

Course: CS5961/6951
Instructor: R. F. Riesenfeld
Date: 25 Jan 2010
Due: Wed 27 Jan 2010

Computational Statistics

Sp 2010

Assignment 1 *Combinatorics*

- A. Suppose one has an ample supply of colored beads and a string, the tools for making a bead necklace.
 - i. Specifying bead color and juxtaposition, and the like, develop some rule(s) for creating a particular style of necklace made with 100 beads. It can have a repeating fundamental pattern.
 - ii. Clearly illustrate a scheme for counting the possible number of distinct necklaces that can be made from an adequate supply of beads and strings. The idea here is to create a nontrivial counting problem, and then present a solution for it.

- B. Using a kind of pseudo-code develop and describe an algorithm for creating all the permutations of n distinct objects. Give an example for some small n that demonstrates that it works correctly.