

1. (2019)

Quadratic probing $f(i) = i^2$

		2	3			6				
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 (Size 11)

With $\text{hash}(x) = x \% \text{Table Size}$

Add 13

$$h_0(13) = 13 \% 11 \\ = 2 \text{ collision}$$

$$h_1(13) = (13 + 1^2) \% 11 \\ = 14 \% 11 \\ = 3 \text{ collision}$$

$$h_2(13) = (13 + 4) \% 11 \\ = 17 \% 11 \\ = 6 \text{ collision}$$

$$h_3(13) = (13 + 9) \% 11 \\ = 22 \% 11 \\ = 0$$

13		2	3			6				
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Add 24

$$h_0(24) = 24 \% 11 \\ = 2 \text{ collision}$$

$$h_1(24) = 25 \% 11 \\ = 3 \text{ collision}$$

$$h_2(24) = (24 + 4) \% 11 \\ = 6 \text{ collision}$$

$$h_3(24) = (24 + 9) \% 11 \\ = 33 \% 11 \\ = 0 \text{ collision}$$

$$h_4(24) = (24 + 16) \% 11 \\ = 7$$

13		2	3			6	24			
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Delete 3

Find 3 : $h_0(3) = 3 \% 11 \\ = 3 \text{ found!}$

13		2	DELETED			6	24			
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Add 14

$$h_0(14) = 14 \% 11 \\ = 3$$

13		2	14			6	24			
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Final array

13		2	14			6	24			
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