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# Query Optimization

## 5. Exercise, Summer 2009

Due 2009-05-27.

1. Consider the initial sequence  $\langle 1, 2, 3, 4 \rangle$  and the random permutation generation from the lecture.
  - (a) Give the rank of the sequence  $\langle 1, 4, 2, 3 \rangle$
  - (b) Give the 19th sequence (i.e., the results of unranking 19)
2. Show that the unranking function  $UnrankTree$  is bijective.
3. Write a program that takes two arguments  $i$  and  $n$  and produces the  $i$ -th combination of  $n$  brackets.