

## Step 1: Install Miniconda

<https://docs.anaconda.com/free/miniconda/index.html>

Pick either the Mac or PC download option and run the file.

## Step 2: Make sure it works

- Open Miniconda and run the 'conda' command to make sure that it is installed.
  - You should see the following.

```
(base) C:\Users\ryanb>conda
usage: conda-script.py [-h] [-v] [--no-plugins] [-V] COMMAND ...

conda is a tool for managing and deploying applications, environments and packages.

options:
  -h, --help            Show this help message and exit.
  -v, --verbose          Can be used multiple times. Once for detailed output, twice for INFO logging, thrice for DEBUG
                        times for TRACE logging.
  --no-plugins           Disable all plugins that are not built into conda.
  -V, --version          Show the conda version number and exit.

commands:
  The following built-in and plugins subcommands are available.

COMMAND
activate      Activate a conda environment.
clean         Remove unused packages and caches.
compare       Compare packages between conda environments.
config        Modify configuration values in .condarc.
content-trust Signing and verification tools for Conda
create        Create a new conda environment from a list of specified packages.
deactivate    Deactivate the current active conda environment.
doctor        Display a health report for your environment.
export        Export a given environment
info          Display information about current conda install.
init          Initialize conda for shell interaction.
install       Install a list of packages into a specified conda environment.
list          List installed packages in a conda environment.
notices       Retrieve latest channel notifications.
package       Create low-level conda packages. (EXPERIMENTAL)
remove (uninstall) Remove a list of packages from a specified conda environment.
rename        Rename an existing environment.
repoquery     Advanced search for repodata.
run           Run an executable in a conda environment.
search        Search for packages and display associated information using the MatchSpec format.
update (upgrade) Update conda packages to the latest compatible version.
```

## Step 3: Create a new environment for the course.

User guide to help: <https://conda.io/projects/conda/en/latest/user-guide/getting-started.html>

- Run 'conda create -n CS5330'

```
(base) C:\Users\ryanb>conda create -n CS5330
Retrieving notices: ...working... done
Channels:
 - defaults
Platform: win-64
Collecting package metadata (repodata.json): done
Solving environment: done

## Package Plan ##

  environment location: C:\Users\ryanb\miniconda3\envs\CS5330

Proceed ([y]/n)? y

Preparing transaction: done
Verifying transaction: done
Executing transaction: done
#
# To activate this environment, use
#
#   $ conda activate CS5330
#
# To deactivate an active environment, use
#
#   $ conda deactivate
```

Step 4: Change working environments.

- Run 'conda activate CS5330'
  - You should see that you change from the 'base' environment to the 'CS5330' environment.

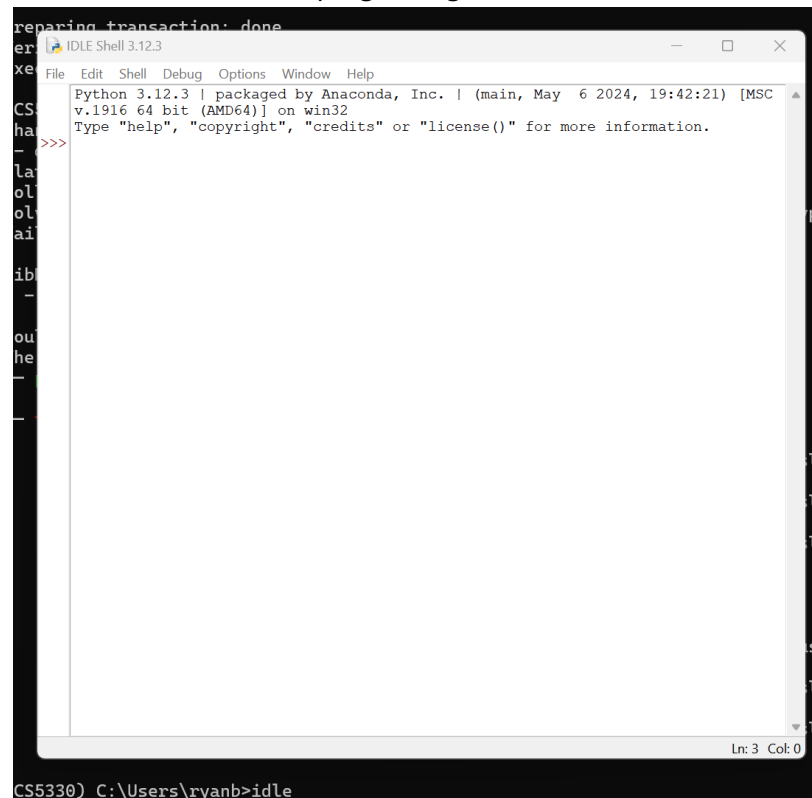
```
(base) C:\Users\ryanb>conda activate CS5330  
(CS5330) C:\Users\ryanb>
```

Step 5: install Python Libraries that will be used during this course.

- Run the following:
  - 'conda install matplotlib'
  - 'conda install numpy'
  - 'conda install pandas'
  - 'conda install opencv'
  - 'conda install pytorch'

Step 6: open IDLE

- Run 'IDLE'
  - This will be what we will programing in for the course.



- Step 7: create a new file and test libraires.
  - In the IDLE shell go to file -> new file

- Should open a blank 'untitled' python file.
- Import the following libraries into your python file and run it:
- If everything is installed correctly you shouldn't see any errors.
- \* **I had issues installing OpenCV with conda. Others do not. For me, it installed the library but was unable find the library when importing it.**
  - **Solution that worked for me: run 'pip install opencv-python' in conda instead of 'conda install opencv'**

```
test1.py - C:/Users/ryanb/CS5330/test1.py
import matplotlib.pyplot as plt
import numpy as np
import pandas as pd
import cv2 #opencv

IDLE Shell 3.12.3
Python 3.12.3 | packaged by Anaconda, Inc. | (main, May 6 2024, 19:42:21) [MSC v.1916 64 bit (AMD64)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>>
===== RESTART: C:/Users/ryanb/CS5330/test1.py =====
>>>
```

Step 8: open an image with opencv

- Download 'testimage1.png' from canvas -> files -> images
- Upload the image to a local file that you can access with python
  - The image should be either in the same folder as your python file or in a folder that is relatively close to make calling the image easier.
- In your python file add the following code to open the image
  - I created a new file called 'images' that I uploaded the image to
  - Your path might be different. (we will go over this in class if you are having issues)

`img = cv2.imread('images/testimage1.png', 0)` #enter the local file path to where you uploaded the image to open it. Mine in in a folder called 'images'

`cv2.imshow('image',img)`

- If everything works you should see the image open on your computer.

