CS 008
Lecture notes
4/25/24

1 Direct Access Arrays and Hash Tables

1.1 Outline

- Pre-Lecture questions

2 Pre-lecture questions

Important note with AVT Trees:

Big lecture question: Is it possible to execute the function $find(k)$ any more quickly than $O(log(n))$?

3 Word RAM model

Any region of memory can be accessed in $O(1)$ complexity time. In reality it is not but for the most part this statement is true. In the word RAM model, anything that is within 64-bits is within $O(1)$. When we work with a data structure with n elements, $n < 2^w$. For most computers, $w = 64$ and we call this a **word**. Memory is divided into w-bit chunks and each chunk can be read and written in $O(1)$.

4 Comparison model of computation

The comparison model of computation is more restrictive than the Word RAM Model. Like what the name implies, the comparison model can only perform comparisons (==, !=, ¡, ¿, ł)