

Tips for increasing the actual performance

COMP.CS.300 Data structures and algorithms 1

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Design/implementation

- **Pseudocode/designing**

- *Estimate* of asymptotic performance
- Asymptotically best algorithm choices

- **Implementation/coding**

- As efficient implementation as possible
- Optimization often affects only the constant coefficient (*still important!*)

Improving asymptotic performance

- Choose the asymptotically best algorithm
- Avoid doing unnecessary work
 - Choose an algorithm that only does what is needed
- Make sure that used containers etc. provide the asymptotic performance that the algorithms expect

Tips for optimizing the actual performance

- Avoid doing the same thing again and again (when not necessary)
 - Store (intermediate) results
 - Use pointers etc.
- Remember often used (small) results
 - They don't have to be calculated again
- Sharing data vs. copying
- Doing a "small" thing on the side of a larger thing