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 15%** 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

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

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

✗ Ordered list of input & output

✗ Control + Enter to run current block

✗ Shift + Enter to run and move forward
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
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

```
In [*]: # Example

i = 0
while True:
    i += 1
```

Unlike with
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](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.
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”
Installs 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