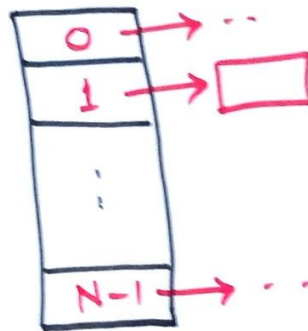


Hash-Based Indexing

- Static ✓
- Dynamic

Static Hashing

- * $0, 1, \dots, N-1$ buckets
- * Buckets store data entries.



primary
bucket
pages

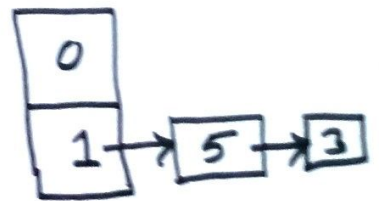
overflow
pages.

Search: Apply hash, h ,

$$h(r) = r \pmod{N}$$

$$h(3) = 3 \pmod{2} = 1$$

$$h(5) = 5 \pmod{2} = 1$$



Use directory of pointers to buckets

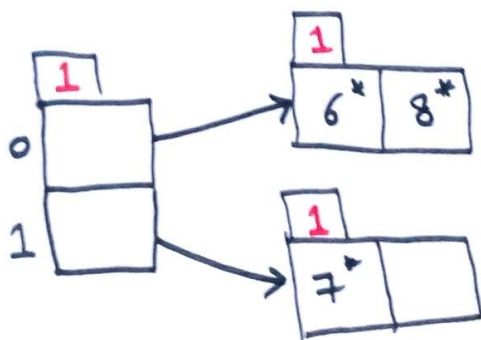
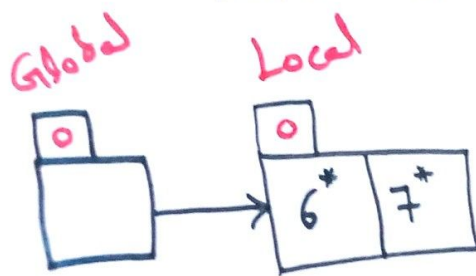
→ Double the size of no. of buckets
just by doubling the directory
and split the bucket overflowed.

$$h(r) = r \bmod 2 = \{0, 1\}$$

Q: Add. 6, 7, 8, 10

bucket size is 2.

Sol:



d - depth

Global }
Local }

6 - 110

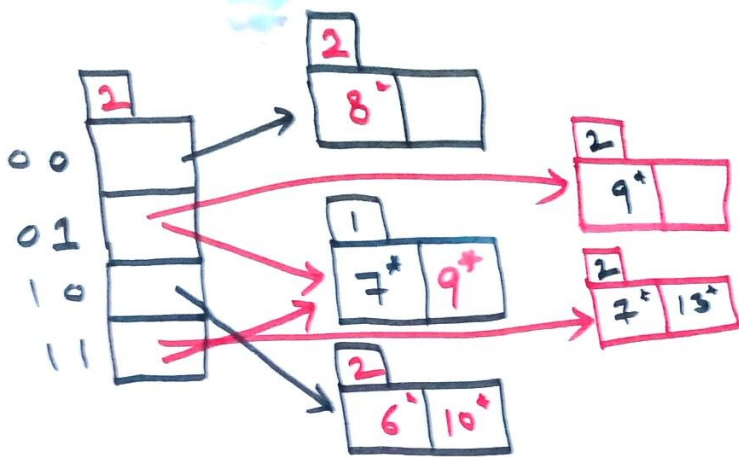
7 - 111

8 - 1000

10 - 1010

9 - 1001

13 - 1011

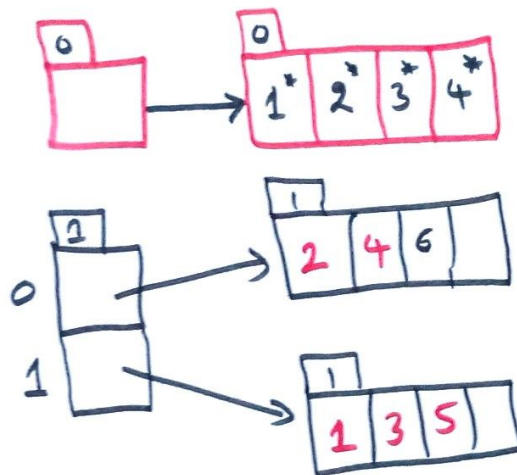


Bucket size 4.

$$h(r) = r \pmod{4} \in \{0, 1, 2, 3\}$$

Static sizes.

Q: Add: 1, 2, 3, 4, 5, 6, 7, 8, 9 ~~Static~~ Dynamic Hashing



Add - 5 $(101)_2$

1 - 001

2 - 010

3 - 011

4 - 100

Add - 6 $(110)_2$

class participation

Quiz - 07

Add 6, 7, 8, 9.