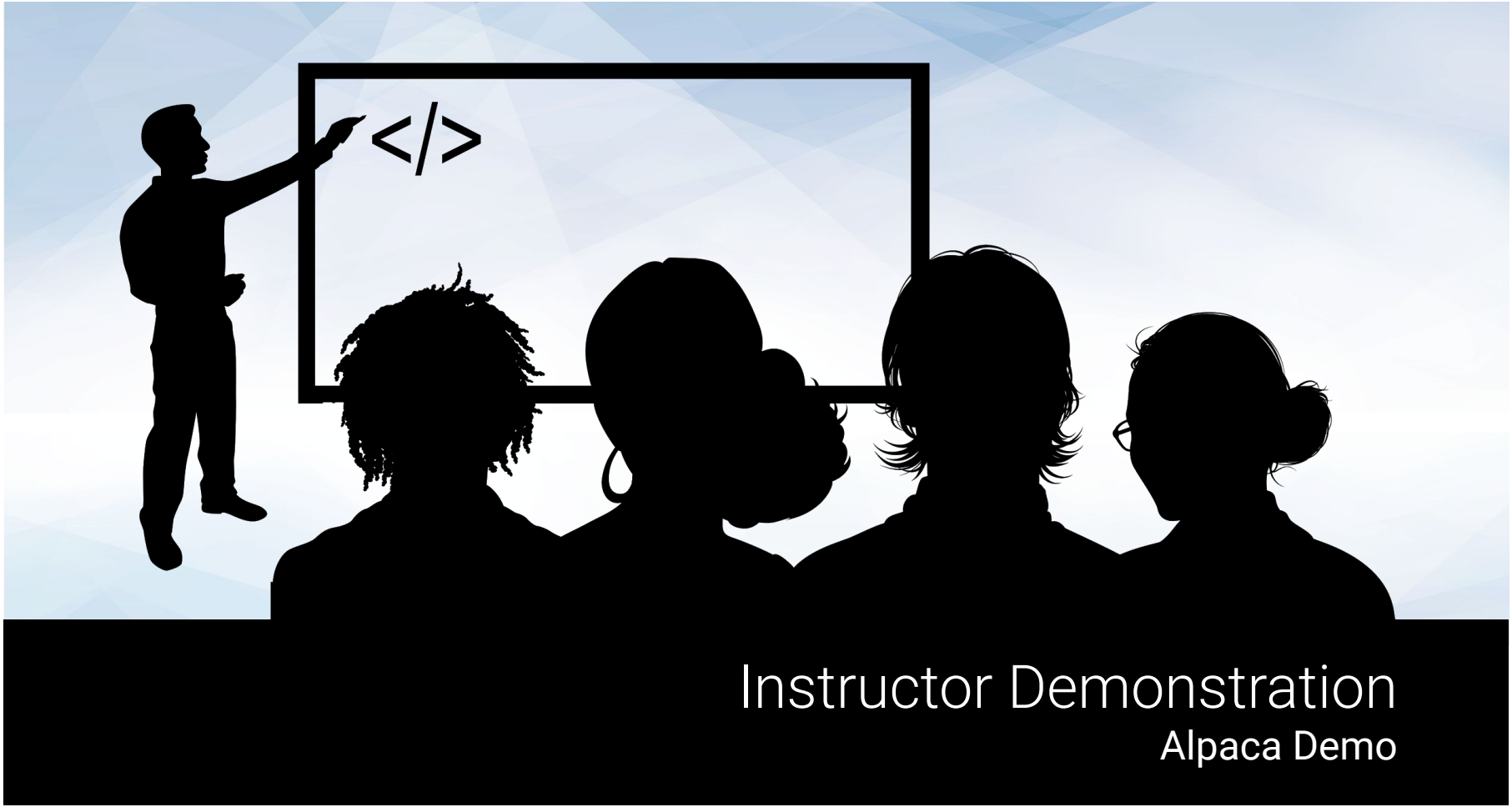
You need to sign-up for Alpaca to create your Alpaca keys.

Remember, it's important to store your Alpaca keys into your `.env` file.



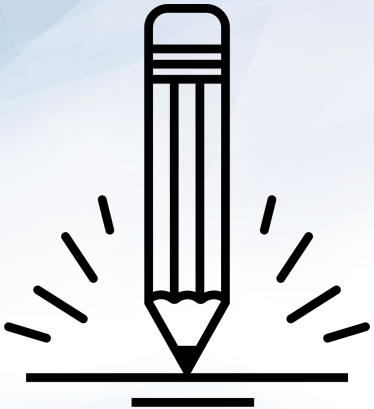
Instructor Demonstration

Creating Alpaca Keys



Instructor Demonstration

Alpaca Demo



Activity: Investment Value

In this activity, you will use the Alpaca SDK to calculate the present value of a stock portfolio.
(Instructions sent via Slack.)

Suggested Time:
20 minutes

Time’s Up! Let’s Review.

Questions?


The End