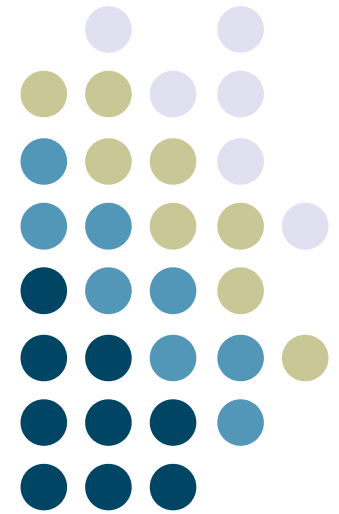


# Welcome to CS 6452!

## Prototyping Interactive Systems

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**Georgia  
Tech**



# Agenda

- Introductions
- Motivation for the class
- Structure of the class
- Class content
- Getting started with Python



# Now it is your turn

- Name
- Degree program
- Your experience programming
- Other relevant experience related to computing
- Why are you interested in this class?
- What one thing did you do this summer that you never did before?



# Big Decision for today

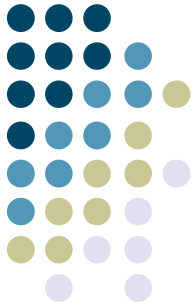
- Do you **NEED** to be in this class?
- Do you **WANT** to be in this class?
- Ask questions in class **TODAY** to help you figure this out.

# Class Website



<http://www.kedwards.com/cs6452>

# T-square site



A screenshot of a web browser displaying the T-square site. The browser's address bar shows the URL: https://t-square.gatech.edu/portal/site/gtc-1b1a-74ff-5b0d-9311-c879b64231d5/page/ea5358cd-9679-4af6-bc72-0d8b. The page features a navigation bar with tabs for "My Workspace", "CS-6452-A", "CS-7450-A", "CS-1331-A1,A2,A3,A4,A...", "CS-8001-VDE SPR16", "CS-8001-VIS, LMC-8801 ...", "CS-7450-A FALL15", and "My Active Sites". Below the navigation bar, there are three main sections: "COURSE TOOLS" on the left, "SITE INFORMATION DISPLAY" in the center, and "RECENT ANNOUNCEMENTS" on the right. The "COURSE TOOLS" section includes links for Home, Syllabus, Announcements, Resources, Assignments, Gradebook, Email Archive, Roster, Site Info, Section Info, Statistics, Piazza, Wiki, and Help. The "SITE INFORMATION DISPLAY" section shows "CS 6452 - Prototyping Interactive Systems". The "RECENT ANNOUNCEMENTS" section has an "Options" button and a message stating "There are currently no announcements at this location." At the bottom of the page, there is a copyright notice: "Copyright 2003-2011 The Sakai Foundation. All rights reserved. Portions of Sakai are copyrighted by other parties as described in the Acknowledgments screen. T-Square - gatech-sakai-2-8-x-10 - Sakai 2.8.x (Kernel 1.2.5) - Server pinch9.lms.gatech.edu".



# Preliminaries

- Laptops
  - Bring to each class
  - Will use in lab exercises, etc.
  - Please leave closed otherwise
- You are responsible for checking on t-square and course website regularly for assignments and class preparation

# What does Prototyping Interactive Systems mean, anyway?



- Rapid creation of interactive systems through programming
- Exposure to a variety of modern programming activities
- Some theory, mostly pragmatic, with some exposure to developing skills to describe and defend design choices



# Original motivation for 6452

- Computing requirement for HCC Ph.D. programming
  - Basic level of competency in building programs yourself
  - Confidence in assessing and learning new programming paradigms, tools and languages
  - Learn about software architectural design considerations (e.g., how solutions are put together and assessing options)
  - Should help you satisfy the computation portfolio requirement
    - Technical reading/writing/doing/talking

# Class is now popular beyond HCC



- Mostly masters students
- Exposure to programming if you haven't had any
- Lots of variability in experience/skill with programming
  - That's OK, but think about whether you will be "bored" by this class
  - There is a more advanced UI programming course offered

# Class Content

1. Programming in Python
    - Coding, data structures, tools, etc.
    - Data access, manipulation, and visualization
    - Manipulations on the web
  2. Object-oriented programming in Java/Processing
    - Coding, tools, etc.
    - Event-driven GUI programming
  3. Physical prototyping and hardware
    - 3D printing and laser cutting
    - Arduino
- ... Maybe a few extras along the way

# Grading Criteria

## OLD:

In-class participation	20%
Readings	10%
Programming assignments	70%

## NEW:

In-class participation	20%
Programming assignments	80%

(We'll fold the reading portion into the homework assignments)

# Style of class

- Some/most of classes will have a studio model to them
  - Review of a reading or a quick idea
  - In-class, hands-on activity (individual or small group)
  - Reflection

# Quick poll. Who has experience with ...



- Python
- Processing
- JavaScript
- Java
- Swing or JavaFX
- iOS app development (Swift)
- 3D printing, laser cutting
- Arduino



# Python

- Our first programming language to examine
- Interpreted, interactive
- Includes object-oriented capabilities, but not what many Python programs use (not what it's known for)
- Loads of libraries
- Useful for web tasks

# Python



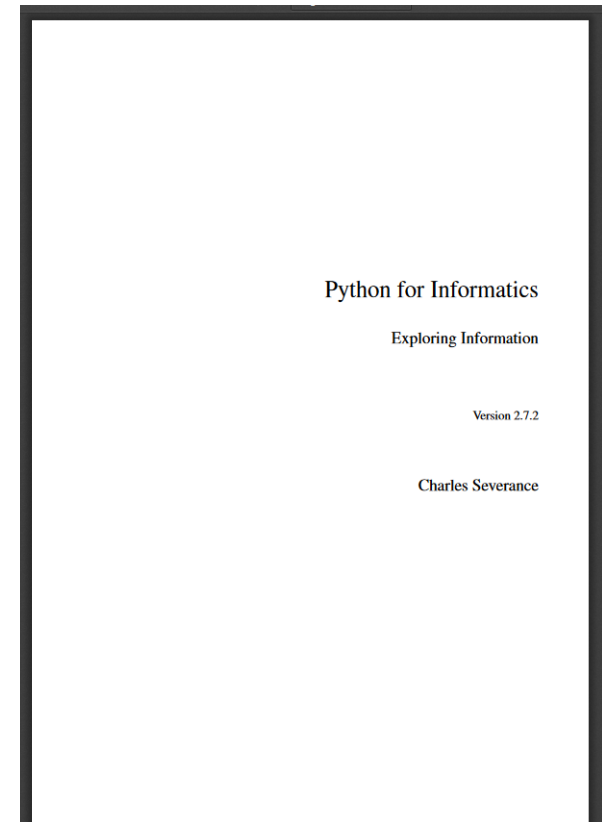
- “In-between” versions 2 and 3
  - Some subtle but important changes to the language



# Resources

- Borrow or buy a book (any good one will do)
- Free online text

<http://do1.dr-chuck.net/py4inf/EN-us/book.pdf>



# Informal HW

## Getting ready for next time

- Install Python on your laptop
  - Mac folks – Should already have version 2.7
  - Windows folks – Get version 2.7 from web