
EECS16A Lab

Welcome! We'll be starting at 7:10 PM.

Today's Agenda

- Quick Poll
- About Us
- About Lab: Policies & Overview
- Jupyter Notebook
- Python Bootcamp

Survey Time!

Survey!

- (fill in questions regarding experience, interest, or anything fun)

About Us!

TA Name - Lab TA

- Year, major
- Fun
- Facts
- Interests



Pictures

UCS1 Name - Lab Assistant

- Year, major
- Fun
- Facts
- Interests



Pictures

About Lab!

Semester Outline



Shazam



Imaging



Acoustic
Positioning



Voice
Recognition

Policies

- Labs for this class are not open section, **you must go to your assigned lab section.**
- Credit for each lab is based on completion and checkoff with a lab TA/UCS1 during your assigned lab section.
- In a checkoff, you will demonstrate your work from portions of the lab and answer conceptual questions related to the lab. You should aim to get checked off by the end of your lab section.

Policies

- If (and only if) you attend your lab section for the whole duration but do not finish in time, you may get checked off at the beginning of your next lab section before starting the following lab.

Lab Grade

Number of Labs Missed	What happens?
0 - 2	You get full lab credit (two lab drops)
3	You get half lab credit
4	You Fail the class - final letter grade: F

Buffer Labs

- During buffer lab periods, you may get checked off for only one missed lab that occurred since the previous buffer period.
- No other labs can be checked off.
- The eligible labs for makeup for each buffer lab period are indicated on the course schedule.

Important Notes

- No food or drink is allowed in the lab room! Please eat outside of the lab room.
- When you are done with the lab:
 - Clean up your workspace
 - Log out of your account
 - Turn off the display
 - **Do not turn off the desktop**
- If you need any accommodations, please email eeecs16a.lab@berkeley.edu

Bootcamp Time!

Jupyter Notebook

A web-based interactive computational environment

- Document containing an **ordered list** of input/output cells
- Can contain code, text, mathematics, plots and rich media
- .ipynb file extension
- But what does this look like?

Jupyter Notebook

- Ordered list of input & output

Condit

```
In [ ]: # Example  
  
x = 16  
  
if x >  
    pri  
else:  
    pri
```

```
In [ ]: # Example  
  
x = 16  
  
if x >  
    pri  
elif x  
    pri  
else:  
    pri
```

Jupyter Notebook

- **Ordered** list of **input & output**
- Control/Command + Enter to run current block
- Shift + Enter to run and move forward

Conditional

```
In [1]: # Example 1:  
  
x = 16  
  
if x > 20: #  
    print('i  
else:  
    print('i  
  
if condition
```

```
In [2]: # Example 2:  
  
x = 16  
  
if x > 20: #  
    print('f  
elif x > 10  
    print('f  
else:  
    print('N  
  
first if con
```

Loop-Contr

```
In [3]: # Example 3:  
  
i = 0  
while i < 5:  
    print('i  
    i += 1 #  
  
i: 0  
i: 1  
i: 2  
i: 3  
i: 4
```

Jupyter Notebook

- **Ordered** list of **input** & **output**
- *Order matters!*

```
In [ ]: a = True
```

```
In [ ]: if a:  
        print("hello")  
else:  
        print("goodbye")
```

```
In [ ]: a = False
```

Jupyter Notebook

- **Ordered** list of **input** & **output**
- *Order matters!*

```
In [1]: a = True
```

```
In [2]: if a:
        print("hello")
        else:
        print("goodbye")
```

hello

```
In [3]: a = False
```

Jupyter Notebook

- **Ordered** list of **input** & **output**
- *Order matters!*

In [1]: `a = True`

In [4]: `if a:`
 `print("hello")`
`else:`
 `print("goodbye")`

goodbye

In [3]: `a = False`

Jupyter Notebook

- **Ordered** list of **input** & **output**
- Asterisk means it's still running or it is queued up to run

Loop-

In [*]:

```
# Exam  
  
i = 0  
while  
    i
```

Unlike w

Jupyter Notebook

- Text/Markdown
- Control/Command + Enter to format current block
- Shift + Enter to format current block and move forward

```
# Table of Contents
* \[Overview\](#overview)
* \[Python\](#python)
    * \[Control Flow\](#ctrl)
    * \[List Comprehension\](#lst)
* \[NumPy\](#numpy)
    * \[Arrays\](#arrays)
    * \[Slicing\](#slice)
    * \[Useful Functions\](#funcs)
* \[Miscellaneous Functions\](#misc)
* \[Questions\](#qs)
```

Running Jupyter

- Download the ZIP file from the course website
- Extract the files
- Click on the launch file (Launch.bat) to bring up Jupyter on a local server
- You should see the lab files on a browser window that opens up automatically
- Click on the .ipynb file to start working on the lab!

Python Bootcamp

- Review Python
 - List comprehension
- Introduction to NumPy - scientific computing in Python
 - NumPy functions: `np.linspace`, `np.eye`, `np.transpose`, `np.linalg.inv`, `np.dot`
 - NumPy objects: arrays, matrices
 - NumPy array slicing, array reshaping
 - All the tools you will need for future labs

Python Guide

- Introduction to Python!
- Link in the Lab Notebook (and on the course website)
- Contains fundamental Python concepts and tools that you will need for all EECS 16A Labs
- Not a requirement, but a resource!

Checking-off Today

- Work on Python Bootcamp
- Follow the directions linked at bottom of the lab
 - Fill out Google form
- During checkoff:
 - Introduce yourself: **name, major, year, hobbies**
 - Open the Python Bootcamp
 - Demonstrate how to run a code block
 - Find this presentation on the website

Feedback Time

<https://tinyurl.com/fb-student-fa24>