Module 12
Wrap up
CS 106 Winter 2016

Module 01
Processing Recap
- Values
- Types
- Expressions
- Statements
- Declarations
- Classes and objects

Module 02
Input/Output
- The filesystem
- Reading and writing images
- Reading and writing illustrations
- Reading and writing text

Module 03
User Interfaces
- Model-View-Controller
- Direct manipulation, hit testing
- User interface toolkits
- ControlP5
Module 04
Physics and Animation
• Why look at physics?
• Newton’s first law; simulating constant speed
• Newton’s second law; gravity, sliding, springs, damping
• Newton’s third law; collisions
• Physics in 2D
• Physics engines, Fisica
• Animation principles and easing

Module 05
Geometric Context
• Why use geometric context?
• translate(), rotate(), scale()
• pushMatrix(), popMatrix()
• Combining transformations
• Hierarchical modelling

Module 06
Three-dimensional graphics
• Simple 3D primitives: box() and sphere()
• Geometric contexts in 3D
• Loading and displaying 3D models
• PeasyCam

Module 07
Recursion and fractals
• What is recursion?
• Three properties of every recursive function
• Using recursion to draw simple fractals
Module 08
Randomness and noise

- Random numbers aren't random()
- randomSeed()
- noise()
- Combining recursion and randomness

Module 09
The shape of data

- What can we do with large amounts of data?
- Raw text
- Sequences
- Dictionaries
- Tabular data
- Hierarchical data
  - Graph-structured data

Module 10
Text processing

- Using String and Character methods
  - split(), splitTokens(), equals(), startsWith(), endsWith(), ...
- Storing words in dictionaries
  - Regular expressions

Module 11
Structured data

- Loading tables, working with their contents
- Loading JSON Objects and Arrays, working with their contents
- Using Web APIs
The final exam
- Wednesday, April 13th, 9:00am–11:30am, PAC 11/12
- Similar in style to past exams
- Memorization is not the key

Study aids
- The midterm
- Last year’s midterm and final
- Assignment and lab questions
- Last year’s assignment and lab questions
- Practice programming exercises
- Clicker questions
- Final exam review
- Midterm review, last year’s reviews
- Your imagination

Practice on paper, not just in Processing

Processing problems
- Geared more towards practice than teaching
- Java is becoming a bit problematic
- But still a fun, practical tool, and useful for designers