J233
Advanced Coding

LECTURER
Soo Oh

PROMPTS

- Check in to Poll Everywhere: https://pollev.com/soooh
- Set your phone/laptop to Silent or Do Not Disturb.
- Join the #j233 channel on the J-School Slack

start Zoom recording + captions

Agenda

About J233

BREAK (at some point)

Lecture: Variables

J233

Intros

Course overview

Policies

Grades

Office hours

BREAK

```
$ whoami
soo_oh
```

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What you'll learn

Basic programming principles

How to analyze data in Python

How to make a chart in Python

How to document your code

How to write methodologies

How to make your data analysis reproducible

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What you'll learn

Technology standards

Communication (a.k.a. so-called "soft" skills)

The culture of data (governance, open source, stewardship, sovereignty)

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Recommended prerequisites

Spring 2023 classes

- J220 Intro to Coding with Yoli Martinez and Soo Oh
- J296 Data Journalism with Dana Amihere

Prior experience in Python, R, or other high-level programming language

elective ≠ easy

Time spent on J233 per week (Fall 2022)

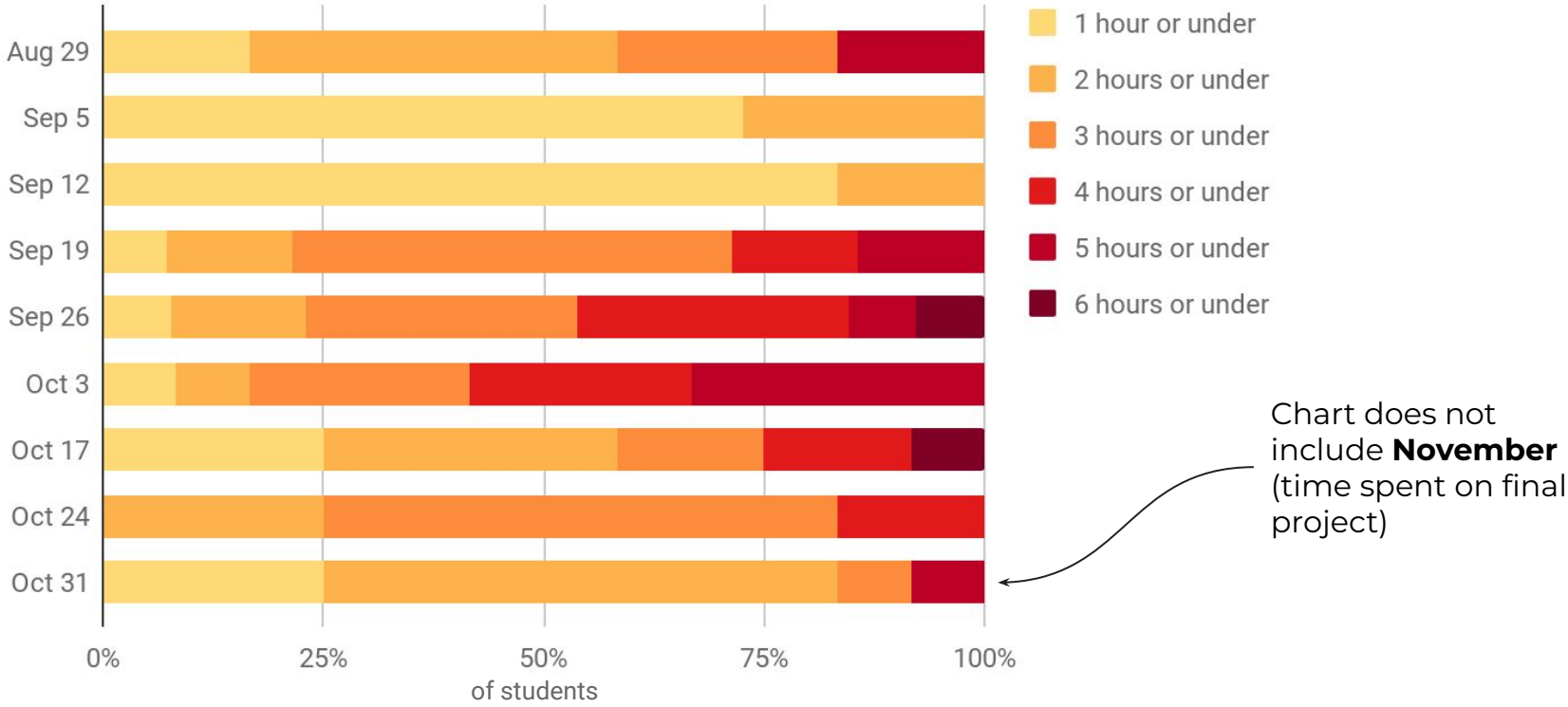

Chart does not include **November** (time spent on final project)

What has been most helpful for your learning?

From last year's students

The **presentation** part of the lecture.

I really can't tell. Feeling I'm struggling all the time.

I have begun to love doing **homework** for this class... I find them highly stimulating and Soo makes it easy to understand the basics. I think that **having the material online**, and the very well created **slides** are all helpful.

The **slides** are clear and **shared before the class**, so I can follow it in class and refer back to it when I get lost.

Working through problems and coding exercises **in class** has been very helpful

Learning the for loops and other functions is very helpful.

Doing homework and **taking notes** and **practicing in in-class notebooks**. And Soo's **office hours**.

I'd say this last lecture when **all the notes were in the notebook** versus slides were really helpful for following along.

Homework critique

I think the **assignment** is very helpful. While doing the assignment, we would also go back and see the slides/python notebook again. Soo's also very helpful when we have problems.

What has caused you the most difficulty in terms of learning?

I think the **project work is slightly hard**, but not in a bad way, as it shows that there is some learning that is occurring.

I took a while **understanding the loops**.

I'm always bound to get stuck somewhere when **doing homework**. What we learned in classes doesn't apply to homework. And it took too much time and energy to solve the homework...

It feels **difficult to ask for help** sometimes - especially as someone new to the coding world.

Not sure. Certain methods are more difficult to learn anyway.

Nothing I can think of yet.

Sometimes I **spend too much time on the work** (or searching on the internet for more information) I feel like I need to shorten the time and learn more efficiently.

Sometimes the **lecture is a bit too fast for me** to catch up, and the **screen in the lecture room is not very clear to see**, bringing some friction for me to process information.

Sometimes **we go a little too fast**, but I understand it's a lot to teach.

What suggestion(s) can you make that would enhance your learning experience?

Have some story ideas in mind before the school starts to get myself more prepared.

I think this will be done later, but I would like to **work on project work examples in class** too to help with understanding the processes.

If the **difficulty level can be distributed more broadly**.

If we could **slow down sometimes** in class that would be helpful. Also perhaps **sharing the lecture notebook**/having the notes be embedded in the notebook.

It will be better to **slow down** and give students more time to ask questions more often.

More guidance on the final project?

More **in-class practice**, like little quiz/poll questions.

More opportunities to work through problems and assignments **in class**

That Soo can **explain things a little slower.**

Why is there always something in the homework that is not covered in classes?

What advice would you give to another student who is considering taking this course?

Definitely take it if you want to learn some practical skills.

Don't change your final project too often through the course of this class, you'll run out of time to do a full analysis of your data.

I'd highly recommend this class to anyone interested in coding or data journalism!

It just introduce you to the tools, but what we learned in the class isn't very helpful in real work.

Very good practice for data analysis! But better have basic knowledge of the process of data analysis (e.g. identify questions, clean dataset...etc)

Syllabus review

https://docs.google.com/document/d/1cBO-A7ETV0iRFcW8P5oSCiq2wHGO2o2kzB24eFNx2uE/edit

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Our agreements with each other

I will post slides ahead of lecture.

I will be available by office hours.

You will keep up with assignments.

You will come to office hours if you're having trouble.

What questions do you have?

Lecture

Variables

What is a variable?

Naming conventions

Reserved keywords

What is a variable?

It’s a name that stores a value.

Variables

What is a variable?

Naming conventions

Reserved keywords

All-capped variables denote constants, or variables that don't change (it's a style across programming languages).

Variables that start with an uppercase letter denote a class — don't use them for now.

For now, start each variable with a lowercase letter.

Variables

What is a variable?

Naming conventions

Reserved keywords

```python
# Python
x = 7
```

```r
# R
x <- 7
```

```javascript
// JavaScript
var x = 7
```

```javascript
// JavaScript/ES6
let x = 7
const x = 7
```

Variables

What is a variable?

Naming conventions

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Variables

What is a variable?

Naming conventions

Reserved keywords

Naming conventions

```
# Python
ucb_age = 153

# R
ucb.age = 153
ucb_age = 153

# JavaScript
ucbAge = 153
```

Variables

What is a variable?

Naming conventions

Reserved keywords

Naming conventions

```
# Python
ucb_age = 153 # snake_case

# R
ucb.age = 153 # historic, risk of confusion
ucb_age = 153

# JavaScript
ucbAge = 153 # camelCase
```

Variables

What is a variable?

Naming conventions

Reserved keywords

Formatting is arbitrary! **`ucbAge`** will work in Python and R, and **`ucb_age`** will work in JavaScript. (EXCEPTION: **`ucb.age`** will break in Python and JavaScript.)

It's like AP style or Chicago style — you have your preferences, but you follow whatever the person in charge wants you to use.

You should follow the code style of the organization.

Variables

What is a variable?

Naming conventions

Reserved keywords

```
# Python reserved keywords
# you can't use these words for variables
False None True __peg_parser__ and as assert async
await break class continue def del elif else except
finally for from global if import in is lambda
nonlocal not or pass raise return try while with
yield
```

1. Download Jupyter Desktop

   https://github.com/jupyterlab/jupyterlab-desktop

2. Download 0828notebook.ipynb from class website

   https://journ233.github.io (scroll to today)

Download Jupyter Desktop

https://github.com/jupyterlab/jupyterlab-desktop

Installation

If you have an existing JupyterLab Desktop installation, please uninstall it first by following the uninstall instructions.

- Debian, Ubuntu Linux Installer
- Red Hat, Fedora, SUSE Linux Installer
- macOS Intel Installer
- macOS Apple silicon Installer
- Windows Installer

Additionally, JupyterLab Desktop can be installed on Windows via winget: `winget install jupyterlab`.

Please check out the Python Environment Customization Guide if you plan to customize the Python environment to add new packages.

There are 2 different installers for Mac — choose the right one!

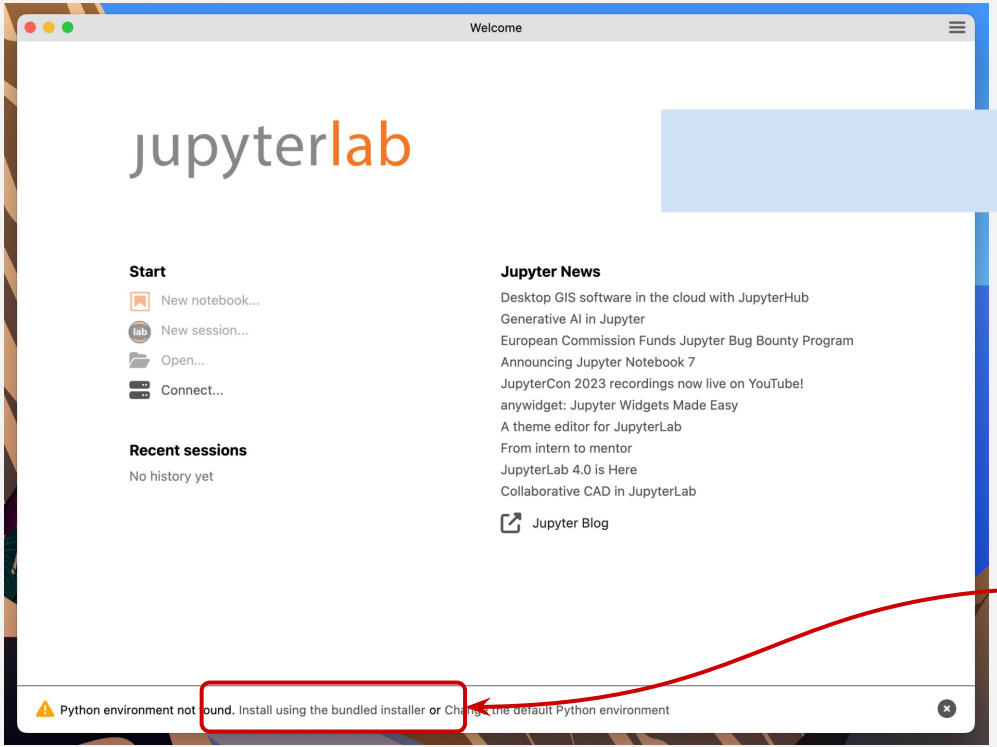
Break

Meet back in 15 minutes.

Let’s install JupyterLab

Screenshare

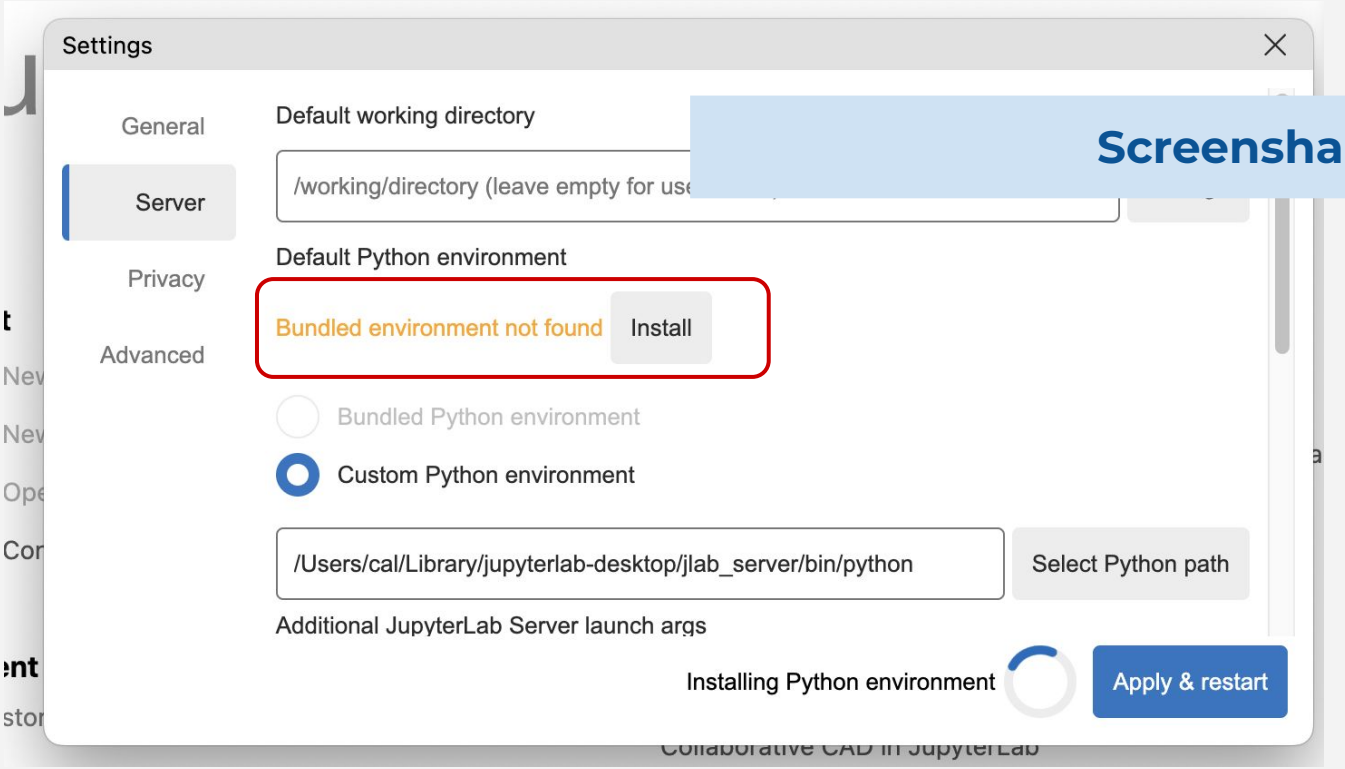
JupyterLab



Screenshare

Install

JupyterLab



Screenshare

JupyterLab

Markdown

Python

- print()
- Commenting out code
- Variables
- input()

Clearing kernel

Download **lecture0828.ipynb** from the class website and open it in **Jupyter Desktop**.

Screenshare

Homework

https://journ233.github.io