

Printing from Colab

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Printing from Colab seems easy - there's a File > Print option in the menu! However, the built-in print option won't always work well for us, because if a plot or other output happens to come out near a page break, it can get cut off.

For example, try running the following cell, which creates a large plot:

```
import numpy as np
import matplotlib.pyplot as plt

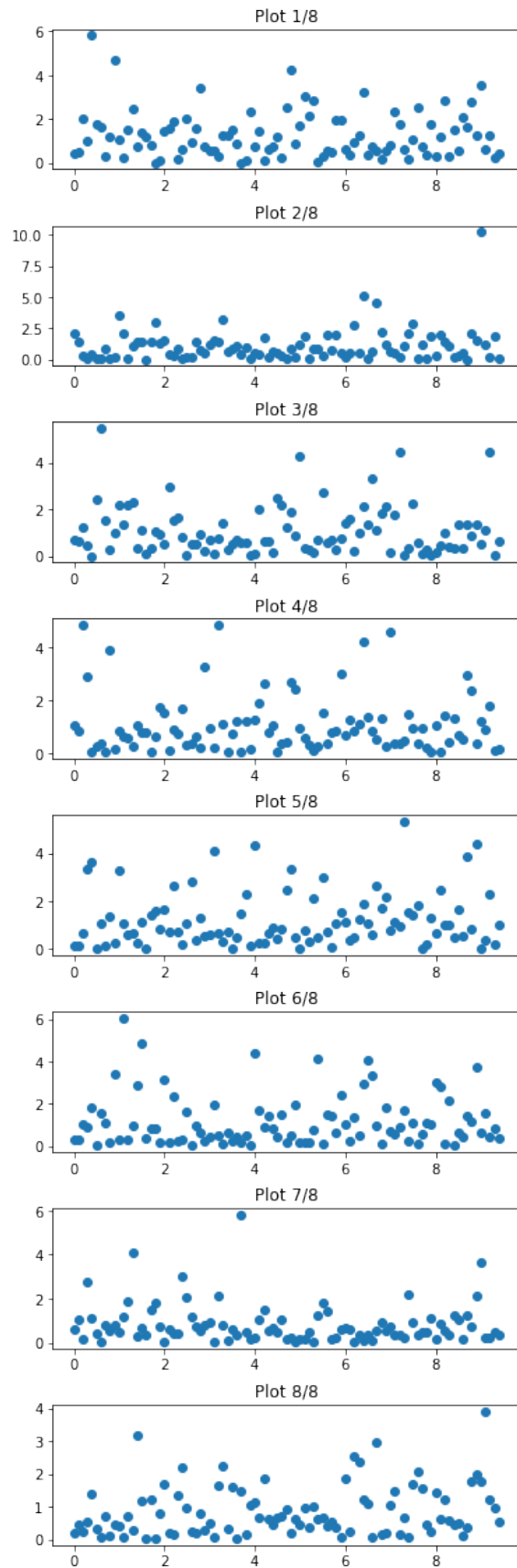
x = np.arange(0, 3 * np.pi, 0.1)

# set up figure and subplots
plt.figure(figsize=(6, 20))
plt.subplot(8, 1, 1)

# plot random data
for p in range(1,8+1):
    y = np.random.exponential(size=len(x))
    plt.subplot(8, 1, p)
    plt.scatter(x, y)
    plt.title('Plot %d/8' % p)

# adjust spacing between subplots
plt.subplots_adjust(hspace = 0.4)

# show the figure.
plt.show()
```



Then, look at the preview PDF output using File > Print, and note how some of the subplots do not appear in the PDF output.

As an alternative to Colab's built-in print, you can use this notebook to generate a PDF version of any Colab notebook that is saved in your Google Drive.

Step 1: Prepare the source notebook

Make sure the notebook that you want to print is ready:

- you ran the cells in the notebook (in order! and their output is visible in the notebook)
- it is saved in your Google Drive

Step 2: Install software and libraries

In *this* notebook, run the following cell:

```
!apt-get install texlive texlive-xetex texlive-latex-extra pandoc
!pip install py pandoc
```

```
E: Could not open lock file /var/lib/dpkg/lock-frontent - open (13: Permission denied)
E: Unable to acquire the dpkg frontend lock (/var/lib/dpkg/lock-frontent), are you root?
Defaulting to user installation because normal site-packages is not writeable
Collecting py pandoc
  Downloading py pandoc-1.5.tar.gz (26 kB)
Requirement already satisfied: pip>=8.1.0 in /home/ffund/.local/lib/python3.8/site-packages
  (from py pandoc) (21.1.1)
Requirement already satisfied: setuptools in /usr/lib/python3/dist-packages (from py pandoc)
  (45.2.0)
Requirement already satisfied: wheel>=0.25.0 in /usr/lib/python3/dist-packages (from
  py pandoc) (0.34.2)
Building wheels for collected packages: py pandoc
  Building wheel for py pandoc (setup.py) ... e=py pandoc-1.5-py3-none-any.whl size=17038
    sha256=c52e7756340ca319d78e09cc53345c964f01555f4dd1859b83e66974053484ae
  Stored in directory:
    /home/ffund/.cache/pip/wheels/27/01/d8/dde8d4ae5c2a6e6dda11cee8c4fb855c9f60f1f8cdc1332cef
Successfully built py pandoc
Installing collected packages: py pandoc
Successfully installed py pandoc-1.5
WARNING: You are using pip version 21.1.1; however, version 21.1.2 is available.
You should consider upgrading via the '/usr/bin/python3 -m pip install --upgrade pip'
command.
```

Step 3: Mount your Google Drive

In *this* notebook, mount your Google Drive:

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

```
-----
ModuleNotFoundError                                Traceback (most recent call last)
<ipython-input-3-d5df0069828e> in <module>
----> 1 from google.colab import drive
```

```
2 drive.mount('/content/drive')
```

```
ModuleNotFoundError: No module named 'google.colab'
```

Step 4: Select notebook and convert to PDF

In the following cell, change the name of the notebook from “Untitled” to whatever your notebook is named. Then, run the cell.

```
!jupyter nbconvert --output-dir='/content' --to PDF '/content/drive/My Drive/Colab  
Notebooks/Untitled.ipynb'
```

```
[NbConvertApp] WARNING | pattern '/content/drive/My Drive/Colab Notebooks/Untitled.ipynb'  
matched no files  
Traceback (most recent call last):  
  File "/usr/bin/jupyter-nbconvert", line 11, in <module>  
    load_entry_point('nbconvert==5.6.1', 'console_scripts', 'jupyter-nbconvert')()  
  File "/usr/lib/python3/dist-packages/jupyter_core/application.py", line 270, in  
    launch_instance  
    return super(JupyterApp, cls).launch_instance(argv=argv, **kwargs)  
  File "/usr/lib/python3/dist-packages/traitlets/config/application.py", line 663, in  
    launch_instance  
    app.initialize(argv)  
  File "<decorator-gen-7>", line 2, in initialize  
  File "/usr/lib/python3/dist-packages/traitlets/config/application.py", line 87, in  
    catch_config_error  
    return method(app, *args, **kwargs)  
  File "/usr/lib/python3/dist-packages/nbconvert/nbconvertapp.py", line 286, in initialize  
    self.init_writer()  
  File "/usr/lib/python3/dist-packages/nbconvert/nbconvertapp.py", line 327, in init_writer  
    self.writer = self.writer_factory(parent=self)  
  File "/usr/lib/python3/dist-packages/nbconvert/writers/files.py", line 44, in __init__  
    super(FilesWriter, self).__init__(**kw)  
  File "/usr/lib/python3/dist-packages/nbconvert/writers/base.py", line 27, in __init__  
    super(WriterBase, self).__init__(config=config, **kw)  
  File "/usr/lib/python3/dist-packages/nbconvert/utils/base.py", line 29, in __init__  
    super(NbConvertBase, self).__init__(**kw)  
  File "/usr/lib/python3/dist-packages/traitlets/config/configurable.py", line 84, in  
    __init__  
    self.config = config  
  File "/usr/lib/python3/dist-packages/traitlets/traitlets.py", line 585, in __set__  
    self.set(obj, value)  
  File "/usr/lib/python3/dist-packages/traitlets/traitlets.py", line 574, in set  
    obj._notify_trait(self.name, old_value, new_value)  
  File "/usr/lib/python3/dist-packages/traitlets/traitlets.py", line 1134, in _notify_trait  
    self.notify_change(Bunch(  
  File "/usr/lib/python3/dist-packages/traitlets/traitlets.py", line 1176, in notify_change  
    c(change)  
  File "/usr/lib/python3/dist-packages/traitlets/traitlets.py", line 819, in  
    compatible_observer  
    return func(self, change)  
  File "/usr/lib/python3/dist-packages/traitlets/config/configurable.py", line 186, in  
    _config_changed
```

```
self._load_config(change.new, traits=traits, section_names=section_names)
File "/usr/lib/python3/dist-packages/traitlets/config/configurable.py", line 168, in
    _load_config
    warn(msg)
File "/usr/lib/python3.8/contextlib.py", line 120, in __exit__
    next(self.gen)
File "/usr/lib/python3/dist-packages/traitlets/traitlets.py", line 1131, in
    hold_trait_notifications
    self.notify_change(change)
File "/usr/lib/python3/dist-packages/traitlets/traitlets.py", line 1176, in notify_change
    c(change)
File "/usr/lib/python3/dist-packages/nbconvert/writers/files.py", line 41, in
    _build_directory_changed
    ensure_dir_exists(new)
File "/usr/lib/python3/dist-packages/ipython_genutils/path.py", line 167, in
    ensure_dir_exists
    os.makedirs(path, mode=mode)
File "/usr/lib/python3.8/os.py", line 223, in makedirs
    mkdir(name, mode)
PermissionError: [Errno 13] Permission denied: '/content'
```

Step 5: Download PDF

Finally, open the Colab file browser, locate your new PDF, and download it.