

hash tables

HASH TABLE: A BUNCH OF BUCKETS WITH DATA INSIDE

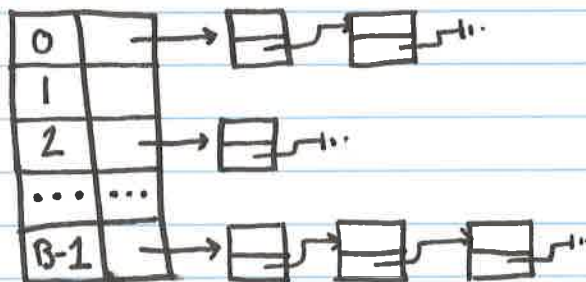
HASH FUNCTION: THE FUNCTION THAT DECIDES WHICH BUCKET DATA GOES IN

BUCKETS: COLLECTIONS OF DATA

WHAT MAKES A GOOD HASH FUNCTION?

- EVEN DISTRIBUTION ACROSS BUCKETS
- HASHED DATA HAS A CONNECTION TO ORIGINAL DATA

OPEN HASH TABLE



- AN ARRAY OF BUCKETS
- EACH CONTAINS A LIST OF DATA

CLOSED HASH TABLE

| | |
|-----|--|
| 0 | |
| 1 | |
| 2 | |
| ... | |
| B-1 | |

- EACH BUCKET HOLDS ONE VALUE
- IF A BUCKET IS FULL, DATA MOVES TO NEXT OPEN BUCKET
- IF TABLE BECOMES FULL WITH NO EMPTY BUCKETS, YOU MUST RESIZE HASH

RESIZING A HASH TABLE

- 1) CREATE A NEW HASH TABLE AT TWICE THE SIZE OF THE OLD ONE
- 2) UPDATE HASH FUNCTION WITH NEW AMOUNT OF BUCKETS
- 3) REHASH DATA WITH NEW HASH FUNCTION INTO NEW HASH TABLE