CS117
Intro to Computer Science

- Course objectives, policies, procedures
- What we'll cover this term
- What is CS?
- Intro to objects

What we'll cover this term

- Intro to computer science concepts, using Java as the vehicle
- Intro to object-oriented programming
- Problem-solving: moving from problem statement to algorithm (method of solving) to program
- Example topics: graphics, searching, sorting, numbers, output, ...

What is CS?

- Difference between CS, software engineering, Computer engineering, IT
  - Computer engineering: traditionally hardware- and systems-based
  - IT: applications of technology to business, etc --- USAGE
  - Software engineering: how to write better programs --- METHODOLOGY (part of CS, but not the whole of CS)
  - CS: theory AND practice

Intro to objects

- Example: cat
  - What are the features of a cat? --- variables
  - What do cats do? --- methods
- A cat is an example of a class
 Instances of classes

- A specific cat
  - Has a name
  - Has features: fur color, eye color, breed --- variables
  - Does things: eat, sleep, certain tricks --- methods
- A specific cat is an example of an object

 Class and instance methods, variables

- All cats have certain features: whiskers, 2 ears, a tail. --- class variables
- Some features are specific to a certain cat: name, fur color, breed --- instance variables
- Some variables never change: a cat always has one tail --- constant

 Inheritance

- There are different breeds of cats
  - Domestic shorthair
  - Siamese
  - Ragdoll
- Each breed has specific features, actions (i.e. Siamese are smart, Ragdolls are friendly, Sphynx have no hair)
- Each breed is a subclass of cat