

Problem 9.1 (a)

$\langle 3, 10, 2, 4 \rangle$

Q: Apply the double-hashing

$m = 5$

$$h_1(k) = k \bmod 5$$

$$h_2(k) = 7k \bmod 8$$

$$A : \Rightarrow h(k, i) = h_1(k) + i \cdot h_2(k)$$

general function

$$\begin{aligned} \langle 3 \rangle \quad h(3, 0) &= h_1(k) + 0 \\ &= 3 \bmod 5 \\ &= 3 \end{aligned}$$

$$\begin{aligned} \langle 10 \rangle \quad h(10, 0) &= h_1(k) + 0 \\ &= 10 \bmod 5 \\ &= 0 \end{aligned}$$

$$\begin{aligned} \langle 2 \rangle \quad h(2, 0) &= h_1(k) + 0 \\ &= 2 \bmod 5 \\ &= 2 \end{aligned}$$

$$\begin{aligned} \langle 4 \rangle \quad h(4, 0) &= h_1(k) + 0 \\ &= 4 \bmod 5 \\ &= 4 \end{aligned}$$

| T |    |
|---|----|
| 0 | 10 |
| 1 |    |
| 2 | 2  |
| 3 | 3  |
| 4 | 4  |

$(m-1)$

Note: As there are NO collision  $i$  remains 0  
therefore  $h_2(k)$  is useless in this case.

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