Program to Create and Update Plots w/ API

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You need: **1. API key from data source**

2. GitHub token for repository

3. Website to show the plot

To acquire an API key

Visit the website for your data source to obtain an API (or ask ChatGPT for a link). Many US government sources that provide data also provide APIs. API stands for Application Programming Interface and it retrieves data for you from a data source.

For instance, the Bureau of Labor Statistics (BLS) offers an API for you to easily retrieve the most recent inflation data. You send a request to BLS, the BLS server processes it, and you get a response. There's no need to manually download spreadsheets when BLS updates inflation data - just use your API to retrieve it.

Be sure to save the API key in a safe place and do not share it.

GitHub

ChatGPT describes GitHub as a "Google Drive for code, but with powerful tools for tracking changes, working with teams, and publishing software". The project folders in GitHub are called repositories (repos). When you make changes to files in a repo, you can save them with a commit.

To generate a GitHub token

- Create an account/log in to GitHub
- Create a new repository -> Copy the URL for the new repository and save it.
- Generate a GitHub personal access token (PAT), copy the token, and save it.
    - Profile icon -> Settings -> Developer settings -> Personal access tokens -> Tokens (classic) -> Generate new token (classic) -> Enter description in Note -> Choose expiration (30 days default) -> select scopes (permissions) -> repo -> Generate token -> Copy
- Use "getpass" in import block and paste when asked.

Note: The personal access tokens apply to you as a GitHub user across all repos. The next section with GitHub Pages points you to settings under a specific repo.

GitHub Pages

GitHub's repository stores code and files, but GitHub Pages acts like a web server. People can visit the files in your repository with GitHub Pages, but GitHub needs an index.html file to serve them as a website. The index.html file will display the repository file (plot) correctly to visitors.

To create the index.html file

- In your repository, create a new file -> paste the code below -> name the file "index.html" -> Commit changes
- Note: index.html is in the "main" branch.

```
<!DOCTYPE html>
<html>
<head>
  <title>Inflation Plot</title>
</head>
<body>
  <h1>US Inflation Plot</h1>
  <p>Below is the latest CPI inflation chart:</p>
  <img src="inflation_plot.png" alt="Inflation plot" width="800">
</body>
</html>
```

To publish with GitHub Pages:

- Go to your repo on GitHub.
- Settings → Pages →
  - Source: Select main branch, / (root) folder.
  - Save.
- GitHub gives you a site link. Here's the general form and my specific site link for the project in the video:
  - https://<your-username>.github.io/<repo-name>
  - https://lenzeric.github.io/ytplot/
- After you run the program, you'll get a link to the plot. Embed this link in your website.
  - My link from the video: https://raw.githubusercontent.com/lenzeric/ytplot/main/inflation_plot.png

Run the Colab!

https://colab.research.google.com/drive/1TZlf0NAGtVTMTjb0qd9tC7UAhWZThfBr?usp=sharing

Host the plot on your website (ex. Google Sites)

On Google Sites you can embed a link to the plot which is found in your GitHub repository. You do this through GitHub Pages. The plot will update itself with the new data when you run the Python program in Colab.

- In your Google Sites editor, go to the section where you want to display the plot.
- Select Insert -> Image.
- Choose By URL (it's an option for embedding images from links).
- Paste the raw URL (from the Colab output) directly into the URL field.
- Save and publish your changes!