CMSC858W - Homework 2
Due: Tuesday, March 9, 2009

1. Given a suffix array A, prove that $LCP(A[i], A[j]) = \min_{k \in [i, j-1[} LCP(A[k], A[k+1])$.

2. Given a string S, a maximal repeat R is a triple (i, j, l) such that S contains the same string of length l starting at both coordinates i and j, and this string cannot be extended on either the left or right side (S[i-1] != S[j-1], S[i+l+1] != S[j+l+1]).

Given a string S of length n, and an integer k, describe an O(n + k) algorithm for reporting the k longest maximal repeats in S, using a suffix array.

3. Same as 2 but with a suffix tree.