

Problem Set 7
CPSC 311 Analysis of Algorithms
Andreas Klappenecker

The assignment is due next Wednesday, November 16, before class.

Solve the following exercises from the textbook; note that the book distinguishes between problems and exercises.

1. Recall that in reconstruction step of the Burrows-Wheeler transform, one constructs a permutation ρ with the help of the last column L and the first column F . The permutation ρ maps the position of a character c in L to a position of a character c in F . If a character c occurs several times, then the i -th occurrence of c in L is mapped by ρ to the i -th occurrence of c in F .

Prove that $F[\rho^k(i)]$, $1 \leq i \leq n$, yields the $k+1$ -st column. [Hint: What can you say about the rows in the sorted array that begin with the same letter?]

2. Ex 17.1-2
3. Ex 17.1-3
4. Ex 17.2-2
5. Ex 17.3-2 (corrected)
6. Ex 24.1-1

Make sure that you structure your answers well. Please typeset your solutions in \LaTeX or turn in a neatly written solution.