

Algorithms and Data Structures for Data Science

lab_fundamentals

CS 277

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Learning Objectives

Discuss lab structure and acceptable groupwork policies

Review the basics of variable type, conditionals and loops

Review the Jupyter notebook format for autograded assessments

Course Plagiarism Policy

Unless stated otherwise, all assignments are **solo** assignments.

You can discuss ideas with your peers but must write your own code.

<https://courses.grainger.illinois.edu/cs277/sp2023/policy/integrity/>

Never show or share your code to other students!

Is it plagiarism?

Brad discovers that his lab function is consistently failing the random tests. He identifies the edge case he was failing and shares it with all of his friends.

Drshika's good friend is struggling to complete the assignment by the deadline and she decides to help them debug their code. To help her explain a particular bug, she pulls up her code to explain the right way to do the lab.

Setting up your own machine

Lab assignments will (hopefully) all be runnable on Prairielearn

Mini-projects may involve larger datasets or runtimes than PL can handle

You must have **Python3** with **Numpy** and **Matplotlib** installed:

<https://courses.grainger.illinois.edu/cs277/sp2023/resources/own-machine/>

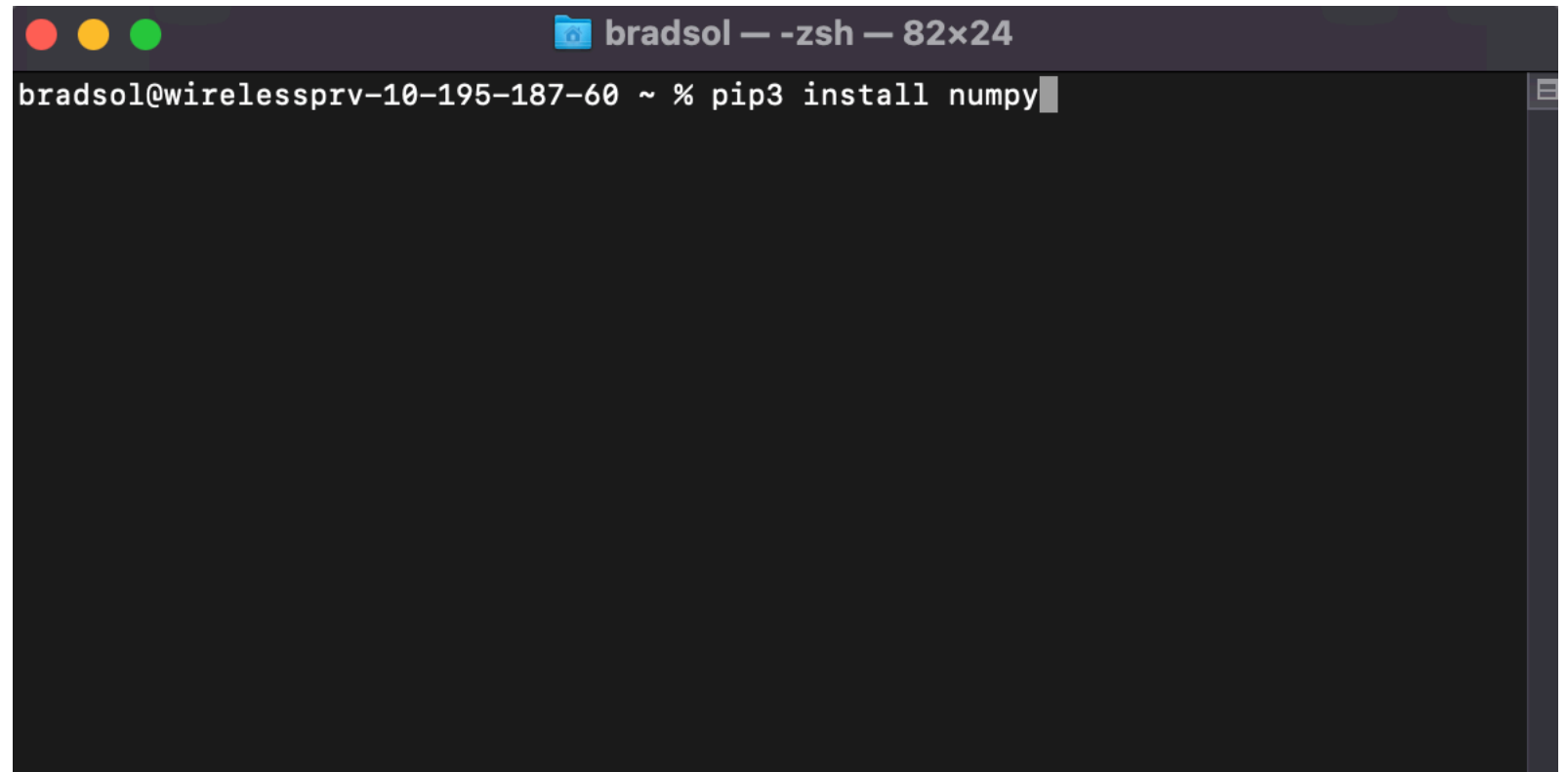
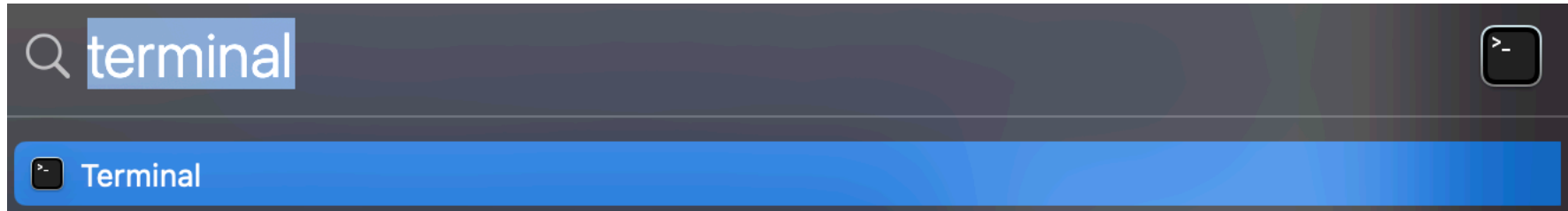
Step 1: Installing Python

Use the official site to download: <https://www.python.org/downloads/>



Step 2: Installing Packages

Pip3 comes standard with Python now so installing packages is easy!



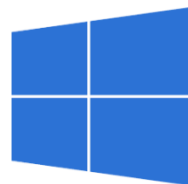
Step 3: Install VSCode

You can use your own code editor but this is recommended:

<https://code.visualstudio.com/download>

Download Visual Studio Code

Free and built on open source. Integrated Git, debugging and extensions.



↓ Windows

Windows 8, 10, 11

| | | | |
|------------------|-----|-----|-------|
| User Installer | x64 | x86 | Arm64 |
| System Installer | x64 | x86 | Arm64 |
| .zip | x64 | x86 | Arm64 |
| CLI | x64 | x86 | Arm64 |



↓ .deb

Debian, Ubuntu

↓ .rpm

Red Hat, Fedora, SUSE

| | | | |
|---------|------------|-------|-------|
| .deb | x64 | Arm32 | Arm64 |
| .rpm | x64 | Arm32 | Arm64 |
| .tar.gz | x64 | Arm32 | Arm64 |
| Snap | Snap Store | | |
| CLI | x64 | Arm32 | Arm64 |



↓ Mac

macOS 10.11+

| | | | |
|------|------------|---------------|-----------|
| .zip | Intel chip | Apple silicon | Universal |
| CLI | Intel chip | Apple silicon | |

Lab Tips

This lab *should* mostly be a review of fundamental concepts.

Give feedback (anonymously or not) about whether this is true!