OMIS 30: Intro to Programming (with Python)

Week 1, Class 1

Introduction to Programming

Instructor: Denis Vrdoljak

Learn programming with Python

Goals for the week

- Cover Intros and Intro Material
- Get your tools and environment set up
- Get familiar with the command line

By the end of this, week you should:

- Have Python installed and your IDE set up
- Be able to write a Hello World program in Python, and run it from the command line

About Me

- Master Of Information and Data Science - UC Berkeley
- Master of International Affairs - Texas A&M
- BS, Engineering Physics - SCU, Class of 2005!

- Currently Working as a Data Scientist @ Cisco
- Director of Berkeley Data Science Group
- Data Science Advisor @ UC Berkeley SkyDeck
- Other companies that I've worked at: IBM, Sandisk, Specter Defense, UC Berkeley School of Information

Where to Find Me

- dvrdoljak@scu.edu (note: SCU email not working yet!)
- denisvrdoljak@berkeley.edu

- Office: Lucas Hall, 216ZZ

Office Hours

Instructor	Days available
Yuan Wang (our TA)	M 2:30-3:30p, W 9-10a
Mike Davis (other section's instructor)	Tu 9:30-10:20a, Th 12-1p
Denis Vrdoljak	Tu 3:40-4:40p, W 5-6p

Student Introductions

- Introduce yourself
- Tell us about your background/interests, if any
- Share with us what you hope to get out of this class/why you are here?
  - It's ok if the answer to this last one is "because it's a requirement," or "it looked easier than Physics for Engineers!"
- Share something interesting about yourself-- like what you did this summer, or what you want to do after graduating

Syllabus

https://github.com/denisvrdoljak/OMIS30_Fall2018/blob/master/OMIS%2030%20-%20Intro%20to%20Programming%20Syllabus.pdf

Course GitHub Repository

https://github.com/denisvrdoljak/OMIS30_Fall2018

Instructor and Department Objectives

- Orient students with basic command line skills
- Orient students with basic Python programming skills
- Orient students with coding best-practices & tools

Course Measurables

- Students can run command-line commands.
- Students can write self-contained programs via Python.
- Students can read, interpret, and understand functional code.
- Students can collaborate on code to write a self contained final project.

Course Topics

- Computer setup
- Shell - ls, mv (and rename), cp, paste, pwd,cd, '..',mkdir, rm, touch, echo
- cat, pipe, output redirect (> and >>), 'python --version' (introduce args)
- Python Basics - print, input, math.
- Psuedo-code, algorithm design, comments
- iterables (lists, sets, dicts, strings)
- Loops, Nested Loops, Recursion
- Flow Control (If, else, elif, try, except)
- Functions
- Strings, upper(), lower()
- indexing and slicing iterables
- lists, extending, appending
- mutability
- Jupyter Notebooks

Project Schedule

Week	Assigned	Due
Week 1		
Week 2	Project 1 Assigned	
Week 3		
Week 4	Project 2 Assigned	Project 1 Due
Week 5		
Week 6	Project 3 Assigned	Project 2 Due
Week 7		
Week 8	Project 4 Assigned	Project 3 Due
Week 9		
Week 10		
Finals Week		Project 4 Due

Camino

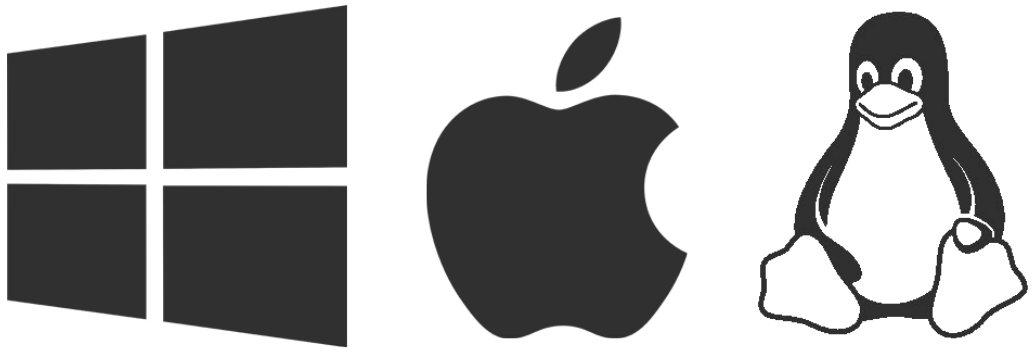
NOTE: Camino is not set up yet! IT's eta to resolve is this Thursday or Friday.

Course Chatroom

- Questions about the material, general HW/project questions, setup related issues, etc. should be posted on Camino.
  - Anything that may be relevant to the rest of the class is encouraged to be asked on Canopy.
  - Individual questions (anything related to grades, absences, or anything confidential) should be directed directly to the instructor.
- Please check the previous questions to see if your question has already been answered.
- Both Instructors and the TA will be answering questions.

Required material

- Laptop running Windows, OSX, or Linux
- Internet Connection



Required software

ANACONDA®

What is Anaconda
Why do we want to use it?

ANACONDA®

Anaconda is a package manager for Python

Spyder, included in the full install, is an open source (free) IDE for Python

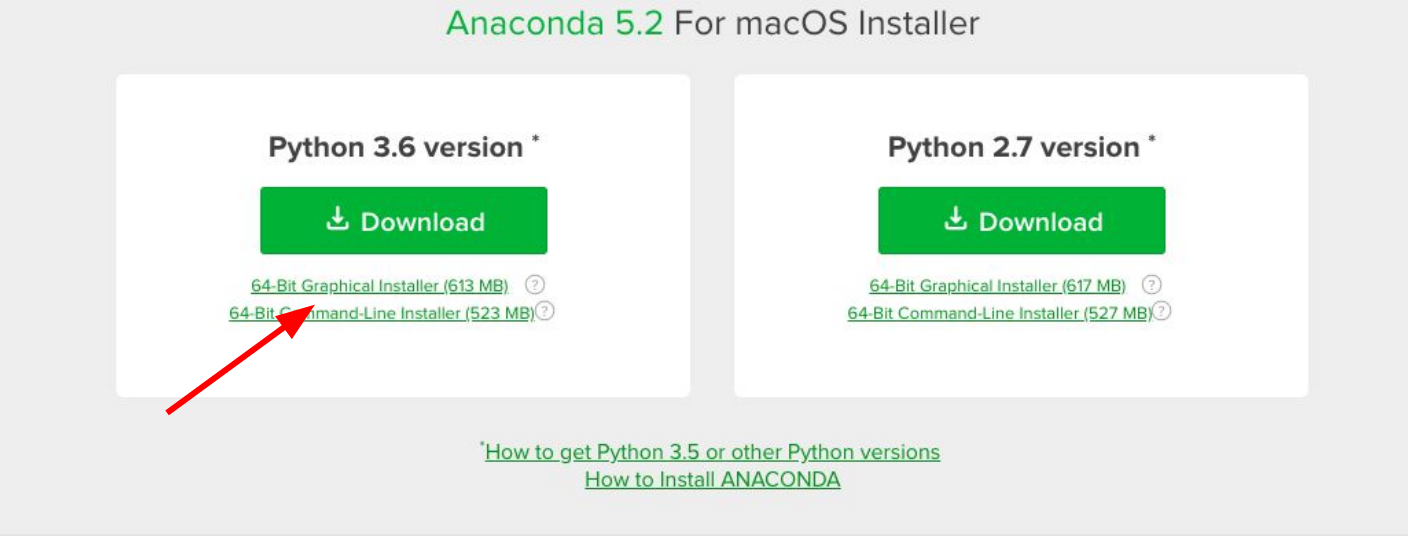
It also includes an install of Jupyter Notebooks, and simplifies setting up

Getting set up

Download from https://www.anaconda.com/downloads/

(make sure to download the 3.6 version)

- The graphical installer is easiest and can be used for mac and PC



Getting set up

Find where you downloaded the Anaconda installer and start the installation process

- The graphical installer it is likely on the downloads folder, just double click it.
- Allow Anaconda to prepend paths, this is likely an unselected checkbox

Homework Logistics

- Due: Before the next class
- Turn-in: Camino (or via email if Camino is not setup)
- Extension Policy:
  - With prior approval only.
- Late Grading Policy:
  - Don’t be late! But, if you have, you must have prior approval, or have an excused absence.
- Questions on a grade:
  - Message the Instructors Privately

Homework 1.1

- Install Anaconda on your machine
  - Submit a screenshot of the Anaconda Navigator Running
- Submit a short introduction and what you hope to learn from this course (1 paragraph max)
- Take the google survey (about what OS and programming experience you have)

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Email this homework to: denisvrdoljak@berkeley.edu

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- Submit a short introduction to yourself and what you hope to learn from this course (1 paragraph max)
  - email to denisvrdoljak@berkeley.edu
- Survey:
  - https://goo.gl/forms/T6EBefwNIvG4EiAN2