

## Hash-Based Technique.

$$C_2 \Rightarrow \begin{array}{ll} \{I_1, I_2\} = 4 & \{I_1, I_4\} = 1 \\ \{I_1, I_3\} = 4 & \{I_3, I_5\} = 1 \\ \{I_1, I_5\} = 2 & \{\cancel{I_1, I_5}\} \\ \{I_2, I_3\} = 4 & \{I_3, I_4\} = 0 \\ \{I_2, I_4\} = 2 & \{I_4, I_5\} = 0 \\ \{I_2, I_5\} = 2 & \end{array}$$

$$\text{Hash Function} = h(x, y) = \{(\text{order of } x) \times 10 + (\text{order of } y)\} \bmod 7$$

$$\text{For } \{I_1, I_2\} \quad x=1; y=2.$$

$$h(1, 2) = (10 + 2) \bmod 7 = 5$$

$$\{I_1, I_3\} \Rightarrow h(1, 3) = (10 + 3) \bmod 7 = 6$$

for  $\{I_1, I_5\} \Rightarrow$

$$h(1, 5) = (10 + 5) \bmod 7 = 1$$

for  $\{I_2, I_3\} \Rightarrow$

$$h(2, 3) = (20 + 3) \bmod 7 = 2$$

for  $\{I_2, I_4\} \Rightarrow$

$$h(2, 4) = (20 + 4) \bmod 7 = 3$$

for  $\{I_2, I_5\} \Rightarrow$

$$h(2, 5) = (20 + 5) \bmod 7 = 4$$

for  $\{I_1, I_4\} \Rightarrow h(1, 4) = 0 ; h(3, 5) = 0$

Bucket Address	0	1	2	3	4	5	6	
Bucket contents		$\{I_1, I_5\}$	$\{I_1, I_4\}$ $\{I_3, I_5\}$ $\{I_1, I_5\}$	$\{2, 3\}$ $\{2, 3\}$ $\{2, 3\}$ $\{2, 3\}$	$\{2, 4\}$ $\{2, 4\}$ $\{2, 4\}$	$\{2, 5\}$ $\{2, 5\}$ $\{2, 5\}$	$\{I_1, I_2\}$ $\{I_1, I_2\}$ $\{I_1, I_2\}$ $\{I_1, I_2\}$	$\{1, 3\}$ $\{1, 3\}$ $\{1, 3\}$ $\{1, 3\}$
Bucket count	2	2	4	2	2	4	4	