CS 145 – Foundations of Computer Science

Professor Eric Aaron

Lecture – T Th 9:00am
Lab – F 10:30am

Lecture Meeting Location: SP 309
Lab Meeting Location: SP 309

Business

• HW6 due Nov. 23 / Nov. 24 (see HW sheet)

• Lab 7 tomorrow
• Lab 6 due by end of the day today

• Reading: Makinson, Ch. 5
• Document on structural induction now available from course website (follow the Additional Notes link)
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}?

(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 rearrange 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 rearrange the letters in that word?
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)?