



User Guide for Jupyter Notebook and Command Line Interface

Star Command

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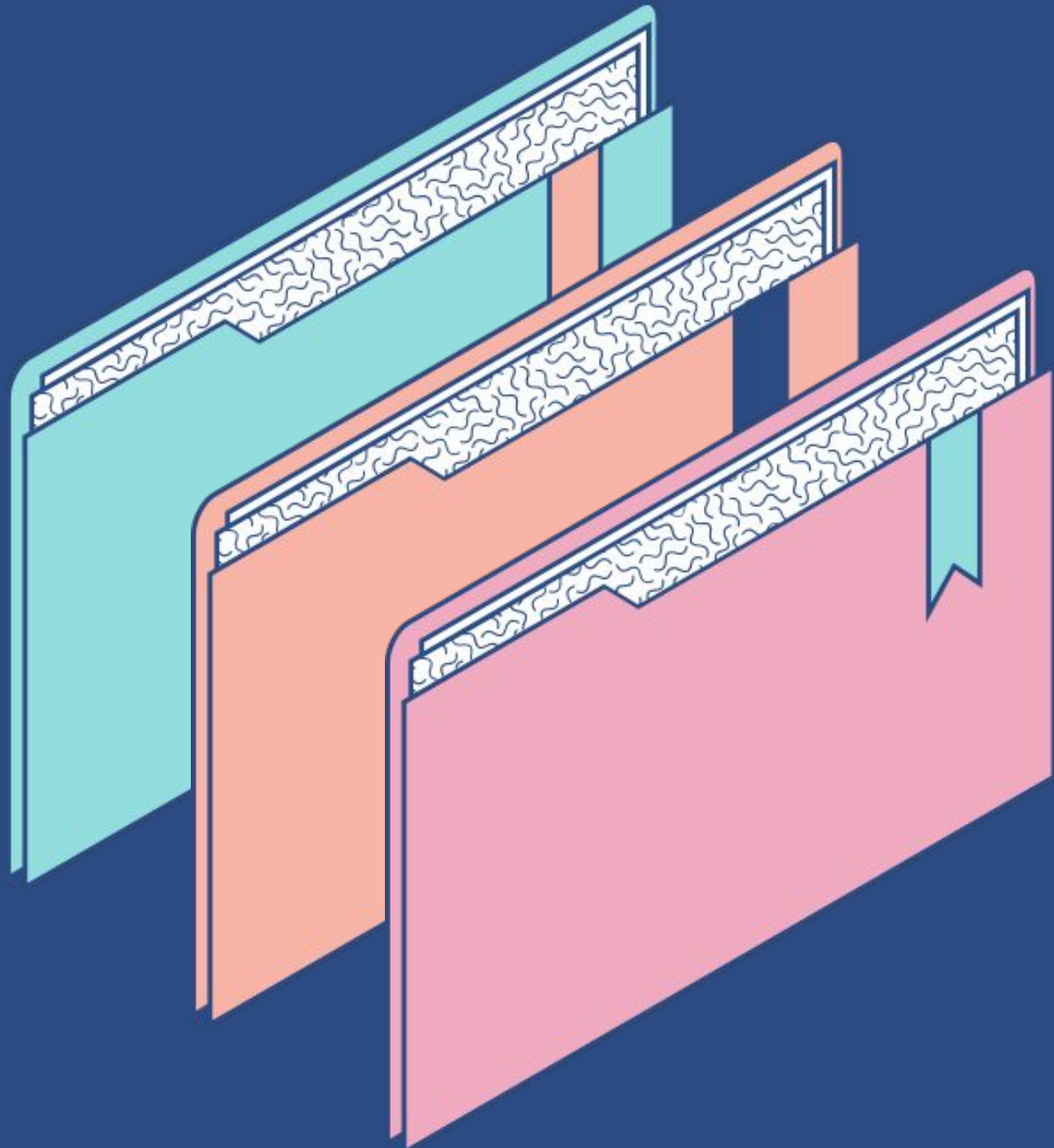


ORIE

Fairfield, CT

Agenda

- The Problem
- Our Goal
- Our Solution
- Our Timeline



Command Line Interfaces (CLIs)

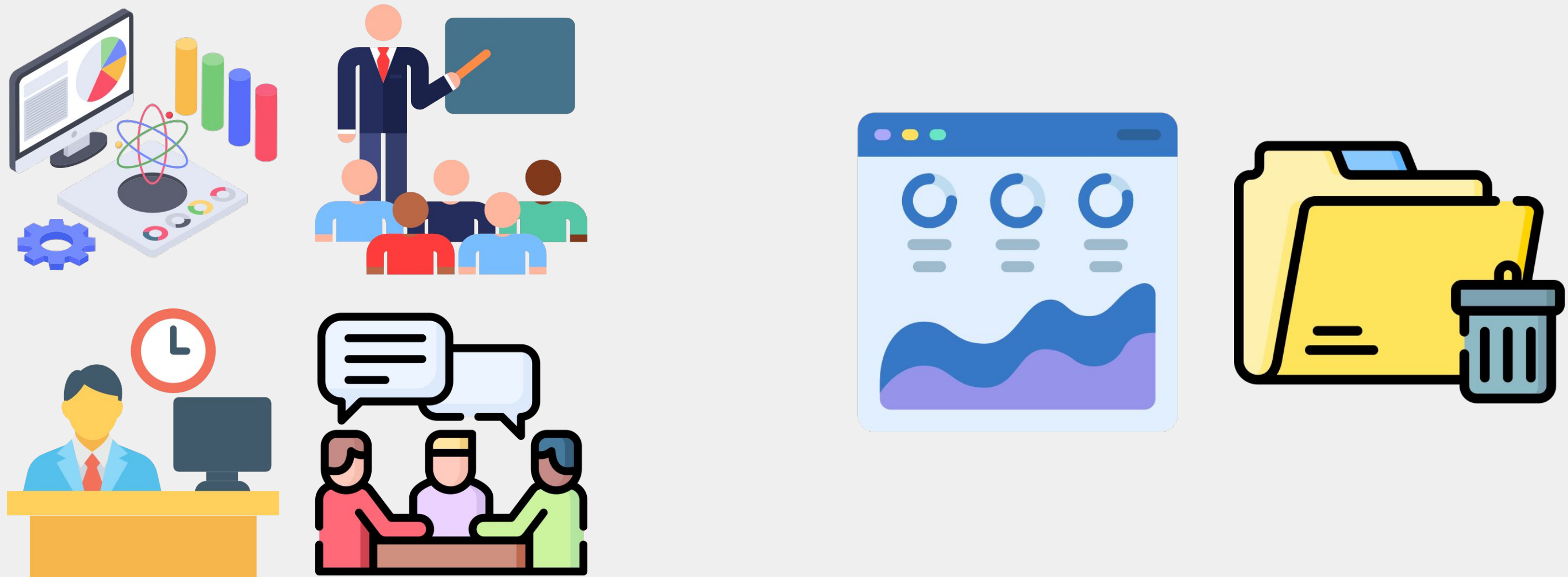


Jupyter Notebook





Jupyter Notebooks and CLIs are VERY useful in school and in industry.



Downloading software using CLIs can be confusing and very time consuming.



Documentation on CLIs is scarce and often confusing.



Google

FileNotFoundError: [Errno 2] No such file or directory: '9788427133310_urls' X

All Videos News Shopping Images More Tools

About 9 results (0.85 seconds)

[https://stackoverflow.com > questions > 22282760 > fil...](https://stackoverflow.com/questions/22282760/file-not-found-error-errno-2-no-such-file-or-directory)

FileNotFoundError: [Errno 2] No such file or directory - Stack ...

May 22, 2017 · 6 answers

When you open a **file** with the name `address.csv`, you are telling the `open()` function that your **file** is in the current working **directory**.

Error in Python IOError: [Errno 2] No such file or directory: 'data ... Oct 21, 2012

How to save multiple plotted **csv** files? **FileNotFoundError** ... Jul 15, 2021

FileNotFoundError: [Errno 2] No such file or directory: with ... Jul 10, 2019

[Errno 2] No such file or directory: 'Test.csv' in VS Code - Stack ... Jul 8, 2020

More results from stackoverflow.com

Missing: '9788427133310_urls' | Must include: '9788427133310_urls'

Without proper knowledge of CLIs, a user can easily delete their hard drive.

```
Administrator: Command Prompt - diskpart
(c) 2012 Microsoft Corporation. All rights reserved.
C:\Windows\system32>diskpart
Microsoft DiskPart version 6.2.9200
Copyright (C) 1999-2012 Microsoft Corporation.
On computer: SEAGATE2012

DISKPART> list disk

   Disk ###  Status              Size               Free               Dyn  Gpt
   -----  -
   Disk 0    Online              931 GB              0 B
   Disk 1    Online              2794 GB             1024 KB

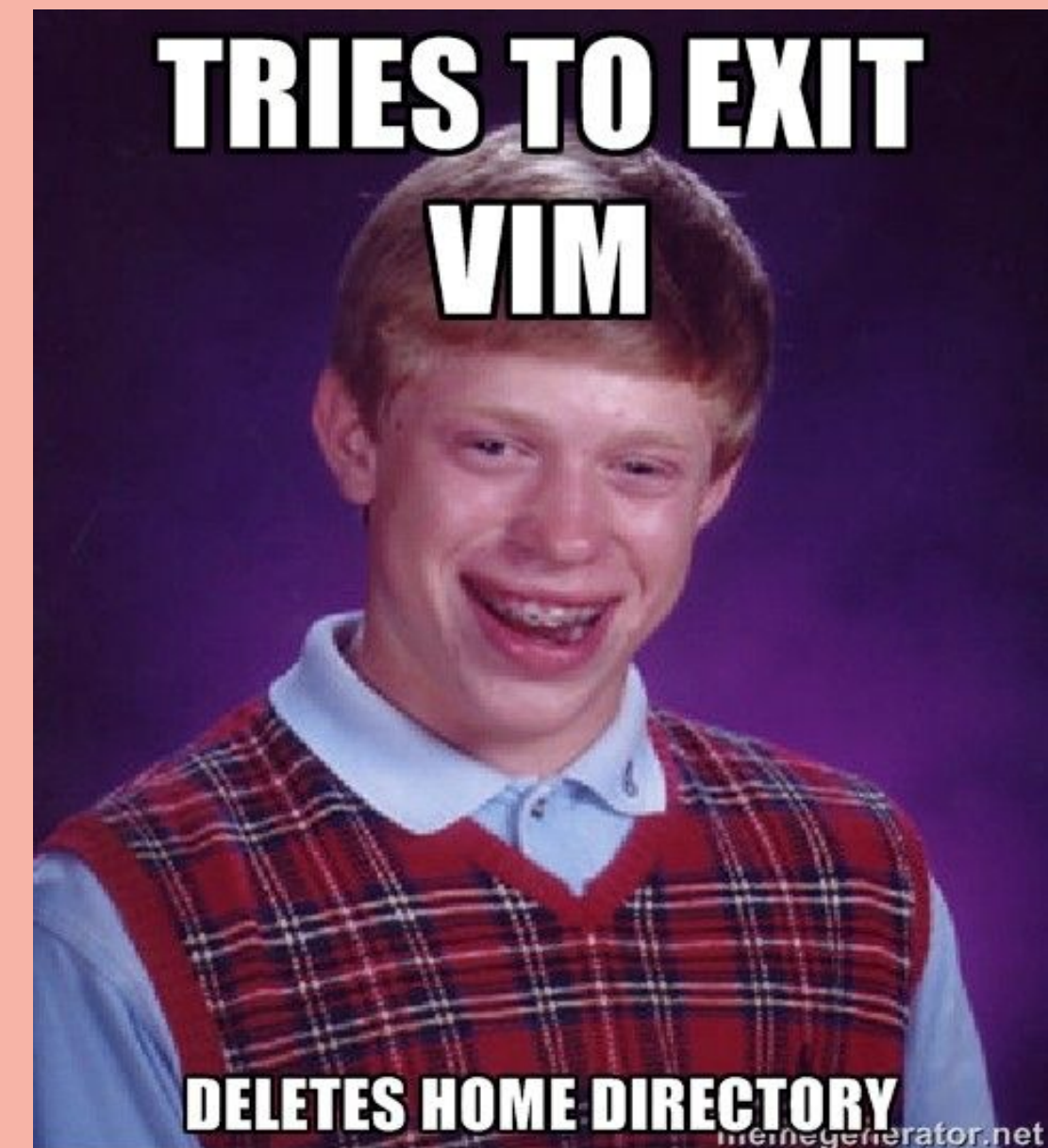
DISKPART> select disk 1
Disk 1 is now the selected disk.

DISKPART> clean
DiskPart succeeded in cleaning the disk.
DISKPART>
```

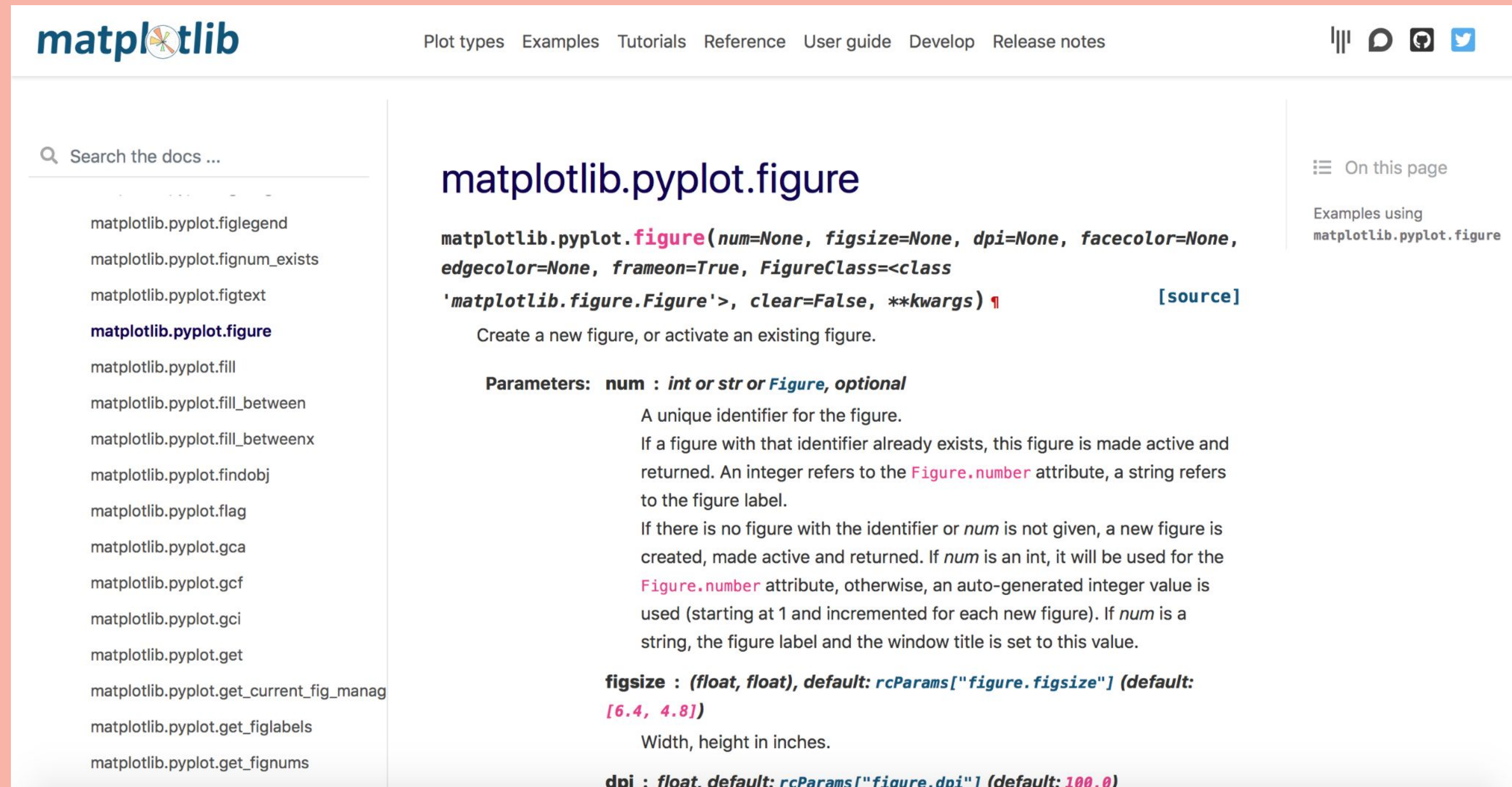


Writing code using text-based editors can be frustrating

```
█  
# Please enter the commit message for your changes. Lines starting  
# with '#' will be ignored, and an empty message aborts the commit.  
#  
# On branch master  
# Your branch is up to date with 'origin/master'.  
#  
# Changes to be committed:  
#   new file:   content/posts/how-i-stopped-being-scared-and-started-loving-vim.md  
#   new file:   static/3e88c2d114591bb621d00298544562dc.jpg  
#   new file:   static/galaxy-brain-vim-meme.png  
#   new file:   static/scientist-vim-meme.png  
#  
# Changes not staged for commit:  
#   modified:   themes/hello-friend-ng (modified content)  
#  
~  
~  
~  
~  
~  
~  
~  
~  
~/projects/matsu-blog/.git/COMMIT_EDITMSG" 16L, 559C          1,0-1          ALL
```



In Jupyter Notebooks, it's hard to find the packages you need and understand the documentation.



The screenshot shows the matplotlib documentation website. The top navigation bar includes links for Plot types, Examples, Tutorials, Reference, User guide, Develop, and Release notes. The main content area is titled 'matplotlib.pyplot.figure' and provides a detailed description of the `matplotlib.pyplot.figure` function. The function signature is `matplotlib.pyplot.figure(num=None, figsize=None, dpi=None, facecolor=None, edgecolor=None, frameon=True, FigureClass=<class 'matplotlib.figure.Figure'>, clear=False, **kwargs)`. The documentation explains that this function creates a new figure or activates an existing one. It lists parameters such as `num`, `figsize`, and `dpi` with their respective default values and descriptions. A search bar on the left side of the page allows users to search the documentation. The right side of the page features a 'On this page' section with a link to 'Examples using matplotlib.pyplot.figure'.

matplotlib

Plot types Examples Tutorials Reference User guide Develop Release notes

Search the docs ...

matplotlib.pyplot.figlegend
matplotlib.pyplot.fignum_exists
matplotlib.pyplot.figtext
matplotlib.pyplot.figure
matplotlib.pyplot.fill
matplotlib.pyplot.fill_between
matplotlib.pyplot.fill_betweenx
matplotlib.pyplot.findobj
matplotlib.pyplot.flag
matplotlib.pyplot.gca
matplotlib.pyplot.gcf
matplotlib.pyplot.gci
matplotlib.pyplot.get
matplotlib.pyplot.get_current_fig_manag
matplotlib.pyplot.get_figlabels
matplotlib.pyplot.get_fignums

matplotlib.pyplot.figure

`matplotlib.pyplot.figure(num=None, figsize=None, dpi=None, facecolor=None, edgecolor=None, frameon=True, FigureClass=<class 'matplotlib.figure.Figure'>, clear=False, **kwargs)` [\[source\]](#)

Create a new figure, or activate an existing figure.

Parameters: `num` : *int or str or Figure, optional*

A unique identifier for the figure.
If a figure with that identifier already exists, this figure is made active and returned. An integer refers to the `Figure.number` attribute, a string refers to the figure label.
If there is no figure with the identifier or `num` is not given, a new figure is created, made active and returned. If `num` is an int, it will be used for the `Figure.number` attribute, otherwise, an auto-generated integer value is used (starting at 1 and incremented for each new figure). If `num` is a string, the figure label and the window title is set to this value.

figsize : *(float, float), default: rcParams["figure.figsize"] (default: [6.4, 4.8])*

Width, height in inches.

dpi : *float, default: rcParams["figure.dpi"] (default: 100.0)*

On this page

Examples using
matplotlib.pyplot.figure

In Jupyter Notebooks, there is endless possibilities for creative visual presentations using Markdown.

This is awful!

But the markdown cell usually looks like this:

Make an un-directed graph, nodes are (CUID, exam_key). There is an edge between any nodes with the same CUID or with the same exam_key.

```
exam_df['PS Key'][900]: 'AEM-2241-LEC-1-8920'  
exam_df['PS Key'][1000]: 'AEM-2241-LEC-2-8921'  
exam_df['Exam Key'][900]: 'MLG23'  
exam_df['Exam Key'][1000]: 'MLG23'  
Moral of the story, we should look exam key to organize the exams.
```

```
In [25]: #The only information we need are ID and Exam Keys. And a node_name is made as a combination of the 2.  
graph_df = pd.DataFrame()  
graph_df['CUID'] = exam_df['ID']  
graph_df['exam_key'] = exam_df['Exam Key']  
  
node_names = []  
for i in range(len(graph_df['CUID'])):  
    curr_node_name = (graph_df.iloc[i,0], graph_df.iloc[i,1])  
    node_names.append(curr_node_name)  
  
graph_df['node_name'] = node_names  
graph_df
```

Introducing Our Goal

Provide students with a resource that can help guide them to properly set up and use Jupyter Notebook and CLIs for MacOS.



Our Solution

How to learn these skills

STEP

1

Access the website with links to specific tutorials



STEP

2

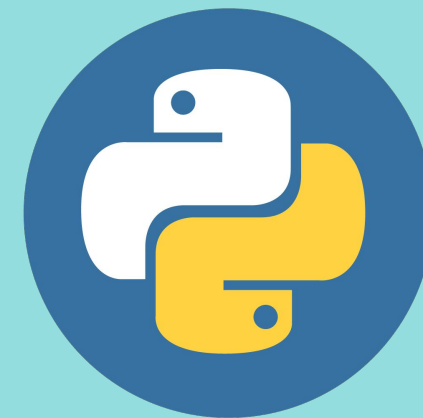
Become introduced to Anaconda and Jupyter



STEP

3

Check Python version and begin set up



STEP

4

Install appropriate Python packages and create virtual environments

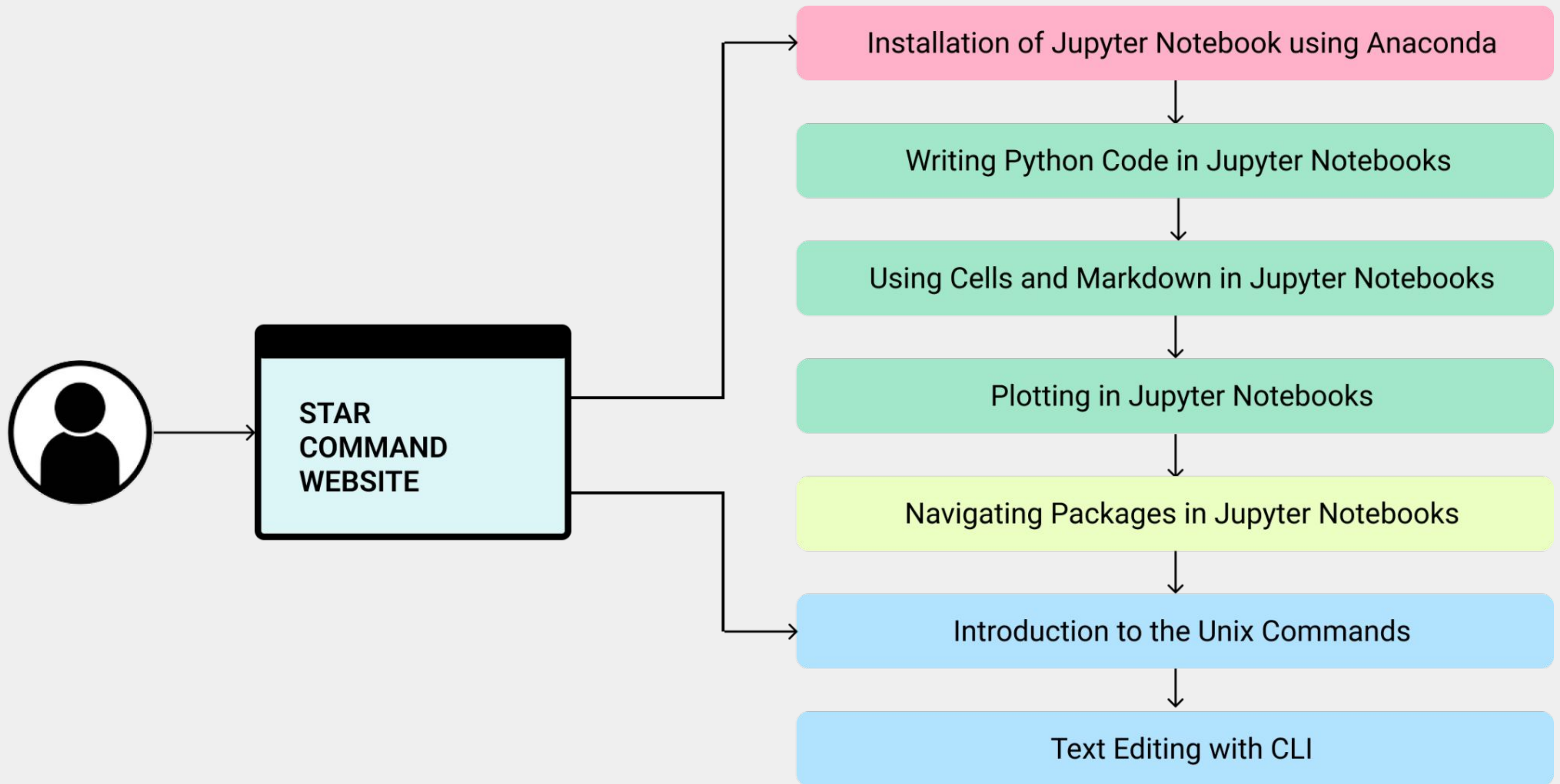


STEP

5

Create, run, and debug cells





How to Use Jupyter Notebook

We aim to teach users how to perform these tasks:

1. How to use markdown in cells
2. How to download packages
3. How to work with specific packages

```
In [1]: %matplotlib inline
import pandas as pd
import numpy as np
import plotly
from IPython.display import display, Markdown as md
```

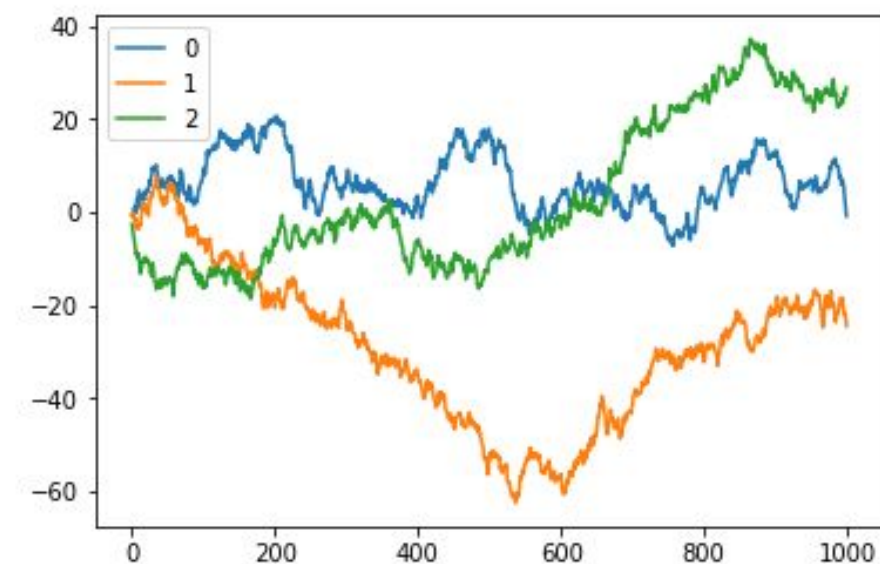
```
In [2]: title = "My Shiny Report"
x = 1000
y = 3
```

```
In [3]: display(md("# Just look at this graph from {}".format(title)))
```

Just look at this graph from My Shiny Report

```
In [4]: df = pd.DataFrame(np.random.randn(x, y))
df.cumsum().plot()
```

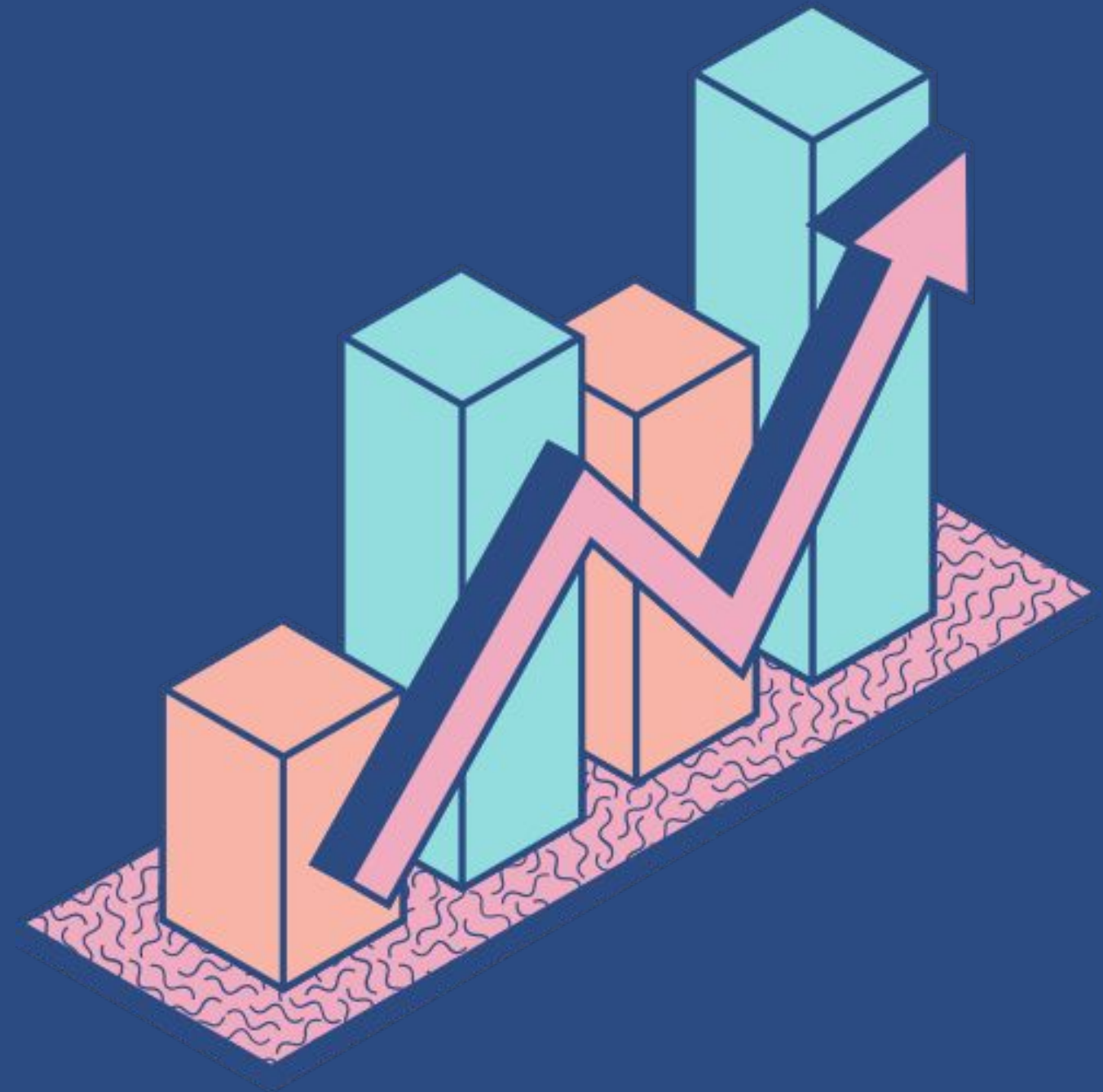
Out[4]: <matplotlib.axes._subplots.AxesSubplot at 0x7f127adda278>



This is what can be improved for CLIs:

What is currently lacking?

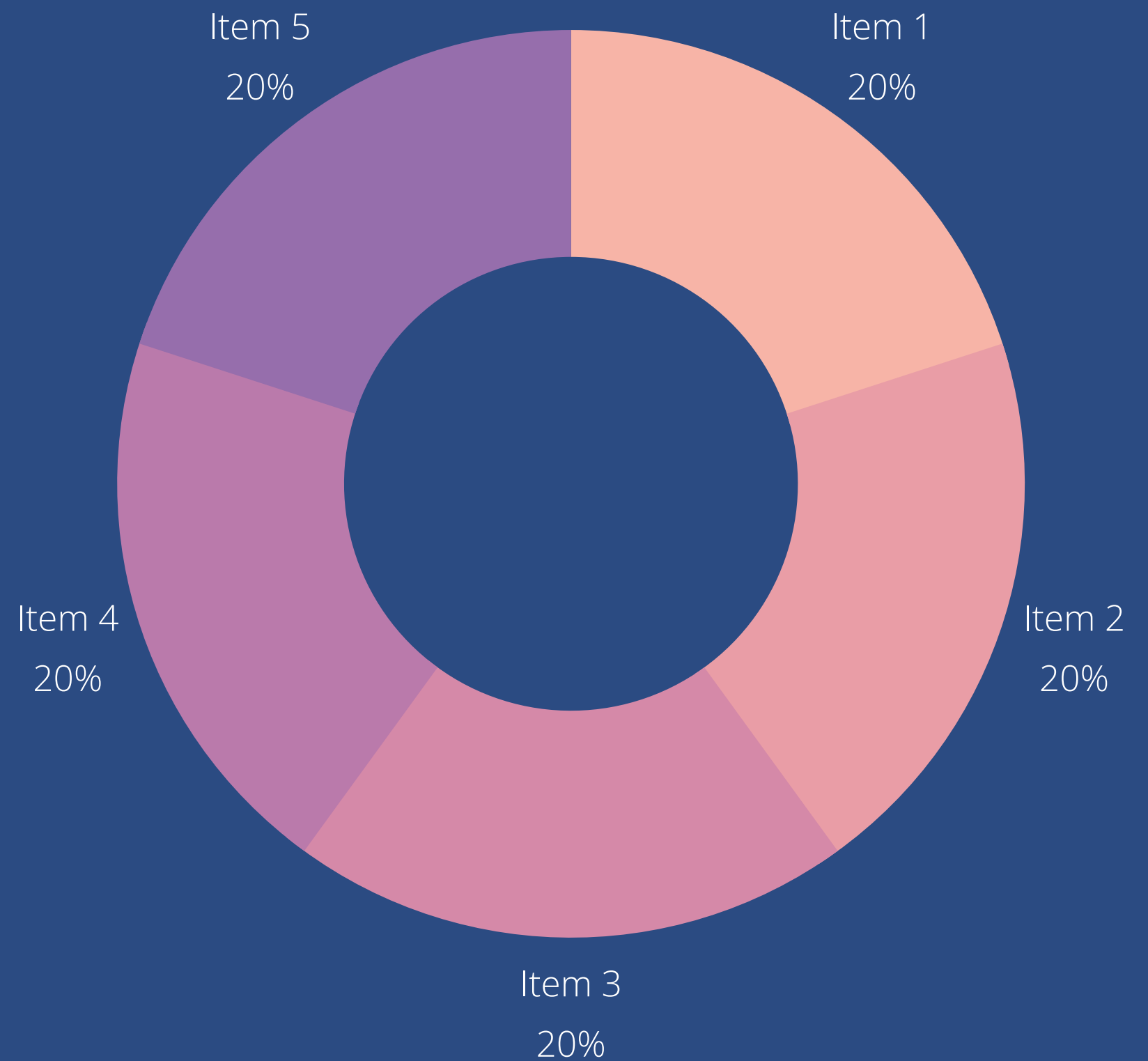
- There is nothing specific that guides users through how to complete basic operations such as downloading packages and running code, especially for MacOS.
- Resources that integrate both of these important tools are nonexistent.

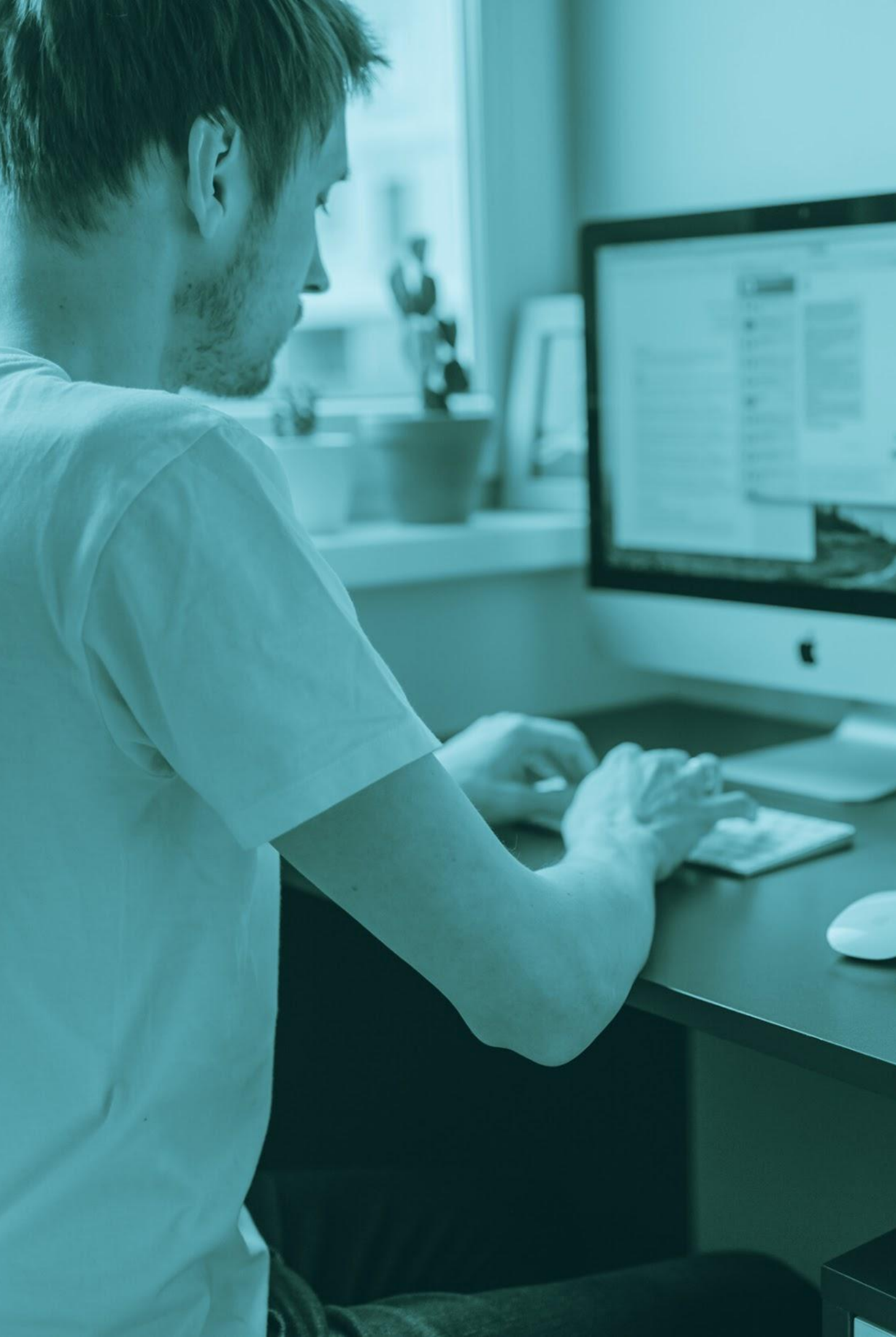


Virtual classroom adoption in the world

AS OF JANUARY 2021

Learning sessions are now conducted online in 95% of schools in the world.





The Role of Interactive Technology in Learning

OPENS UP THE WAY WE TEACH AND LEARN

Interactive tech helps create opportunities for communication. It can encourage teachers and students to communicate more, share and discuss ideas, and collaborate with each other.



Remote learning as the new normal

IT'S IMPORTANT RIGHT NOW BUT IS IT THE
FUTURE?

Remote learning technology has been crucial to education right now, and it will likely be as critical in the future as schools determine the best way they can move forward. Schools can adopt or offer a combination of remote and in-person learning.



Technology is an **effective** tool that can make **education** more meaningful and engaging for teachers and students alike.

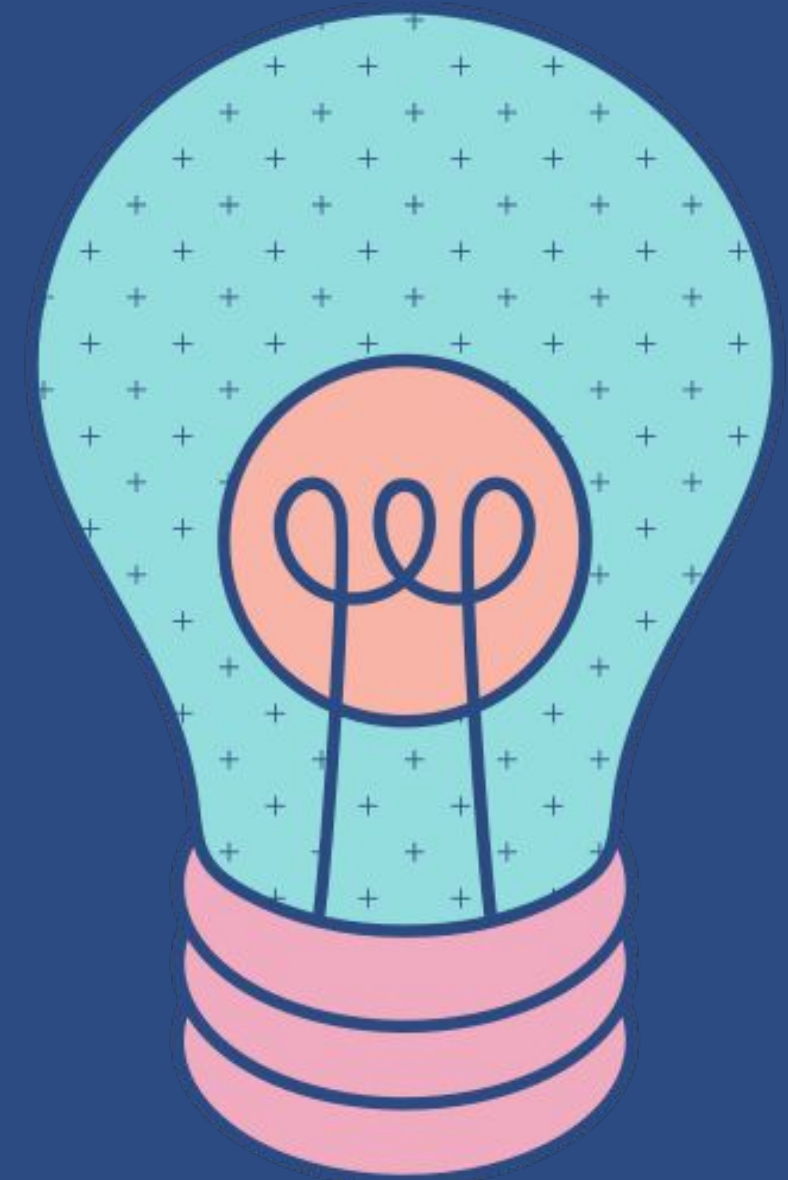


What's Next in Digital Learning

- Online classrooms mean digital learning for everyone.
- A global market for practical courses and credentials.
- Improvement in the quality of blended learning
- Rising demand for skills-based programs.
- Greater investment on interactive technology in solving the digital divide

“We need technology in every classroom and in every student and teacher’s hand, because it is the pen and paper of our time, and it is the lens through which we experience much of our world.”

DAVID WARLICK



Free Resources

Use these free recolorable
icons and illustrations in
your Canva design

