Department of Computing and Information Systems
COMP90038 Algorithms and Complexity Tutorial Week 11

Plan

This week your priority is probably Assignment 2, but also have a go at a handful of the following exercises.

The exercises

1. Use Horspool's algorithm to search for the pattern GORE in the string ALGORITHM.
2. How many character comparisons will be made by Horspool's algorithm in searching for each of the following patterns it the binary text of one million zeros?
   (a) 01001
   (b) 00010
   (c) 01111
3. Using Horspool's method to search in a text of length n for a pattern of length m, what does a worst-case example look like?
4. For the input 40, 60, 37, 84, 42, 18, 30, and hash function $h(K) = k \bmod 11$,
   (a) construct the open hash table (separate chaining).
   (b) find the largest number of key comparisons in a successful search in this table.
   (c) find the average number of key comparisons in a successful search in this table.
5. For the input 40, 60, 37, 84, 42, 18, 30, and hash function $h(K) = k \bmod 11$,
   (a) construct the closed hash table.
   (b) find the largest number of key comparisons in a successful search in this table.
   (c) find the average number of key comparisons in a successful search in this table.