CS 145 – Foundations of Computer Science

Professor Eric Aaron

**Lecture** – T R 3:10pm  
**Lab** – M 3:10pm

**Lecture Meeting Location:** OH 162  
**Lab Meeting Location:** SP 309

---

**Business**

- HW6 due April 25 / April 26  
  - (as always, see assignment sheet for exact deadlines)  
  - **Extension on HW6?**

- Reading: Makinson, Ch. 5; next up: Ch. 6  
  - We may not cover all the material in chapter 6, but it’s worth reading anyway

- Grading update

- Scheduling make-up lecture?
Counting 3—Repetition

• Using the counting ideas from combinations and permutations…

• Exercises
  – How many ways are there to rearrange the letters in the word \textit{banana}?
  – (I.e., how many different strings can be formed from those letters?)

(As always, explain your answer, including the way you model the situation)

Counting 3—Repetition

• Using the counting ideas from combinations and permutations…

• Exercises
  – How many ways are there to arrange the letters in the word \textit{banana}?
  – In general, if we have an $n$-letter word made up of $k$ different letters, how many ways are there to arrange the letters in that word (i.e., how many strings can be formed)?
Counting Cards

- What’s the number of 5-card hands can be dealt from a standard 52-card deck (standard 4 suits, 13 cards each; no jokers)?
- Number of 5-card hands with 4 of a kind?
- Number of 5-card hands with a full house (i.e., a 3 of a kind and a pair for its 5 cards)?
- Number of 5-card hands with a flush (i.e., all cards having the same suit)?