Lesson 1: Setup & First API Call

Objective:

The goal of this lesson is to introduce you to the process of setting up your environment and making your first API call. You'll understand how APIs work, how to authenticate with them, and how to retrieve data.

Key Concepts:

- **API (Application Programming Interface):** A set of rules that allows different software applications to communicate with each other. APIs define the methods and data formats that applications can use to communicate.
- **API Key:** A unique identifier used to authenticate and gain access to the API. It serves as a form of security to ensure that the user has permission to access the service.
- **HTTP Methods:**
    - **GET:** Retrieves data from the server.
    - **POST:** Sends data to the server to create a new resource.
    - **PUT:** Updates a current resource on the server.
    - **DELETE:** Deletes a resource from the server.

Application:

1. **Setting Up the Environment:**
    - Install necessary libraries (e.g., requests in Python).
    - Install other dependencies if required by the API.
    - Set up your IDE or code editor of choice.
2. **API Authentication:**
    - Register for an API key from the API provider.
    - Learn how to keep API keys secure and avoid hard-coding them directly into your code (use environment variables).
3. **Making the First API Call:**
    - Write a simple script to make a **GET** request to retrieve data from the API.
    - Learn how to handle the response, which is usually in **JSON** format.
4. **Parsing the Response:**
    - Extract useful information from the response by using JSON parsing.

Example:

python
CopyEdit
```
import requests
# Set up the API URL and API Key
url = "https://api.example.com/data"
headers = {"Authorization": "Bearer YOUR_API_KEY"}
```

```
# Make a GET request
response = requests.get(url, headers=headers)
# Check the status codeif response.status_code == 200:
    print("Success! Here's the data:", response.json())else:
    print("Error:", response.status_code)
```