Hashing

Jonathan Windle

University of East Anglia

J.Windle@uea.ac.uk

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Overview I

Intro

- Technique for performing insertions,deletions and finds in a dictionary in constant average time.
- **Hash table:**
  - An array, T of some fixed size is used to store the keys.
  - `size` referres to the size of T.
  - $S = \{0, 1, ..., size - 1\}$
- **Hashing function:**
  - $h : K \to S$.
  - Suppose K is the set of 6 digit non-negative integers, then a possible (but poor) choce for h is:
$$h(k) = k(mod 1000)$$
- **Collisions:**
  - A collision occurs when two keys hash to the same location in the hash table:
    $h(k) = h(k')$.
  - Want to choose the hash function to minimise the chance of collisions.
  - Need to decide how to handle collisions when they do occur.

The End