EECS16A Lab

Find a seat wherever!

Waitlisted Students – wait by the round table

Today's Agenda

- Quick Poll
- About Us
- About Lab: Policies & Overview
- Account Forms
- Anaconda Installation
- Ipython Bootcamp

Survey Time!

About Us!

TA Name – Lab TA

- Year, major
- Fun
- Facts
- Interests

Pictures

ASE Name – Lab ASE

- Year, major
- Fun
- Facts
- Interests

Pictures

Lab Logistics & Policies

- ✘ Go to your registered section.
- ✘ Work in **pairs!**
- ✘ Arrive on time!
- ✘ Individual lab score is binary: complete / incomplete.
- ✘ **Free 16%** of your grade!
- ✘ Should not be stressful!
- ✘ Lab is for lab
- ✘ Buffer Weeks? What are those?
- ✘ Clean up after yourself.
- ✘ Use the Lab Machines.
  - ✗ Unless otherwise directed
- ✘ Do NOT touch/use equipment you are unfamiliar with!
- ✘ Help your peers!

Semester Outline

Imaging Module

Touchscreen Module

Acoustic Positioning Module

“Lab is awesome! It inspired me to start more personal projects.”

-Fall ‘15 student

“I really enjoy lab because it’s the physical manifestation of lecture. Learning about something is one thing, but actually building it is much more rewarding.”

-A hands-on learner

“Even though my lab is at 8am, I always looks forward to going because it's so much fun! It’s like breakfast...for your brain!”

-Actual 16A student...not kidding

IPython 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.
  - But what does this look like?

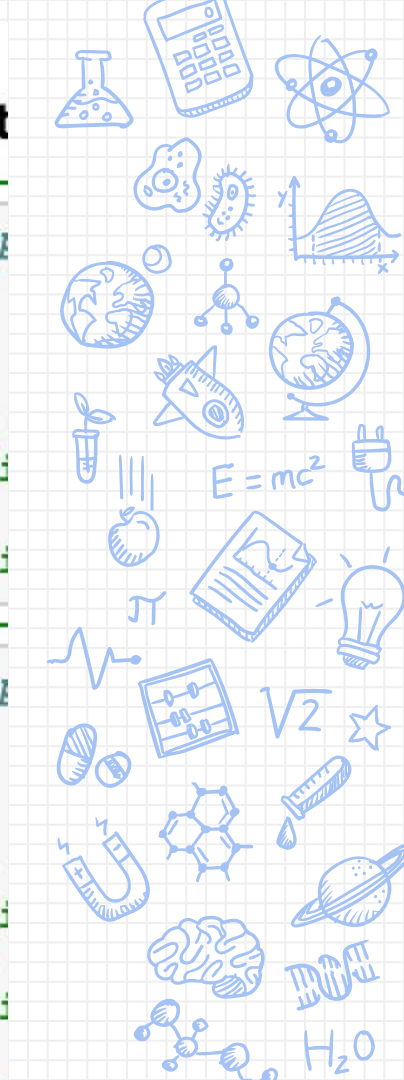
IPython Notebook

- **Ordered** list of **input & output**

Condit

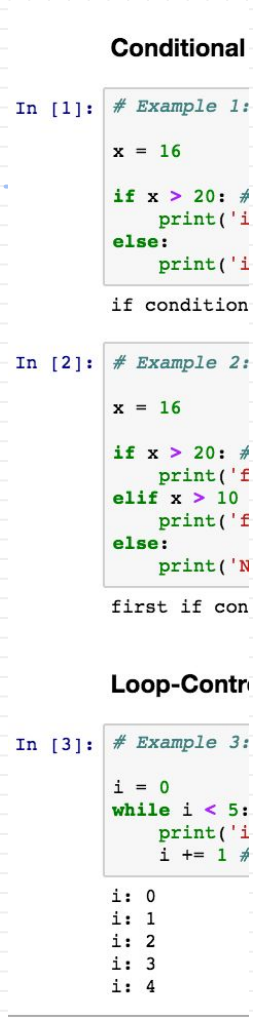
```
In [ ]: # Examp

        x = 16

        if x >
            pri
        else:
            pri
```

```
In [ ]: # Examp

        x = 16

        if x >
            pri
        elif x
            pri
        else:
```



IPython Notebook

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



IPython Notebook

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

```
In [ ]: a = True

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

In [ ]: a = False
```

IPython 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
```

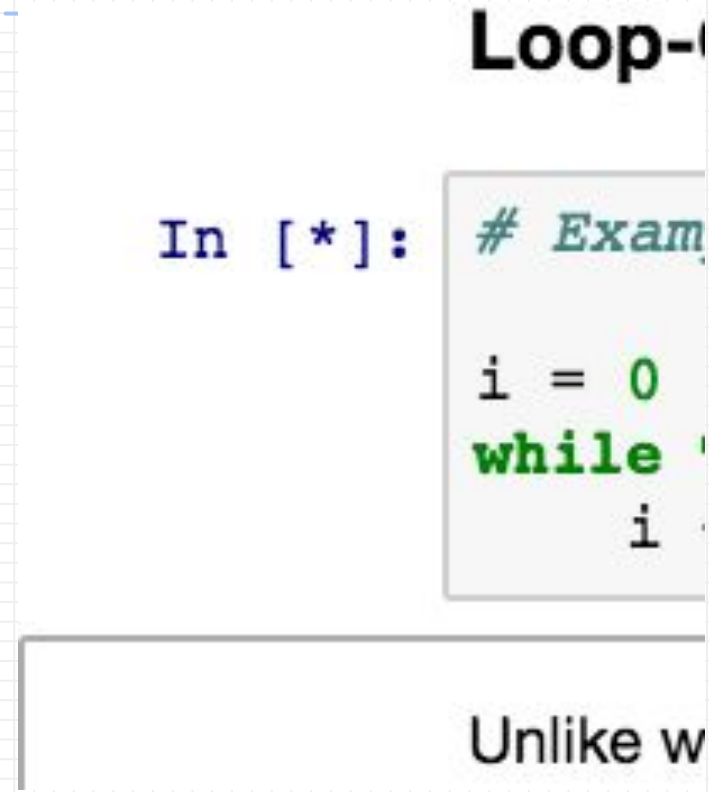
IPython Notebook

- **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
```

IPython Notebook

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



IPython Notebook

- ✘ Text/Markdown
- ✘ Shift+Enter to run and format

```
# 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)
```

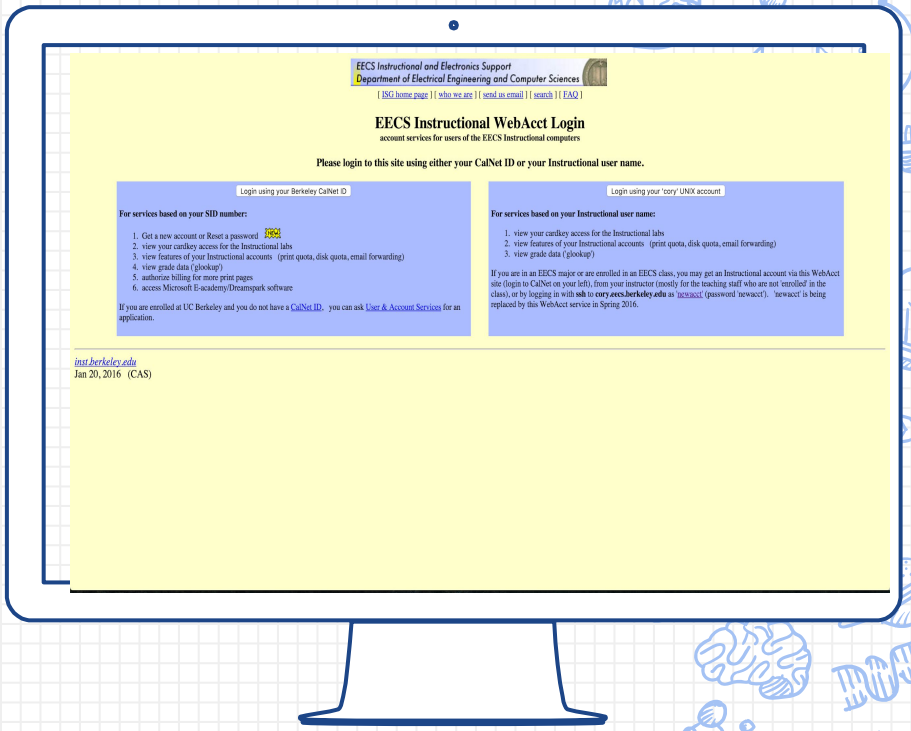
Anaconda Installation

- Go to **https://www.anaconda.com/download**
- Download the **Python 3.7** package for your OS.
- Download **IPython Bootcamp** from the course website.
- Extract the zip file
- Open a terminal window and navigate to **IPython Bootcamp**.

  Run "**jupyter notebook**", wait for the notebook to start, find the notebook you downloaded, open, and verify that it works.

Account Forms

- Go to: **https://acropolis.cs.berkeley.edu/~account/webacct/**
- Click on **Login using your CALNET ID** button.
- Click on **Get new account** button next to EE16A.
- **EMAIL YOUR ACCOUNT FORM TO YOURSELF!**



Opening IPython Notebook

Mac / *nix: Open terminal and type “jupyter notebook”

Windows: Search for “Anaconda Prompt” and then type “Jupyter notebook”

Notes

- Installing on Mac
  - Install to Macintosh HD and not just "for me"
- Installing on GNU/Linux
  - Choose to automatically append the path names
- Windows
  - Only install for your user - not everyone
  - Don't install to a path that has a space in it
  - **Make sure to add to Path when prompted.**
  - Open "Anaconda Command Prompt" and type in "jupyter notebook"

IPython Bootcamp

- Review Python
  - List comprehension
  - Numpy functions: np.linspace, np.eye
  - Numpy objects: arrays, matrices
  - All the tools you will need for future labs

CHECKING-OFF TODAY

- ✘ No graded check-off for IPython Bootcamp
- ✘ Raise your hand/get my attention
- ✘ Introduce yourself
  - ✗ **Name, major, year**
- ✘ Open the IPython bootcamp
- ✘ Demonstrate how to run a code block
- ✘ Work on IPython Bootcamp
- ✘ Find this presentation on the website