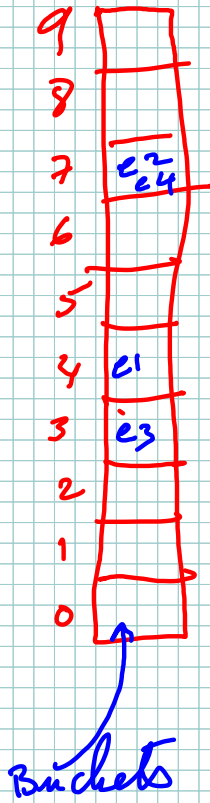


Key  $\xrightarrow{\text{HASH FUNCTION}}$  Index

# HASH TABLE

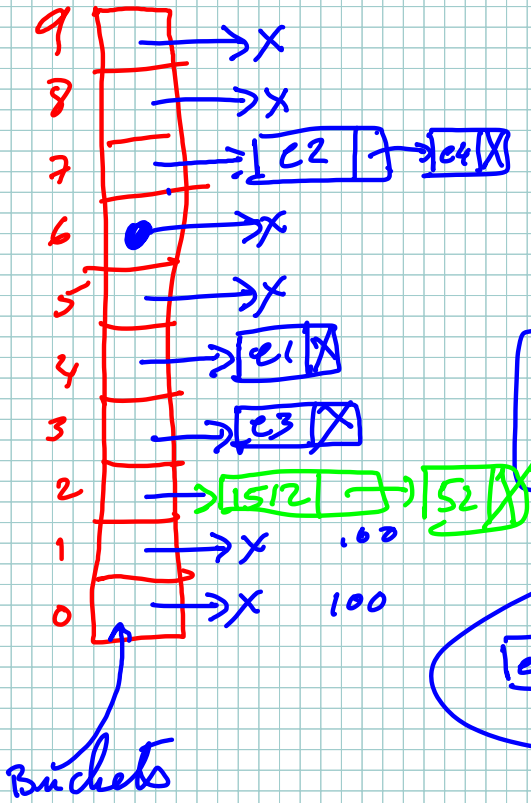
Has 10 Buckets



- $e_1$  Key  $\rightarrow$  index 4
- $e_2$  Key  $\rightarrow$  index 7
- $e_3$  Key  $\rightarrow$  index 3
- $e_4$  Key  $\rightarrow$  index 7

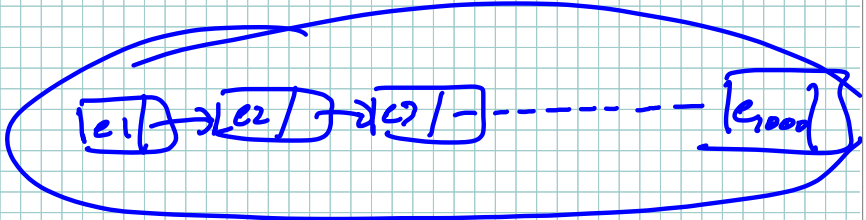
# HASH TABLE

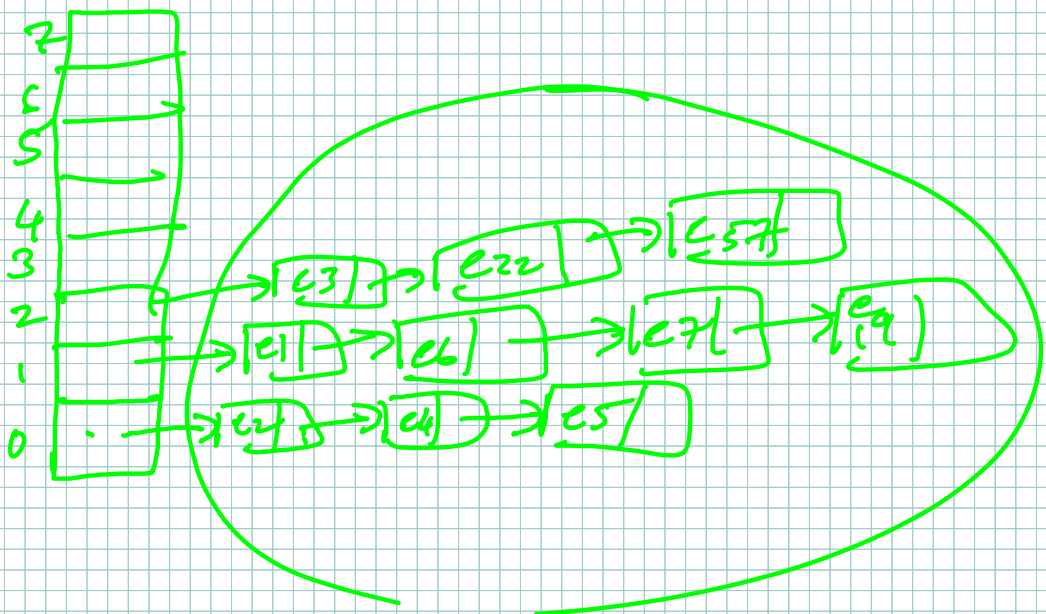
Has 10 Buckets



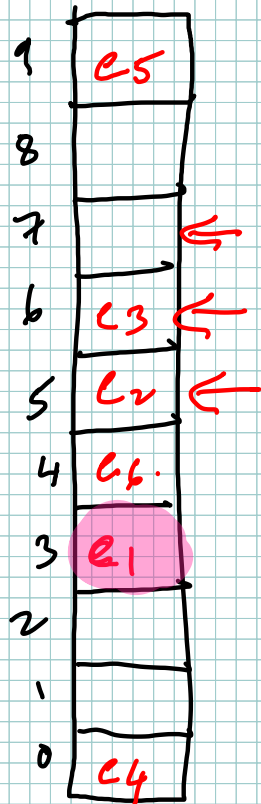
- $e_1$  Key  $\rightarrow$  index 4
- $e_2$  Key  $\rightarrow$  index 7
- $e_3$  Key  $\rightarrow$  index 3
- $e_4$  Key  $\rightarrow$  index 7

Key  $\% 10 =$  index  
simple Hash Function



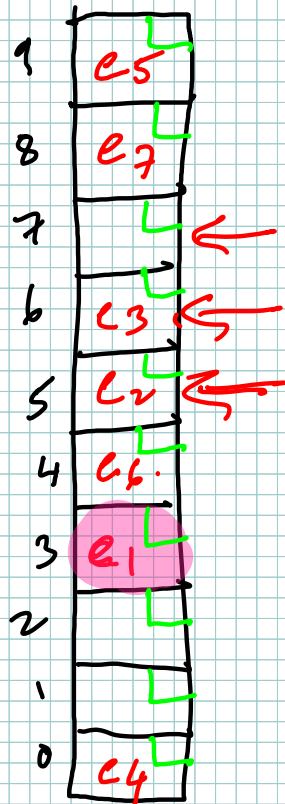


✓



Key  $e_5$   $\xrightarrow{\text{hash}}$  3  
 call him  
 & start  
 searching  
 (4) 5, 6, ...

looking for  $e_7$   
 Key  $e_7$   $\xrightarrow{\text{hash}}$  5, 6, 7

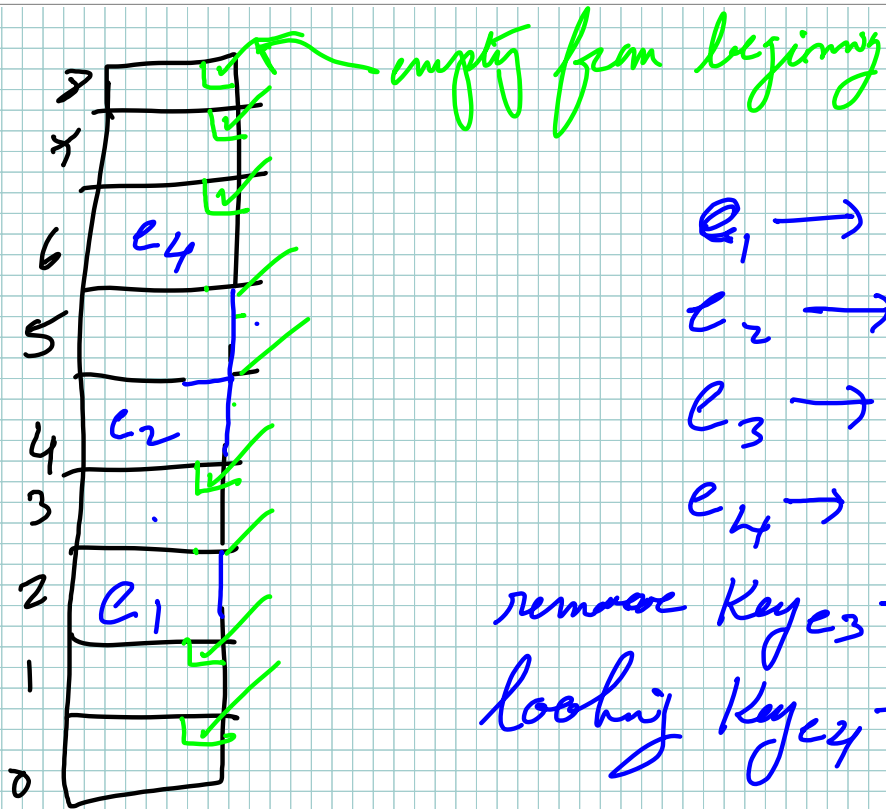


Key  $e_1 \xrightarrow{\text{hash}} 3$   
 call him  
 & start  
 searching

(4) 5, 6, ...  
 Key  $e_8 \xrightarrow{\text{hash}} 6, 7$   
 Key  $e_7 \xrightarrow{\text{hash}} 5, 6, 7, 8$

remove Key  $e_8 \rightarrow 6, 7$

looking for Key  $e_7 \xrightarrow{\text{hash}} 5, 6, 7$



$$e_1 \rightarrow 2$$

$$e_2 \rightarrow 4 \quad \dots$$

$$e_3 \rightarrow 4, 5$$

$$e_4 \rightarrow 2, 5, 6$$

remove  $key_{e_3} \rightarrow 4, 5$

looking  $key_{e_2} \rightarrow 4, 5, 6$