CompSci 6
Introduction to Computer Science

December 1, 2011

Prof. Rodger
Announcements

• Read for next time Chap 11.3-11.6
• RQ on Blackboard
  – Due before class next time
• Assignment 7 due 12/6
• APT 6 due 12/8
Comparison

• Linear Searches vs Binary search
• If there are N elements in the list
  – In the worst case, how many elements do you need to look at to find an item?
  – What is the fewest number?
  – What happens as N gets larger in both cases?
Thinking about Sorting
Jannie Tan

• Is sorting important?
• Is it a common problem?
• In what contexts do you encounter sorting?
Selection Sort

• Step 1: Find the minimum value
• Step 2: Swap it with the value in the first position
• Step 3: Keep going until the list is sorted
Selection Sort picks the Smallest!

SSS!
Correctness

• Why is algorithm correct?
Efficiency

• Is this algorithm efficient?
Code

• Let's code it!
Insertion Sort

- Maintain a sublist of sorted elements.
- For each item one at a time, insert it into the sorted sublist.

- N elements total
- How long does insertion sort take?
Insertion Sort

- 11 8 3 17 22 12 9 5
InsertionSort vs SelectionSort

• How do these compare?