Algorithms & Complexity 4/7/17

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ANNOUNCEMENTS

Topic: Recurrences

PowerPoint: <http://home.adelphi.edu/~siegfried/cs344/344l10.pdf>

* Recurrence relations occur with **Divide and Conquer** problems
* Ex: Towers of Hanoi, Merge Sort, Binary Search. All of these usually use recursion

How do we solve a divide-and-conquer problem? One method is to **guess** a logical solution, and try to prove it by **induction**. Induction can be very useful as it uses a recurrence relation, and eventually stops at some simple case (base case). Try to formulate a guess with small cases first and then test them on bigger ones.

**Recursion trees** are a common method used to solve recurrence relations.