Colab Setup Instructions

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.

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.

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

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

   ![Code snippet]

   ```python
   from google.colab import drive
   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.

   ![Code snippet]

   ```python
   # Suppress Warning Messages
   import warnings
   warnings.filterwarnings('ignore')
   # Load Data Cube Configuration
   from odc_ee import earthengine
dc = earthengine.Datacube(app='GettingStartedLoadingData')
# 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.

17. Select your Google Account

18. Click Choose Project
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>.
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!

21. Select your Google account

Google Sign in with Google

Choose an account to continue to Earth Engine Notebook Client-

22. Click Continue
23. Select all checkboxes and click Continue.
Earth Engine Notebook Client - XXXXXX@gmail.com wants access to your Google Account

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:

4/1AdQt8qjLVytxjnPoVcqhgGrKdo1XTNv0r12f-fdz4u6JUGNTmSpPXdfuW

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 follow the prompt:


The authorization workflow will generate a code, which you should paste in the box below. Enter verification code: fdz4u6JUGNTmSpPXdfuW

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.
29. Return to the notebook and run the cell again. This time it will execute successfully.
30. Now we have an ODC instance established with a connection to data!

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

# Load Data Cube Configuration
from odc_gdp 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
```