
Theory I, Sheet 5

Submission: hand in by 22nd June 2011 before 16:00

- The solutions should be submitted in English.
- You must work on your own and write down your own solution. This does not exclude occasional discussions with your fellow students, but solutions copied from other students will not be accepted.

Exercise 5.1 - Hashing: chaining

[Points: 4]

Insert the keys 8, 12, 15, 16, 19, 38, 27, 5, 21, 49, 65, 42 into a hash table with collisions resolved by chaining. Let the table have 15 slots and let the hash function be $h(k) = k \bmod 15$. Show the resulting table.

Exercise 5.2 - Hashing: open addressing

[Points: 2+2+2]

Consider an empty hash table of size 15. Insert the following keys

8, 12, 15, 16, 19, 38, 27, 5, 21, 49, 65, 42

using $h(k) = k \bmod 15$ and:

1. Linear probing.
2. Quadratic probing.
3. Double hashing with $h'(k) = 1 + (k \bmod 13)$.

Give the resulting tables.