

1. (2015)

Table size = 13

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Inserting 1

$$\begin{aligned}h_0(1) &= 1 \% 13 \\&= 1\end{aligned}$$

	1											
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Inserting 5

$$\begin{aligned}h_0(5) &= 5 \% 13 \\&= 5\end{aligned}$$

	1				5							
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Inserting 18

$$\begin{aligned}h_0(18) &= 18 \% 13 \\&= 5 \text{ collision!}\end{aligned}$$

$$\begin{aligned}\text{hash}_2(18) &= 7 - (18 \% 7) \\&= 3\end{aligned}$$

$$\begin{aligned}\therefore h_1(18) &= (5 + 1 \cdot 3) \% 13 \\&= 8\end{aligned}$$

	1				5			18				
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Inserting 8

$$\begin{aligned}h_0(8) &= 8 \% 13 \\&= 8 \text{ collision} \\ \text{hash}_2(8) &= 7 - (8 \% 7) \\&= 6\end{aligned}$$

$$\begin{aligned}\therefore h_1(8) &= (8 + 1 \cdot 6) \% 13 \\&= 1 \text{ collision}\end{aligned}$$

$$\begin{aligned}h_2(8) &= (8 + 2 \cdot 6) \% 13 \\&= 20 \% 13 \\&= 7\end{aligned}$$

	1				5		8	18				
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