



Power Query: Strava API

D-LLOYD AGENCIES



Connect the Strava API in Power Query

- I like to run 
- I don't like paying for premium 
- So, I connected all of my workouts in Strava to an Excel sheet using the API connector
 - It's Power Query so it can also be used in Power BI

Data Security

- I don't feel like editing several images/videos and blocking out my secret keys and unique ids.
- I'm going to make a temporary Strava account and immediately delete it to show where to real API keys
- There are likely better practices than putting passwords directly in your code.
 - I don't know them, so ask someone smarter than I am.

1. Set up the Strava API

- Go to

<https://www.strava.com/settings/api>


My API Application

Create An Application


[API Documentation](#)

Application Name

Category

Select...

Club

Select...

Website

Application Description

Authorization Callback Domain

☐ I've read and agree with [Strava's API Agreement](#)

1. Set up the Strava API: Settings

Field	Data Entry
Application Name	Whatever you want
Category	Other, Data Importer, 🧑
Club	[None]
Website	http://localhost
Application Description	Whatever you want
Authorization Callback Domain	developers.strava.com

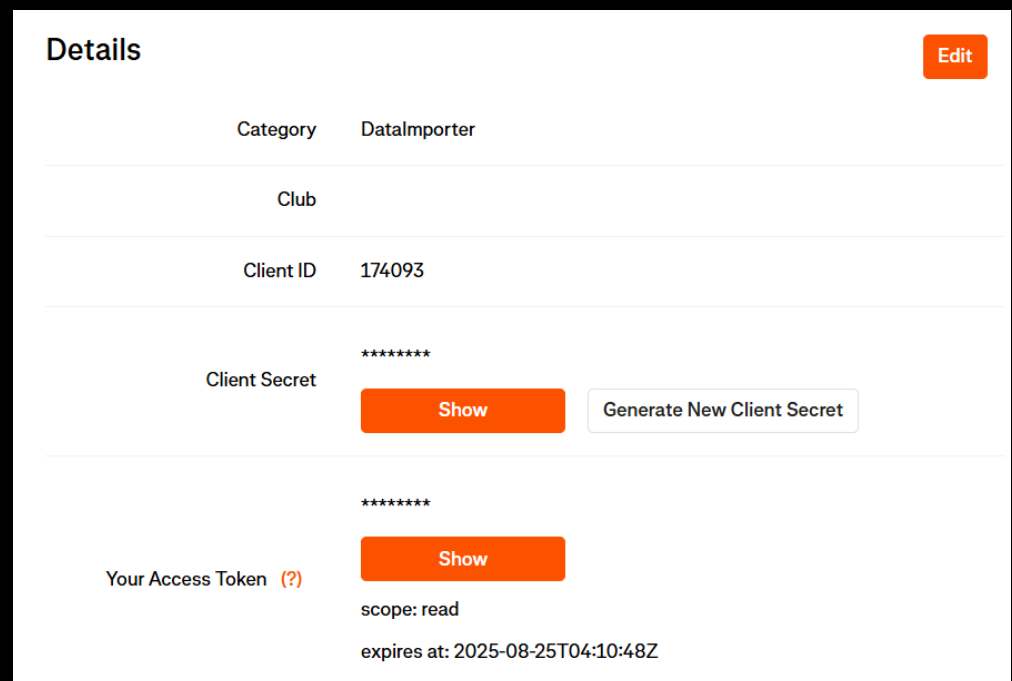
1. Set up the Strava API: Settings

- After clicking the checkmark for the agreement and clicking create, I was told that my app needed a logo.

- I uploaded a random picture.

- Now

<https://www.strava.com/settings/api>
looks like this



The screenshot shows the 'Details' page for a Strava API application. The page has a white background with a light gray border. At the top right, there is an orange 'Edit' button. The main content area is divided into several sections by horizontal lines. The first section shows 'Category' as 'DataImporter'. The second section shows 'Club' as an empty field. The third section shows 'Client ID' as '174093'. The fourth section shows 'Client Secret' as a masked string '*****', with a 'Show' button and a 'Generate New Client Secret' button. The fifth section shows 'Your Access Token' as a masked string '*****', with a 'Show' button. Below the access token, it shows 'scope: read' and 'expires at: 2025-08-25T04:10:48Z'.

Details		Edit
Category	DataImporter	
Club		
Client ID	174093	
Client Secret	***** Show Generate New Client Secret	
Your Access Token (?)	***** Show scope: read expires at: 2025-08-25T04:10:48Z	

2. Find All the Authorization Tokens

- I don't know how APIs work. This is a tutorial, not a class.
- There's a constantly refreshing authorization code that you need to find.
- To get it, you will need to use your "Client ID"
 - Ex) 174093

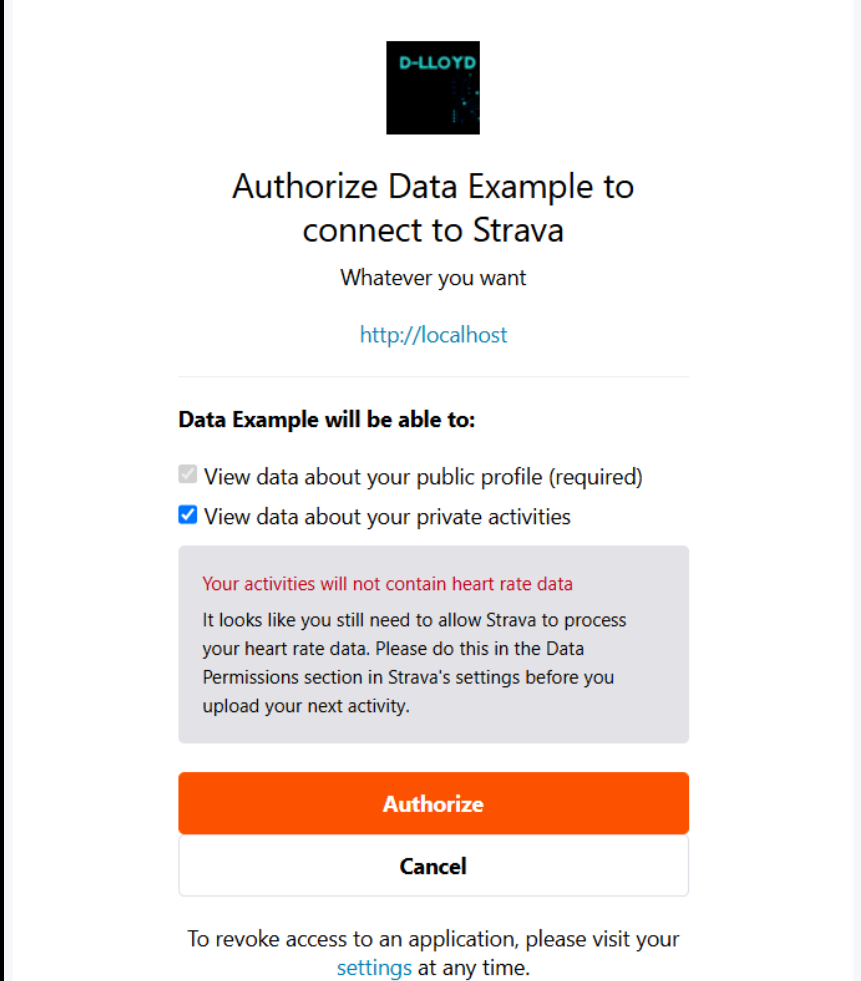
Category	DataImporter
Club	
Client ID	174093

2. Find All the Authorization Tokens

- Get authorization code from authorization page. This is a one-time, manual step.
- Paste the below code in a browser, hit enter then grab the "code" part from the proceeding url.
 - [https://www.strava.com/oauth/authorize?client_id=174093&redirect_uri=http://localhost&response_type=code&scope=activity:read_all](https://www.strava.com/oauth/authorize?client_id=<u>174093</u>&redirect_uri=http://localhost&response_type=code&scope=activity:read_all)
- Notice I put my Client ID in the underlined part

2. Find All the Authorization Tokens

- To get this “read all” token click Authorize on this page



The screenshot shows a Strava authorization page for an application named 'D-LLOYD'. The page has a white background with a light gray border. At the top, there is a black square icon with the text 'D-LLOYD' in white. Below the icon, the text 'Authorize Data Example to connect to Strava' is centered. Underneath, it says 'Whatever you want' and provides the URL 'http://localhost'. A horizontal line separates this section from the permissions section. The permissions section is titled 'Data Example will be able to:' and contains two checkboxes. The first checkbox is checked and labeled 'View data about your public profile (required)'. The second checkbox is also checked and labeled 'View data about your private activities'. Below the checkboxes, there is a gray box with a red warning message: 'Your activities will not contain heart rate data'. The message explains that the user needs to allow Strava to process heart rate data in the Data Permissions section of Strava's settings. At the bottom of the form, there are two buttons: an orange 'Authorize' button and a white 'Cancel' button with a gray border. Below the buttons, there is a link to 'settings' for revoking access.

D-LLOYD

Authorize Data Example to
connect to Strava

Whatever you want

<http://localhost>

Data Example will be able to:

- ☒ View data about your public profile (required)
- ☒ View data about your private activities

Your activities will not contain heart rate data

It looks like you still need to allow Strava to process your heart rate data. Please do this in the Data Permissions section in Strava's settings before you upload your next activity.

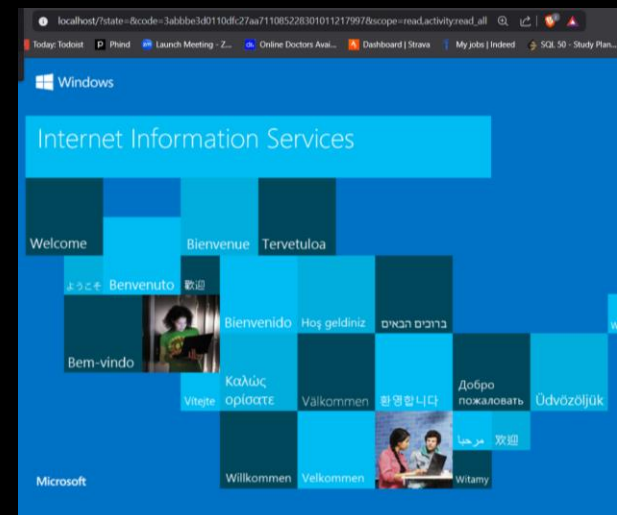
Authorize

Cancel

To revoke access to an application, please visit your [settings](#) at any time.

2. Find All the Authorization Tokens

- There's a code in the URL in the page that "fails".
- The URL returned:
 - http://localhost/?state=&code=3abbbe3d0110dfc27aa711085228301011217997&scope=read,activity:read_all
- So the “read all” code is:
 - 3abbbe3d0110dfc27aa711085228301011217997



2. Find All the Authorization Tokens

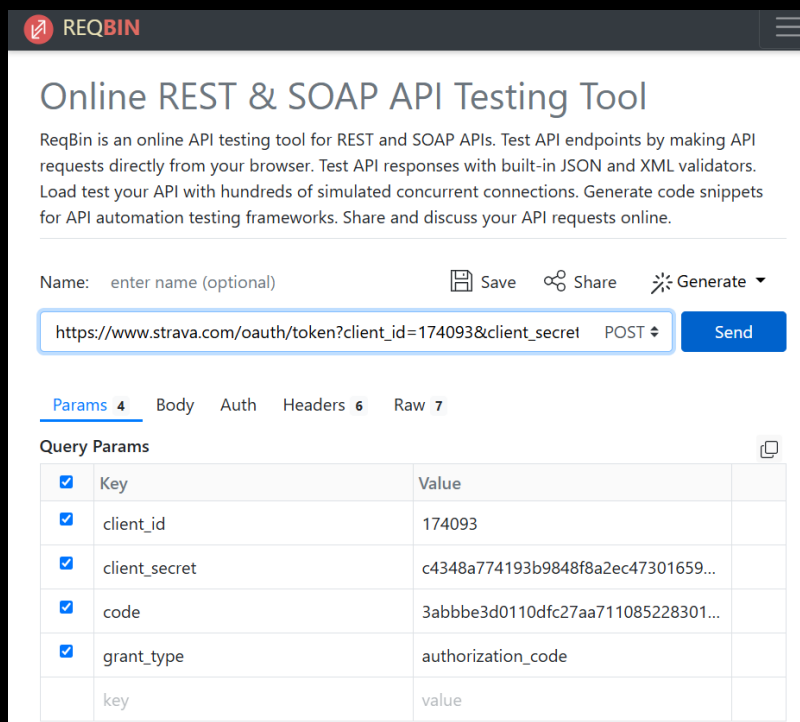
- Next my notes say:
 - Exchange authorization code for access token & refresh token
- [https://www.strava.com/oauth/token?client_id=your client id&client_secret=your client secret&code=your code from previous step&grant_type=authorization_code](https://www.strava.com/oauth/token?client_id=<u>your client id</u>&client_secret=<u>your client secret</u>&code=<u>your code from previous step</u>&grant_type=authorization_code)
- Everything underlined needs to be manually entered.

2. Find All the Authorization Tokens

- Exchange authorization code for access token & refresh token
- My real link will look like this:
 - https://www.strava.com/oauth/token?client_id=174093&client_secret=c4348a774193b9848f8a2ec4730165923b41c9cb&code=3abbbe3d0110dfc27aa711085228301011217997&grant_type=authorization_code
- Find the Client Secret on <https://www.strava.com/settings/api>

2. 2. Find All the Authorization Tokens

- “Exchange authorization code for access token & refresh token.”
- Take the url you created on the previous slide and go to <https://reqbin.com/>.
- Paste the URL in there and set it to POST

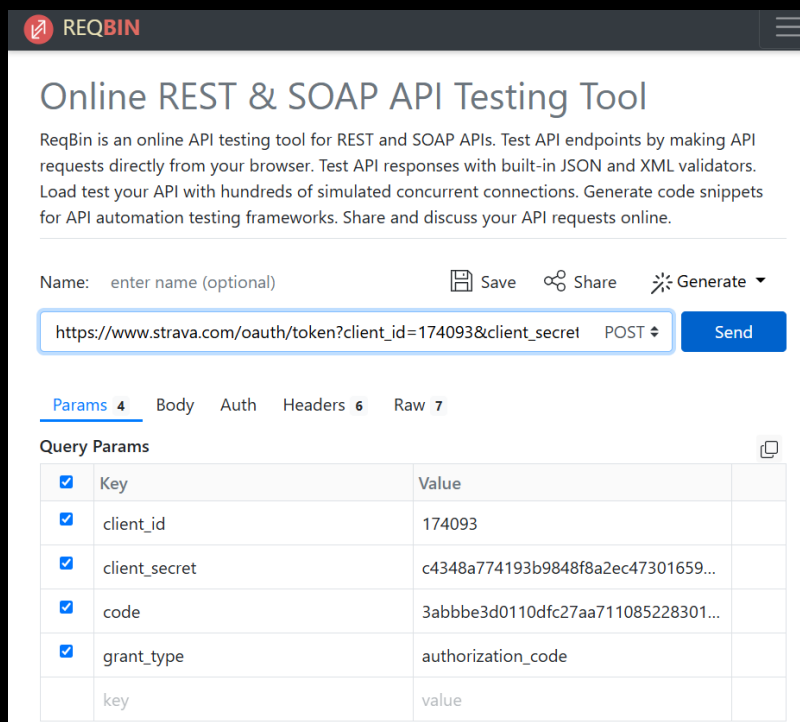


The screenshot shows the ReqBin web interface. At the top, there's a header with the ReqBin logo and a hamburger menu. Below the header, the title "Online REST & SOAP API Testing Tool" is displayed, followed by a brief description of the tool's capabilities. A form for creating a new request is visible, including a "Name" field, "Save", "Share", and "Generate" buttons. The "URL" field contains the URL "https://www.strava.com/oauth/token?client_id=174093&client_secret", and the "Method" dropdown is set to "POST". A "Send" button is next to the URL field. Below the form, there are tabs for "Params", "Body", "Auth", "Headers", and "Raw". The "Params" tab is active, showing a table of query parameters.

<input checked="" type="checkbox"/>	Key	Value	
<input checked="" type="checkbox"/>	client_id	174093	
<input checked="" type="checkbox"/>	client_secret	c4348a774193b9848f8a2ec47301659...	
<input checked="" type="checkbox"/>	code	3abbbe3d0110dfc27aa711085228301...	
<input checked="" type="checkbox"/>	grant_type	authorization_code	
	key	value	

2. Find All the Authorization Tokens

- If the url you created on the previous slide does not work, you may have to get a new read_all code from slide 10
- Paste the URL in there and set it to POST



The screenshot shows the ReqBin web interface for testing REST and SOAP APIs. The URL bar contains a POST request to the Strava OAuth token endpoint. Below the URL bar, the 'Params' tab is active, displaying a table of query parameters for the request.

Online REST & SOAP API Testing Tool

ReqBin is an online API testing tool for REST and SOAP APIs. Test API endpoints by making API requests directly from your browser. Test API responses with built-in JSON and XML validators. Load test your API with hundreds of simulated concurrent connections. Generate code snippets for API automation testing frameworks. Share and discuss your API requests online.

Name: enter name (optional) Save Share Generate

https://www.strava.com/oauth/token?client_id=174093&client_secret POST Send

Params 4 Body Auth Headers 6 Raw 7

Query Params

<input checked="" type="checkbox"/>	Key	Value	
<input checked="" type="checkbox"/>	client_id	174093	
<input checked="" type="checkbox"/>	client_secret	c4348a774193b9848f8a2ec47301659...	
<input checked="" type="checkbox"/>	code	3abbbe3d0110dfc27aa711085228301...	
<input checked="" type="checkbox"/>	grant_type	authorization_code	
	key	value	

2. Find All the Authorization Tokens

- A successful POST will return JSON data.
- Find the access_token and refresh_token

```
{
  "token_type": "Bearer",
  "expires_at": 1756096625,
  "expires_in": 21600,
  "refresh_token": "daa6dee0e218c24088ec10dd3a06f7c0eebc640b",
  "access_token": "52c621e4c800fb69b3c8c53e69771a56ad01f3f6",
  "athlete": {
    "id": 183624980,
    "username": "demetriousl",
    "resource_state": 2,
    "firstname": "D-Lloyd",
    "lastname": "McStrava",
    "bio": null,
    "city": "Cheney",
    "state": "Kansas",
    "country": "United States",
    "sex": "M",
    "premium": false,
    "summit": false,
    "created_at": "2025-08-24T21:58:39Z",
    "updated_at": "2025-08-24T21:59:22Z",
    "badge_type_id": 0,
    "weight": null,
    "profile_medium": "https://lh3.googleusercontent.com/a/ACg8ocLSuq4n6CkOXqRb_NhM9i8nH2uiPuClkT7Cfd1HUWFA5P0PTA=s96-c",
    "profile": "https://lh3.googleusercontent.com/a/ACg8ocLSuq4n6CkOXqRb_NhM9i8nH2uiPuClkT7Cfd1HUWFA5P0PTA=s96-c",
    "friend": null,
    "follower": null
  }
}
```

3. Use the Access Token

- Now you create yet another URL.
- [https://www.strava.com/api/v3/athlete/activities?access_token=access token from previous step](https://www.strava.com/api/v3/athlete/activities?access_token=access_token_from_previous_step)
 - Ex)
https://www.strava.com/api/v3/athlete/activities?access_token=52c621e4c800fb69b3c8c53e69771a56ad01f3f6
- Test this URL by running a GET request in <https://reqbin.com>.
 - A valid link returns JSON data.
- This link returns all of your athlete data.

3. Use the Access Token

- Use your refresh token (2 slides ago, JSON data) to generate new access tokens.
 - Refresh tokens do not expire.
 - Access tokens expire.
- [https://www.strava.com/oauth/token?client_id=your client id&client_secret=your client secret&refresh_token=your refresh token from previous step&grant_type=refresh_token](https://www.strava.com/oauth/token?client_id=your_client_id&client_secret=your_client_secret&refresh_token=your_refresh_token_from_previous_step&grant_type=refresh_token)

3. Use the Access Token

- https://www.strava.com/oauth/token?client_id=174093&client_secret=c4348a774193b9848f8a2ec4730165923b41c9cb&refresh_token=daa6dee0e218c24088ec10dd3a06f7c0eebc640b&grant_type=refresh_token
- Run this as a POST on <https://reqbin.com>
- This link (with your ID, and codes) will always generate your new access token

4. Set Up Power Query

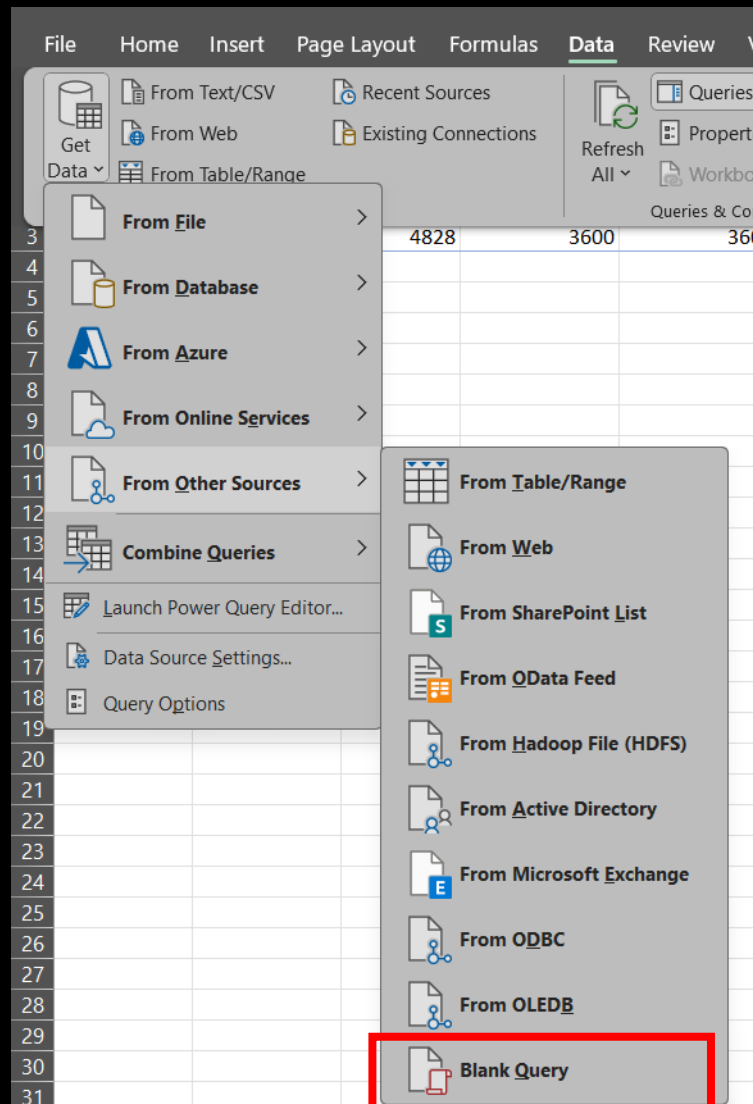
- I'm going to provide the M code to paste into the Advanced Editor.
- The next few slides will show how to get to the Advanced editor in Excel.
- You can also access the Power Query Advanced Editor in Power BI.
 - It's all the same thing.

M Code to Connect Strava

- If you're a Power Query expert, click below to get the M code to set up the API.
- [https://github.com/DemetriousLloyd/Portfolio/blob/main/Strava API M Code.txt](https://github.com/DemetriousLloyd/Portfolio/blob/main/Strava%20API%20M%20Code.txt)

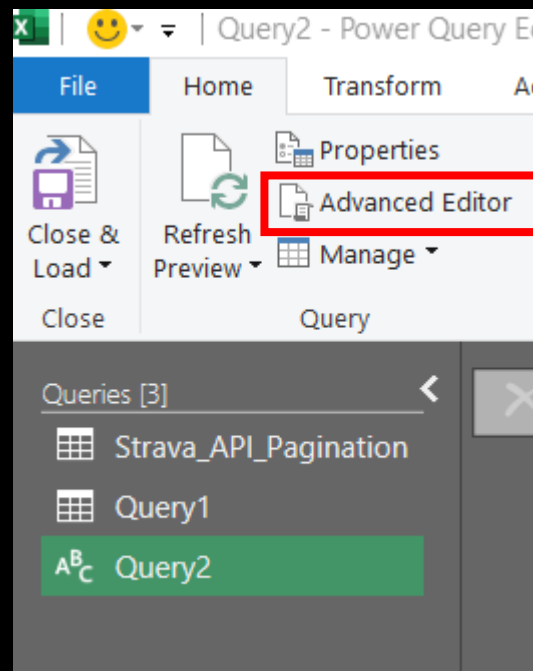
4. Set Up Power Query (Excel)

- Go to Data -> Get Data -> From Other Sources -> Blank Query



4. Set Up Power Query (Excel)

- In the new window (Power Query Editor), go to Advanced Editor



4. Set Up Power Query

- In the query editor paste the M code linked below and hit Done.
- [GitHub Link](#) to the M code.
 - Too long to paste here.
 - Included recursive logic to keep the access code refreshed
 - Included a pagination loop to get all of the past workouts.
- Use your specific client_id, client_secret and refresh_token and keep them in quotes (“”)

4. Set Up Power Query

- In the query editor paste the M code linked below and hit Done.
- Github Link to the M code.
 - Too long to paste here.
 - Included recursive logic to keep the access code refreshed
 - Included a pagination loop to get all of the past workouts.
- Use your specific `client_id`, `client_secret` and `refresh_token` and keep them in quotes (“”)

4. Set Up Power Query

- Double check those quotes (seriously!)
- Your workouts should appear:

ABC 123

fx

= Table.Combine(Pagination_Loop)

ABC 123

ID

ABC 123

Name

ABC 123

Distance

ABC 123

MovingTime

ABC 123

ElapsedTime

ABC 123

Type

ABC 123

StartDate

Valid

Error

Empty

100%

0%

0%

Valid

Error

Empty

100%

0%

0%

Valid

Error

Empty

100%

0%

0%

Valid

Error

Empty

100%

0%

0%

Valid

Error

Empty

100%

0%

0%

Valid

Error

Empty

100%

0%

0%

Valid

Error

Empty

100%

0%

0%

1

15575107570

Afternoon Run

9656.1

4980

4980

Run

2025-08-24T19:0

2

15575103601

Afternoon Run

4828

3600

3600

Run

2025-08-24T18:5

Query Settings

PROPERTIES

Name

Query2

All Properties

APPLIED STEPS

client_id

client_secret

refresh_token

token_url

post_body

response

access_token_refreshes

access_token

baseUrl

perPage

GetPage

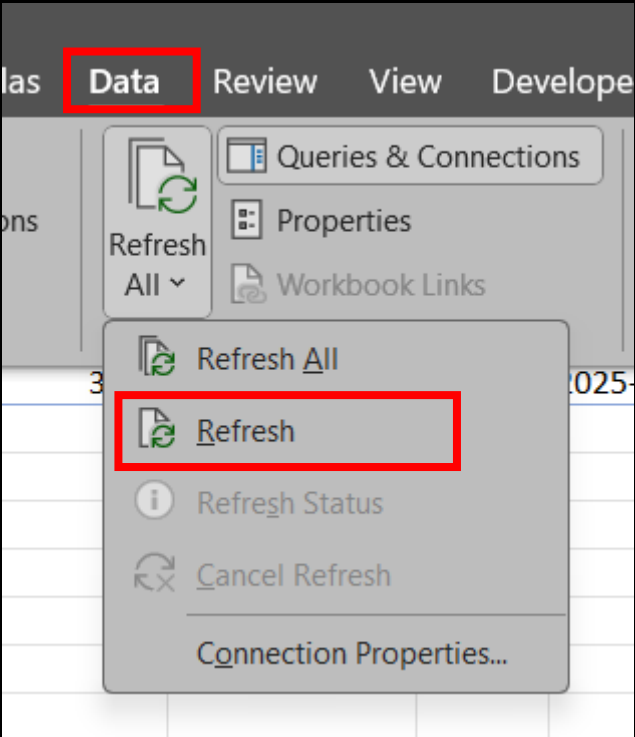
Pagination_Loop

PageLoop1

4. Set Up Power Query

- Hit “Close & Load” or do some editing
 - Distance is in meters
 - Time is in seconds
 - Speed is in meters/second
- Save your work.
- Whenever you open your Excel work book click Data -> Refresh to get your new workouts.

5. Enjoy Your API Connection



Name	Type	StartDate	Miles	Avg_Pace_mm_ss	Max_Pace_mm_ss	MovingTime_hh_mm
Morning Workout	Workout	8/23/2025 7:53	4.938658236	20:16	02:50	0.01:40:00
Nosh Run	Run	8/22/2025 5:04	8.212538774	09:16	04:19	0.01:16:00
	Run	8/21/2025 18:49	3.181793327	07:25	03:20	0.00:23:00
What good are your words anyways?	Run	8/20/2025 5:34	3.207083134	07:23	03:44	0.00:23:00
Somber Dim Lights	Run	8/20/2025 4:48	3.167874612	11:23	03:14	0.00:36:00
Evening Workout	Workout	8/19/2025 18:20	0	0∞:NaN	0∞:NaN	0.00:34:00
Survivor's Guilt	Run	8/18/2025 4:47	7.432531516	08:14	04:20	0.01:01:00
Afternoon Swim: 2000yd	Swim	8/17/2025 15:43	0	0∞:NaN	0∞:NaN	0.00:49:00
Black Men Run Phoenix	Run	8/16/2025 6:17	8.108707647	09:18	06:53	0.01:15:00
Nosh Run	Run	8/15/2025 5:00	5.287496023	10:14	07:56	0.00:54:00