

## CS 240 Tutorial 7 - Extendible Hashing Notes

What if the hash-table isn't big enough? What if we need to use the disk?

- We use an extensible hash table
  - it is good for hashing to disk
  - it is an alternative to B-trees

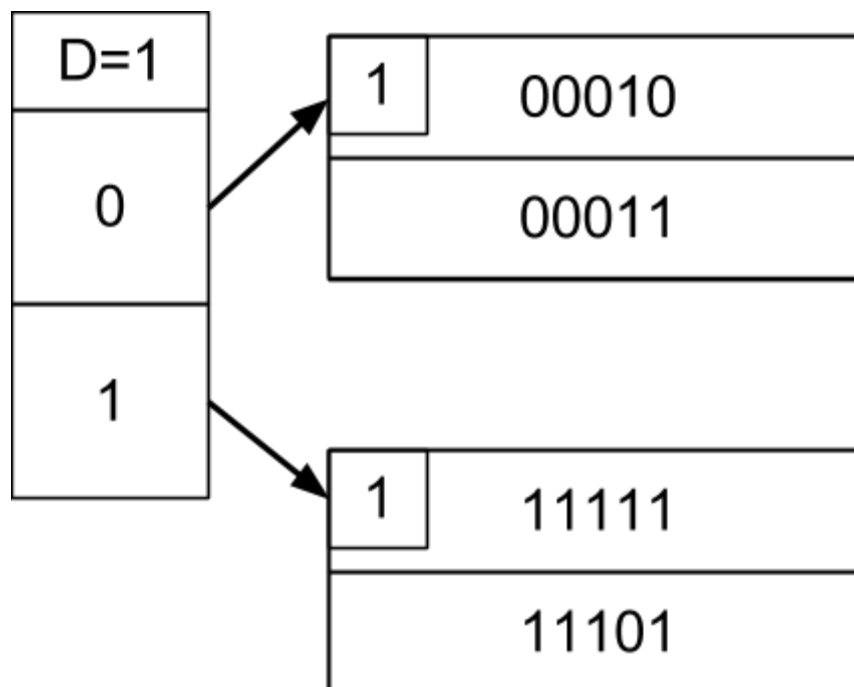
2-Levels:

- On disk
  - blocks containing records
  - for our example blocks can hold at most 2 records (i.e.  $S = 2$ )
- In Memory
  - hash-table containing pointers to disk blocks

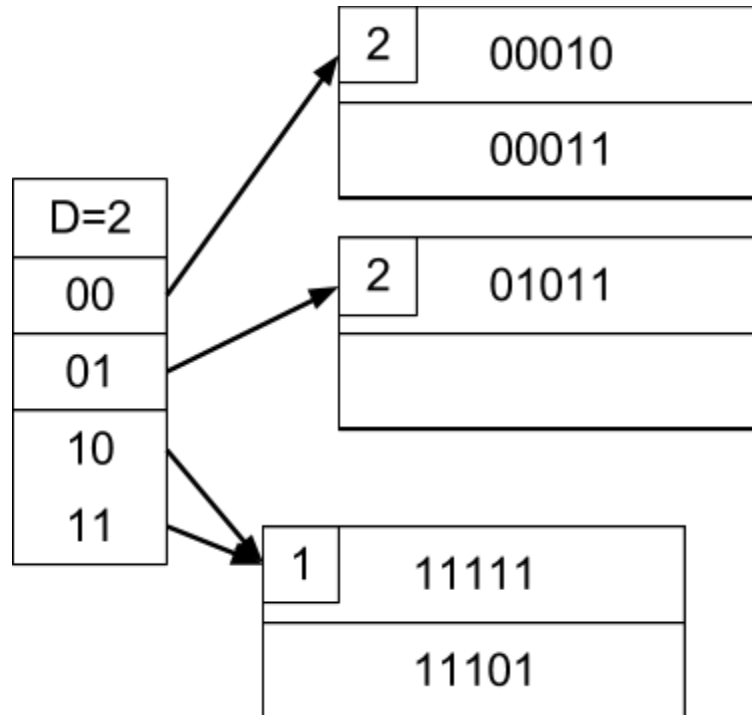
Example: Insert the following keys into an extendible hash table

00010 11111 00011 11101 01011 10111 01101 10011 00111 10001

00101



Now upon trying to insert 01011 we run out of room in the block, so now we must add another level(increase the value of d to 2, d stands for depth), make sure to note how many extra blocks are added and also note how the number in the top left corner is affected. Both 10 and 11 are pointing to the same block since it hasn't been split yet



Continue inserting the rest of the keys using the same rules. When inserting the next one after this 10111 the bottom bloc (which is of depth 1 has to split as well).