Today's Agenda

- Quick Poll
- About Us
- About Lab: Policies & Overview
- Ipython Bootcamp
Survey Time!
About Us!
TA Name - Lab TA

- Year, major
- Fun
- Facts
- Interests

Pictures
Lab Logistics & Policies

- Go to your registered section.
- Work in **groups! (breakout rooms)**
- Arrive on time! Lab presentation at start of section
- Individual lab score is binary: complete / incomplete.
- **Free 15%** of your grade!
- Question and checkoff queue at [lab.eecs16a.org](http://lab.eecs16a.org)
- Lab is for lab
- Help your peers!
- Buffer labs? What are those!?
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
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 filename
✘ But what does this look like?
Jupyter Notebook

✗ Ordered list of input & output
Jupyter Notebook

✗ Ordered list of input & output

✗ Control + Enter to run current block

✗ Shift + Enter to run and move forward
Jupyter Notebook

✗ Ordered list of input & output

✗ Order matters!

In [ ]: a = True

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

In [ ]: a = False
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]: \( a = \text{True} \)

In [4]: if a:
   \[ \text{print("hello")} \]
else:
   \[ \text{print("goodbye")} \]

goodbye

In [3]: \( a = \text{False} \)
Jupyter Notebook

✗ Ordered list of input & output

✗ Asterisk means it’s still running or it is queued up to run
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Running Jupyter Online

✘ You can run Jupyter notebooks online using DataHub, without needing to install anything locally
✘ The DataHub link for each lab is on the course website
✘ Login with your CalNet credentials (berkeley.edu email)
Running Jupyter Online

✘ Select the corresponding lab folder in the directory
✘ Click on the .ipynb file to launch the notebook in another tab
✘ P.S. Remember to hit logout to make sure your work is saved to the cloud
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
✘ Work on IPython Bootcamp
✘ Follow the directions linked at bottom of the lab
   ✘ Fill out google form
   ✘ Submit checkoff request on lab queue (one per group)
✘ In checkoff:
   ✘ Introduce yourself: Name, major, year, hobbies
   ✘ Open the IPython bootcamp
   ✘ Demonstrate how to run a code block
   ✘ Find this presentation on the website