Inspecting Code

- /home/staff/mvanmoer/Public/CSC220/Spring2016/examples/AlgoAnalysis/
- Count up simple operations
  - consider these all $O(1)$, constant
- Account for loops/recursion
- Find the dominant term
Improving algorithms

• Quadratic to Linear, $O(n^{**2})$ to $O(n)$
  • prefix_averages.py

• Cube to Quadratic, $O(n^{**3})$ to $O(n^{**2})$
  • disjoint.py

• Quadratic to Superlinear, $O(n^{**2})$ to $O(n \log n)$
  • unique.py
  • ($n \log n$ also called supralinear, linearithmic, quasilinear)
Analyzing Recursion

- recursive_expt.py
- Recursive function calls itself
- Alternate iterative pattern to loops
- Also used for moving through data structures
- Some languages (not Python) use tail recursion