

Colab Setup Instructions

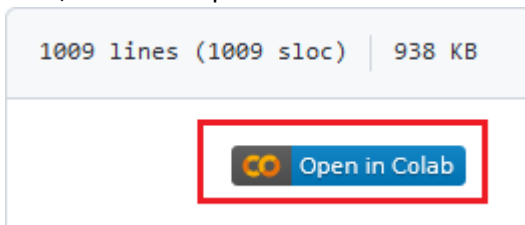
1. Open your web browser and navigate to <https://github.com/ceos-seo/odc-colab>.
2. Scroll down to the README section and click on the link "01.01.Getting_Started_ODC_and_Colab.ipynb".

ODC-Colab

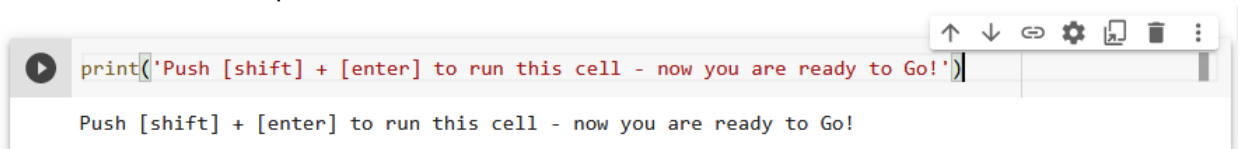
ODC-Colab is a CEOS initiative to demonstrate [Open Data Cube](#) notebooks running within [Google Colab](#). This is done through a Python module with methods that perform an automated setup of an ODC environment through simple method calls.

This repository includes several example notebooks in the `./notebooks` directory. We suggest starting with [01.01.Getting_Started_ODC_and_Colab.ipynb](#) if unfamiliar with ODC or Colab notebooks.

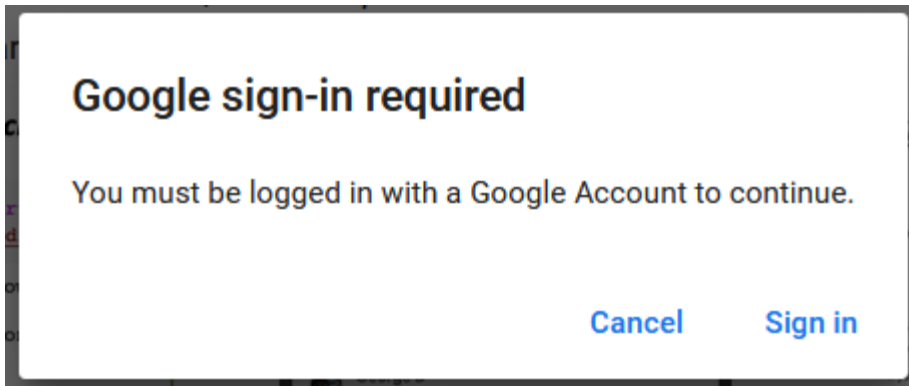
3. Next, click the "Open in Colab" button.




4. To start setting up your account, click the link "Google Colab and Jupyter Notebooks".
2. [Google Colab and Jupyter Notebooks](#)
5. Click the cell below and press Shift + Enter to run it.



6. If you are not already signed into your Google account, you will be asked to do so now.



7. Click Leave Page to continue with the sign in process.

 colab.research.google.com

This page is asking you to confirm that you want to leave — information you've entered may not be saved.



8. After signing in you will be returned to the notebook. Run the above cell again. A green check mark should appear to the left of the cell indicating success.

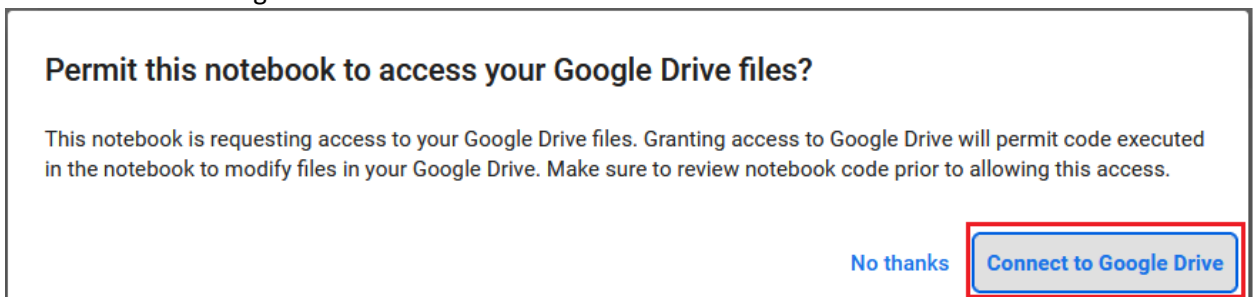
```
[1] print('Push [shift] + [enter] to run this cell - now you are ready to Go!')
```

Push [shift] + [enter] to run this cell - now you are ready to Go!

9. To store content and results, Colab will need access to your Google Drive. Run the cell below to begin.

```
[ ] from google.colab import drive  
drive.mount('/content/drive')
```

10. Click Connect to Google Drive



11. Sign in, or select your Google Account. On the next screen, scroll down to the bottom and click Allow.

Make sure you trust Google Drive for desktop

You may be sharing sensitive info with this site or app. You can always see or remove access in your [Google Account](#).

Learn how Google helps you [share data safely](#).

See Google Drive for desktop's [Privacy Policy](#) and [Terms of Service](#).



12. When the cell completes successfully you will see the following

```
✓ [3] from google.colab import drive
4m    drive.mount('/content/drive')

Mounted at /content/drive
```

13. Now that you've setup the link to Google Drive, the next cell will grab the Python libraries necessary to run ODC on Google Colab. This is based on the ODC-Colab repository build by the CEOS Systems Engineering Office.
14. The next code block will populate the ODC data index allowing ODC to access data from the Google Earth Engine Catalog
15. This next code block will establish the connection to the Google Earth Engine datasets. Run the cell to begin.

```
# Suppress Warning Messages
import warnings
warnings.filterwarnings('ignore')

# Load Data Cube Configuration
from odc_gee import earthengine
dc = earthengine.Datacube(app='Getting_Started_loading_data')

# Import Data Cube API
import utils.data_cube_utilities.data_access_api as dc_api
api = dc_api.DataAccessApi()

# Import Utilities
import xarray as xr
```

16. Click the link.

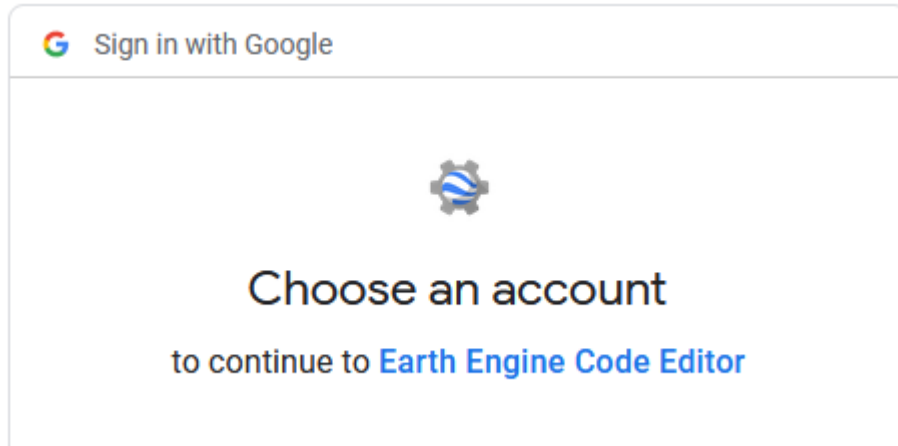
```
import xarray as xr
```

... To authorize access needed by Earth Engine, open the following URL in a web browser and follow th

<https://code.earthengine.google.com/client-auth?scopes=https%3A//www.googleapis.com/auth/eart>

The authorization workflow will generate a code, which you should paste in the box below.
Enter verification code:


17. Select your Google Account



18. Click Choose Project



Notebook Authenticator

Active account:  XXXXXXXX@gmail.com [SWITCH ACCOUNT](#)

Cloud Project: ***(required)** [CHOOSE PROJECT](#)

Data access: Use **read-only scopes**

WARNING: ONLY PROCEED IF YOU NEED TO ACCESS EARTH ENGINE FROM A NOTEBOOK

The token that you generate here will allow access to your Google account. Ensure that you understand the notebook that you are running.

Any code that you include in the notebook (and anyone with access to the notebook kernel) will be able to copy or **change** your data. Enable read-only scopes above to prevent data changes.

If you are not running a notebook, or you don't understand these warnings, then the link that sent you here may be trying to trick you. Do not proceed!

GENERATE TOKEN

19. Create a new Cloud Project. Your project ID must be globally unique. To help guarantee the uniqueness of your project ID it is recommended you follow the form: odc-colab-<your>-<name>.

Choose a Cloud Project for your notebook

The selected project will control the web application used for authentication.

Create a new Cloud Project

Select an existing Cloud Project

Select a parent organization or folder.

No organization

Choose a publicly visible ID for your personal Earth Engine Cloud Project. This value must be unique and it cannot be changed later.

odc-colab-your-name

Optional: Choose a name to help you identify the Cloud Project.

ODC Colab

CANCEL SELECT

If you receive this error message, continue trying other IDs until one is successful.

⚠ Error encountered while creating Cloud Project "ee-ac-deleteme": A project with the same ID already exists.

20. Leave Use read-only scopes unchecked and click Generate Token.

Data access:

Use **read-only scopes**

WARNING: ONLY PROCEED IF YOU NEED TO ACCESS EARTH ENGINE FROM A NOTEBOOK

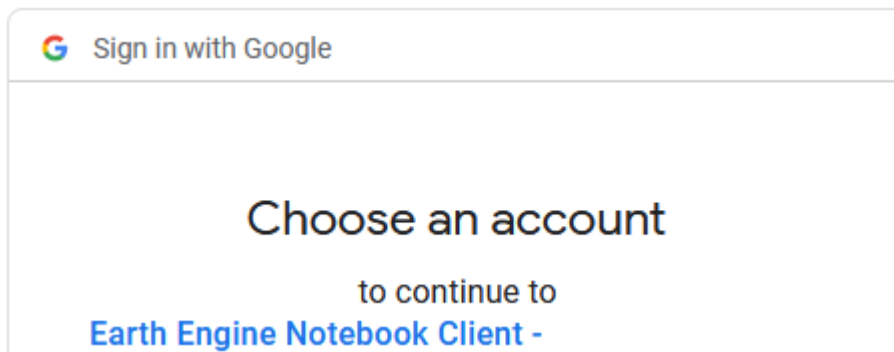
The token that you generate here will allow access to your Google account. Ensure that you understand the notebook that you are running.

Any code that you include in the notebook (and anyone with access to the notebook kernel) will be able to copy or **change** your data. Enable read-only scopes above to prevent data changes.

If you are not running a notebook, or you don't understand these warnings, then the link that sent you here may be trying to trick you. Do not proceed!

GENERATE TOKEN

21. Select your Google account



22. Click Continue



Google hasn't verified this app

You've been given access to an app that's currently being tested. You should only continue if you know [the developer](#) that invited you.

Continue

Back to safety

23. Select all checkboxes and click Continue.

Earth Engine Notebook Client -
XXXXXX@gmail.com
wants access to your Google
Account



XXXXXX@gmail.com

Select what
Earth Engine Notebook Client -
XXXXXX@gmail.com
can access

View and manage your Google Earth Engine data. [Learn more](#)



Manage your data and permissions in Cloud Storage and see the email address for your Google Account. [Learn more](#)



Make sure you trust Earth Engine Notebook
Client - XXXXXX@gmail.com

You may be sharing sensitive info with this site or app. You can always see or remove access in your [Google Account](#).

Learn how Google helps you [share data safely](#).

See Earth Engine Notebook Client -
XXXXXX@gmail.com's Privacy Policy and Terms
of Service.

Cancel

Continue

24. Copy the authorization code.

Authorization code

Please copy this code, switch to your application and paste it there:

4/1AdQt8qjLVyxtxjrjPoVcqHGrKd0lXTNvOri2f-
fdz4u6JUgNTmSpPXdWFuw



25. Return to the notebook and paste the authorization code from the previous step into the text box and press enter.

... To authorize access needed by Earth Engine, open the following URL in a web browser and fo

<https://code.earthengine.google.com/client-auth?scopes=https%3A//www.googleapis.com/au>

The authorization workflow will generate a code, which you should paste in the box below.

Enter verification code:

26. The cell will save your authorization code but fail with an error saying you are not signed up for Google Earth Engine. Click the link to go to the Google Earth Engine FAQ.

EEException: Not signed up for Earth Engine or project is not registered. Visit <https://earthengine.google.com/faq/>

27. On the FAQ page click How do I get access? Then click the link to go to the sign up form.



What is Earth Engine?

How is Earth Engine different from Google Earth?

How does Earth Engine data compare to the Landsat and Sentinel data in Google Cloud?

Why is Google working on Earth Engine?

What can Earth Engine do for me or my organization?

Tell me what some others have done with Earth Engine

How do I get access?

To get access to Earth Engine, please fill out the form at signup.earthengine.google.com. You will receive an email titled "Welcome to Google Earth Engine" with instructions for getting started.

Can I access Earth Engine from more than one Google account?

28. Fill out the sign up form and click Submit.

Email
xxxxxx@gmail.com

Want to use a different account? [Log out](#) or use an Incognito tab.

Full name*
Your Name

Please tell us your first and last name.

Affiliation/Institution*
None

Which organization are you a part of? Give a homepage URL if possible.

Institution type*
No affiliation

Select the best description for your institution, or choose Other and clarify.

Country/Region*
United States

Please tell us where you live.

What would you like to accomplish with Earth Engine?*
I am testing the first time setup process for ODC Colab.

Please describe in a few sentences how you intend to use Earth Engine.

Earth Engine may only be used for development, research, or educational purposes. It may not be used for sustained commercial purposes without a commercial license, but may be evaluated in a production environment.

I agree that my use of the Earth Engine services and related APIs is subject to my compliance with the applicable [Terms of Service](#). In particular, I acknowledge that creating multiple Earth Engine accounts to circumvent quota restrictions is a violation of the Terms of Service.

I'm not a robot

reCAPTCHA
Privacy - Terms

SUBMIT

29. Return to the notebook and run the cell again. This time it will execute successfully.



The image shows a code editor window with a toolbar at the top containing icons for undo, redo, search, settings, copy, and delete. On the left side, there is a red square icon with a white checkmark and a play button icon. The code is as follows:

```
# Suppress Warning Messages
import warnings
warnings.filterwarnings('ignore')

# Load Data Cube Configuration
from odc_gee import earthengine
dc = earthengine.Datacube(app='Getting_Started_loading_data')

# Import Data Cube API
import utils.data_cube_utilities.data_access_api as dc_api
api = dc_api.DataAccessApi()

# Import Utilities
import xarray as xr
```

30. Now we have an ODC instance established with a connection to data!