CpSc 2120 — Goddard

Revision before Test 3

(a) Give a suitable Node class for a template linked list.

(b) State the two standard operations for a dictionary, and give their (worst-case) running times in a hash table.

(c) If derived class Chicken extends base class Egg, what happens when we create a new Chicken() ?

(d) Suppose we have a hash table with 1000 buckets, and starting empty, 20 values are added that all want to use bucket 0. In which bucket does the last value added end up (i) using chaining, (ii) using linear probing, and (iii) using quadratic probing.

(e) Name one sort guaranteed to run in $O(n \log n)$ time and one sort not guaranteed to run in $O(n \log n)$ time.