

CS 305
Design and Analysis of Algorithms

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Today's Topics

- Questions/Comments?
- Quicksort
 - vs. Mergesort
 - Divide and conquer
 - Partitioning
 - Best case analysis
 - Worst case analysis
 - Randomized algorithm
- Probability
 - Sample space
 - Event
 - Elementary event

Quicksort / Partition examples

- Problem with MergeSort is space is $\text{BigTheta}(n)$
- Quicksort is a divide and conquer algorithm that works in-place (that is, with space $\text{BigTheta}(1)$)
- Example on the board of Partition function
- Pseudocode for Partition
- Pseudocode for Quicksort
- Randomized Quicksort
- Then start discussion of Probability