

# Computer Science 136

## Data Structures

### Lecture #2 (September 13, 2021)

## Notes:

1. Announcements:
    - (a) Make sure you've started reading the text.
    - (b) Make sure your credentials work!
    - (c) Combination to all locks is: 3-9-2-7-8-1. Try logging into various machines.
    - (d) Questions?
  2. Reviewing the `Hello, world.` program.
  3. Extending to many people (using a loop).
    - (a) Iterator-based for loop. Uses `String` objects.
    - (b) Traditional for loop. Uses `int` primitives.
  4. Adding punctuation (using an if).
  5. Writing a static method: gcd. Euclid's algorithm. Uses recursion.
  6. Picking random integers using a `Random` generator from `java.util` package.
  7. Writing a very simple object: a *Counter*. One mutator: `bump` increments. One accessor: `getCount` accesses private instance variable.
  8. Counting the number of pairs of random values that are relatively prime. This percentage is  $\frac{6}{\pi^2}$ . Thus: a way of approximating  $\pi$ !
  9. Thought question: how would you construct an object that, when given a stream of integers, one at a time, keeps track of the maximum value seen? How about the two largest values seen? How about 10 largest values seen?
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