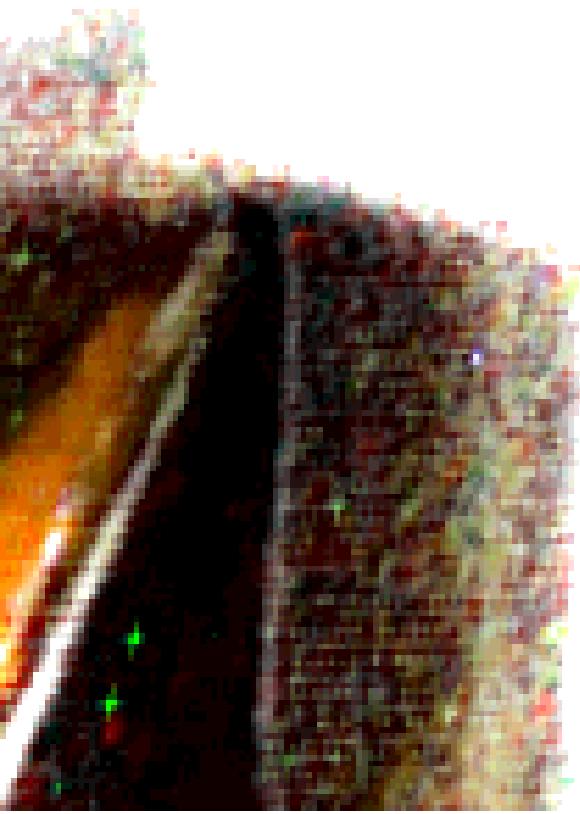




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HOLA

HOLA

$A: \Sigma^* \rightarrow \Sigma^*$

$\text{tiempo}_A: \Sigma^* \rightarrow \mathbb{N}$

$A: \Sigma^* \rightarrow \Sigma^*$

$\text{tiempo}_A: \Sigma^* \rightarrow \mathbb{N}$

$n \mapsto$ ~~mat~~

$$A: \Sigma^* \rightarrow \Sigma^*$$

$$\text{tiempo}_A: \Sigma^* \rightarrow \mathbb{N}$$

$$\cdot n \rightarrow \max \left\{ \text{tiempo}_A(w) / w \in \Sigma^* \text{ y } |w|=n \right\}$$

$$\sum \text{tiempo}_A(w)$$

$$A: \Sigma^* \rightarrow \Sigma^*$$

$$\text{tiempo}_A : \Sigma^* \rightarrow \mathbb{N}$$

$$\cdot n \rightarrow \max \left\{ \text{tiempo}_A(w) / w \in \Sigma^* \text{ y } |w|=n \right\}$$

$$\frac{1}{k^n} \sum_{w \in \Sigma^n} \text{tiempo}_A(w) \quad k = |\Sigma|$$

$$A: \Sigma^* \rightarrow \Sigma^*$$

$$\text{tiempo}_A: \Sigma^* \rightarrow \mathbb{N}$$

$$\cdot n \rightarrow \max \left\{ \text{tiempo}_A(w) / w \in \Sigma^* \text{ y } |w|=n \right\}$$

$$\frac{1}{k^n} \sum_{w \in \Sigma^k} \text{tiempo}_A(w) \quad k=|\Sigma|$$

$$A: \Sigma^* \rightarrow \Sigma^*$$

$$\text{tiempo}_A : \Sigma^* \rightarrow \mathbb{N}$$

$$\cdot n \rightarrow \max \left\{ \cdot \text{tiempo}_A(w) / w \in \Sigma^* \text{ y } |w|=n \right\}$$

$$\frac{1}{k^n} \sum_{w \in \Sigma^n} \text{tiempo}_A(w) \quad k = |\Sigma|$$

$$A: \Sigma^* \rightarrow \Sigma^*$$

$$\text{tiempo}_A: \Sigma^* \rightarrow \mathbb{N}$$

$$\Pr_n(\omega)$$

$$\cdot n \rightarrow \max \left\{ \frac{\text{tiempo}_A(\omega)}{|\omega|} / \omega \in \Sigma^* \text{ y } |\omega|=n \right\}$$

$$\frac{1}{k^n} \sum_{\omega \in \Sigma^n} \text{tiempo}_A(\omega) \quad k=|\Sigma|$$

$A: \Sigma^* \rightarrow \Sigma^*$

$\Pr_n(\omega)$

\sum

$|\Sigma|=2$

$A: \Sigma^* \rightarrow \Sigma^*$

.

tiempo

$\Pr_n(\omega)$

$|\Sigma|=2$

$A: \Sigma^* \rightarrow \Sigma^*$

.

tiempo $A(\omega)$

$\Pr_n(\omega)$

$|\Sigma|=2$

$$A: \Sigma^* \rightarrow \Sigma^*$$

.

$$\text{tiempo}_A(\omega)$$

$$\underline{X}_n(\omega)$$

$$\Pr_n(\omega)$$

$$|\Sigma|=2$$

$$A: \Sigma^* \rightarrow \Sigma^*$$

.

$$\text{tiempo}_A(\omega)$$

$$\cdot \underline{X_n}(\omega)$$

$$\Pr_n(\omega)$$

$$|\Sigma|=2$$

$$E[X_n]$$

$$A: \Sigma^* \rightarrow \Sigma^*$$

.

tiempo $A(\omega)$

$X_n(\omega)$

$$E[X_n] = \Sigma$$

$\Pr_n(\omega)$

$$|\Sigma| = 2$$

$$A: \Sigma^* \rightarrow \Sigma^*$$

.

tiempo $A(\omega)$

.

$X_n(\omega)$

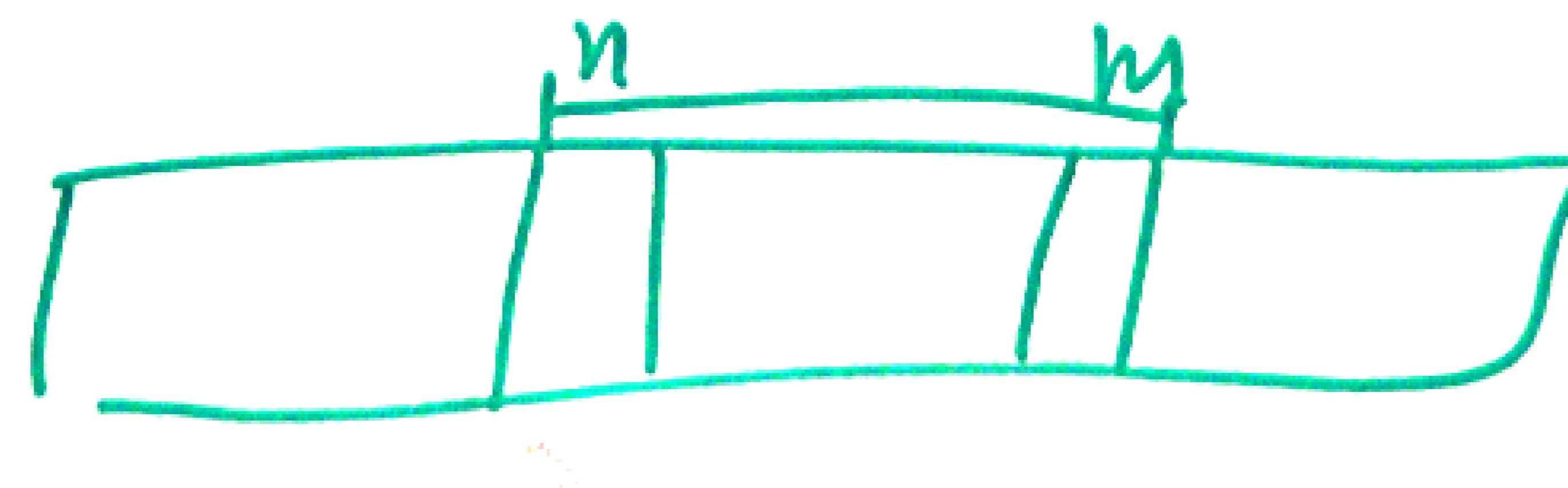
$$\Pr_n(\omega)$$

$$|\Sigma| = 2$$

$$E[X_n] = \sum_{\omega \in \Sigma^n} X_n(\omega) \cdot \Pr_n(\omega)$$

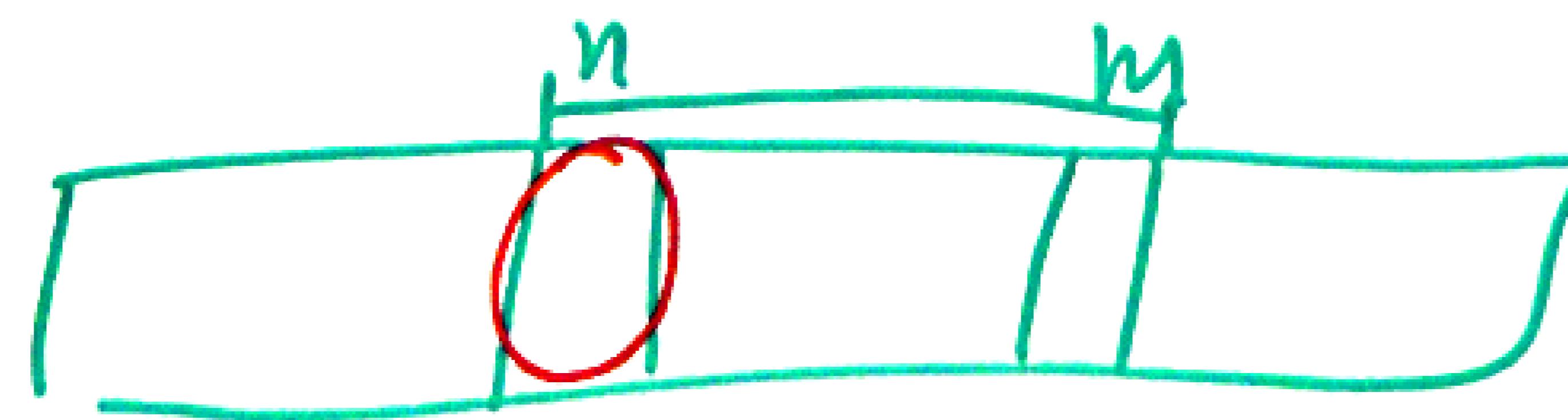
$$\omega \in \Sigma^n$$

L:



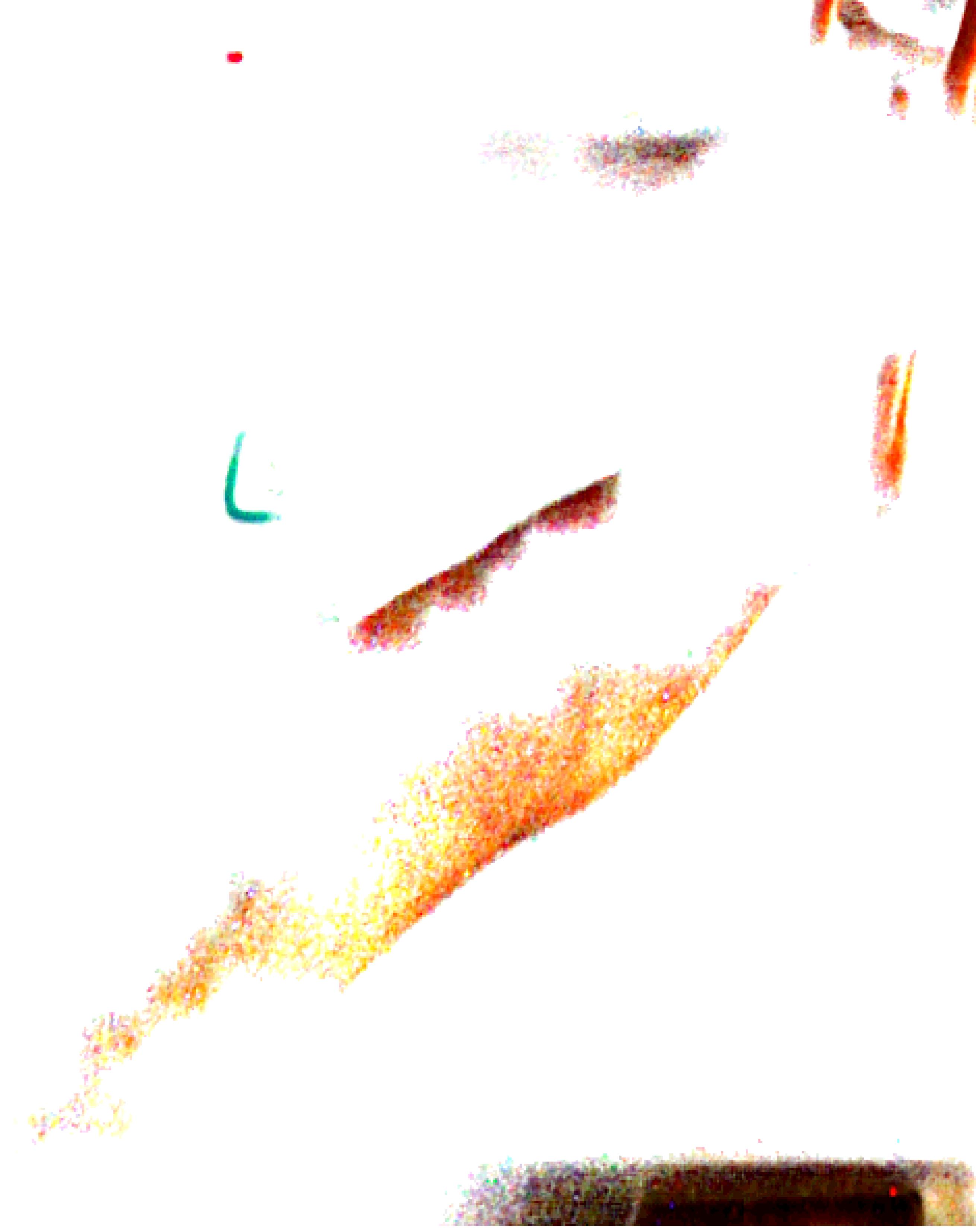
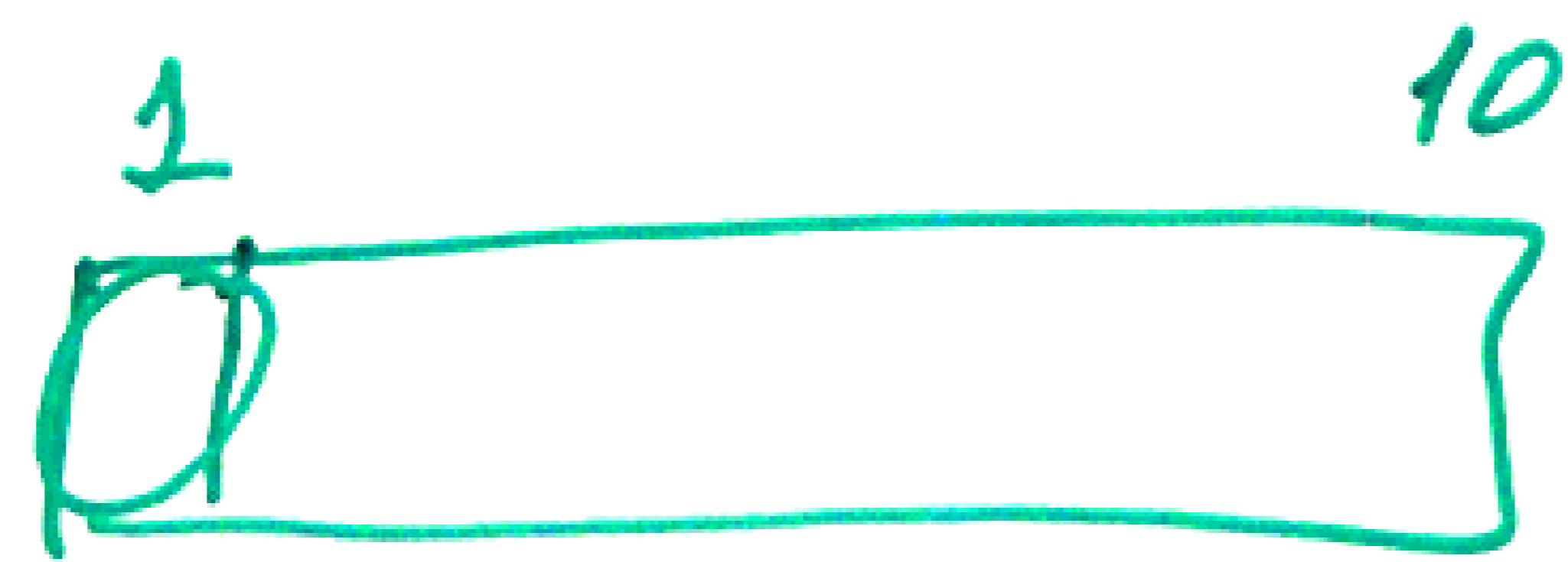
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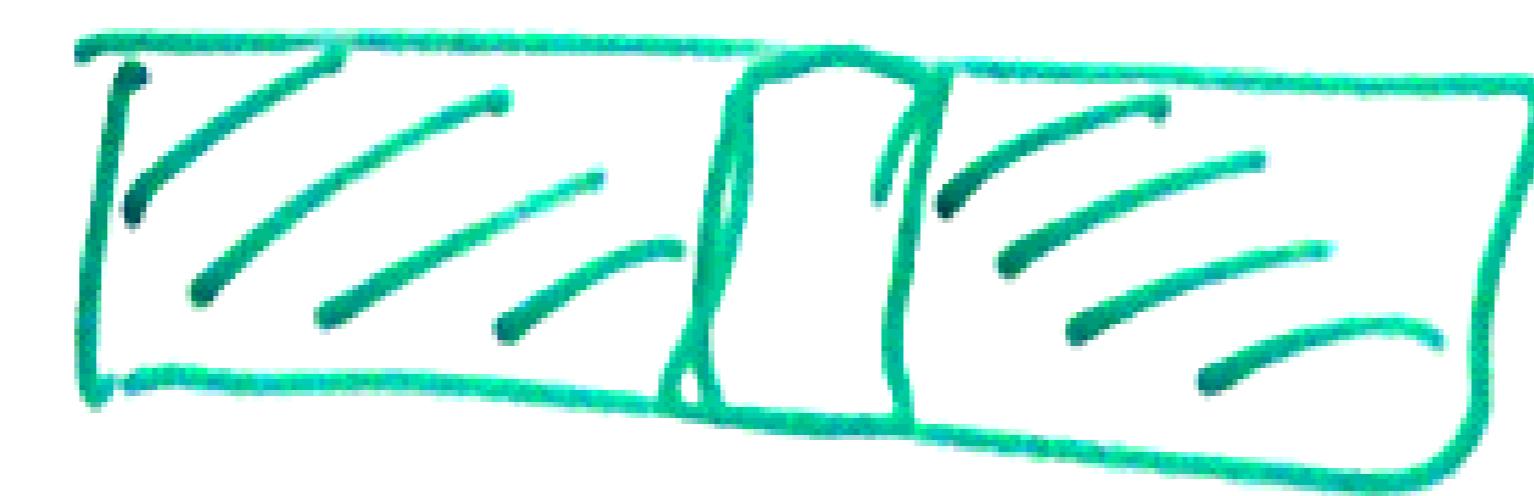


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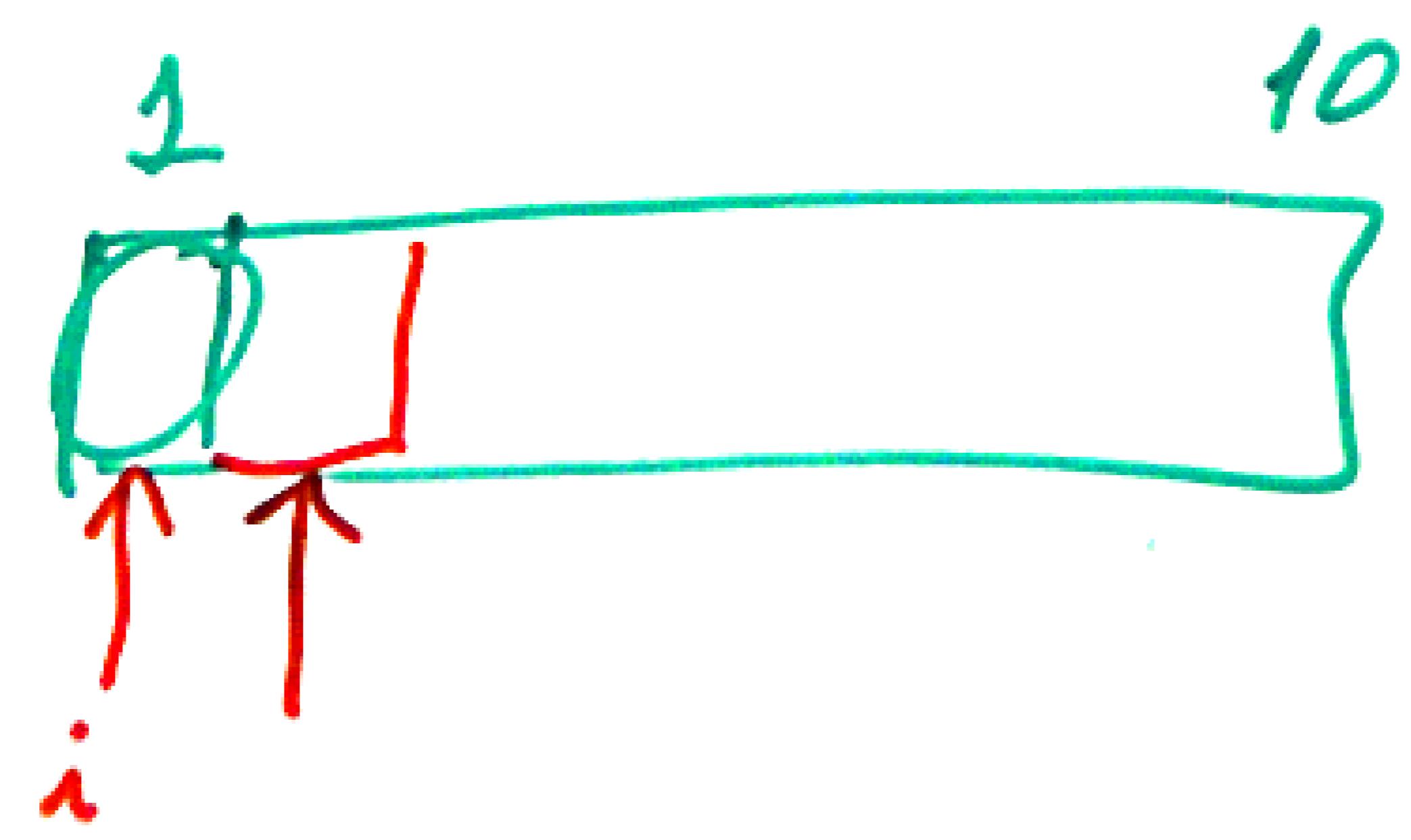
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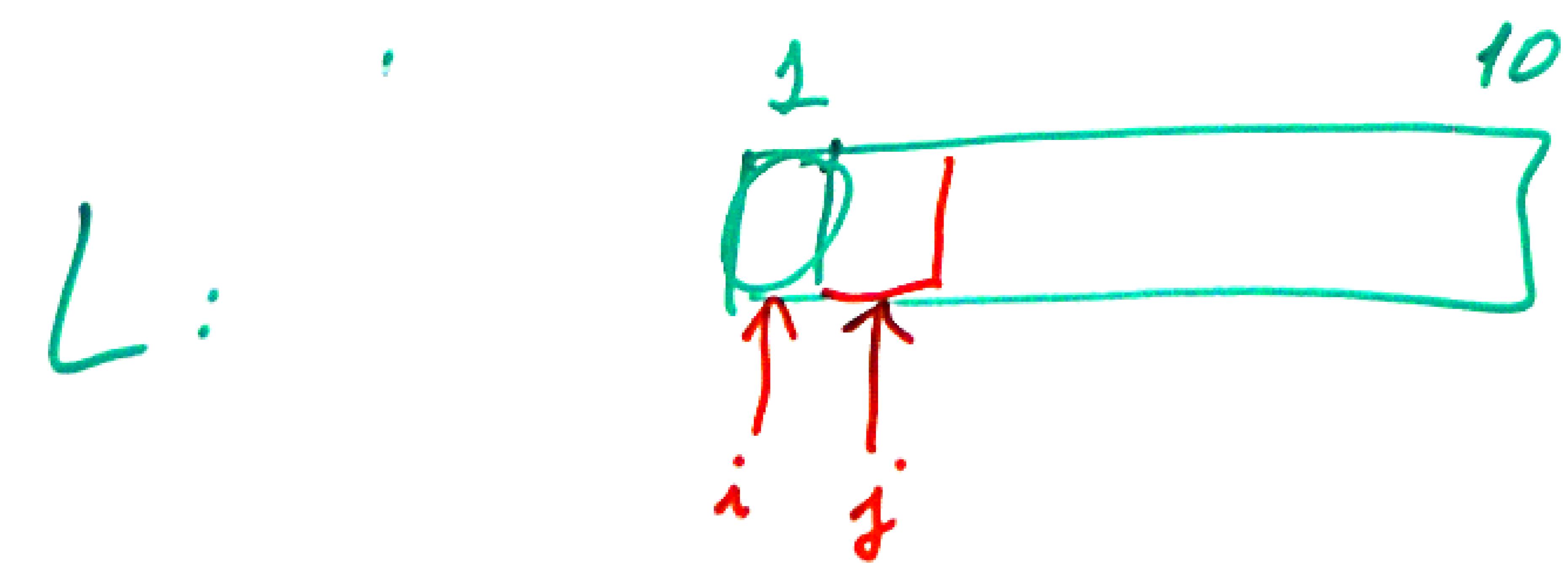


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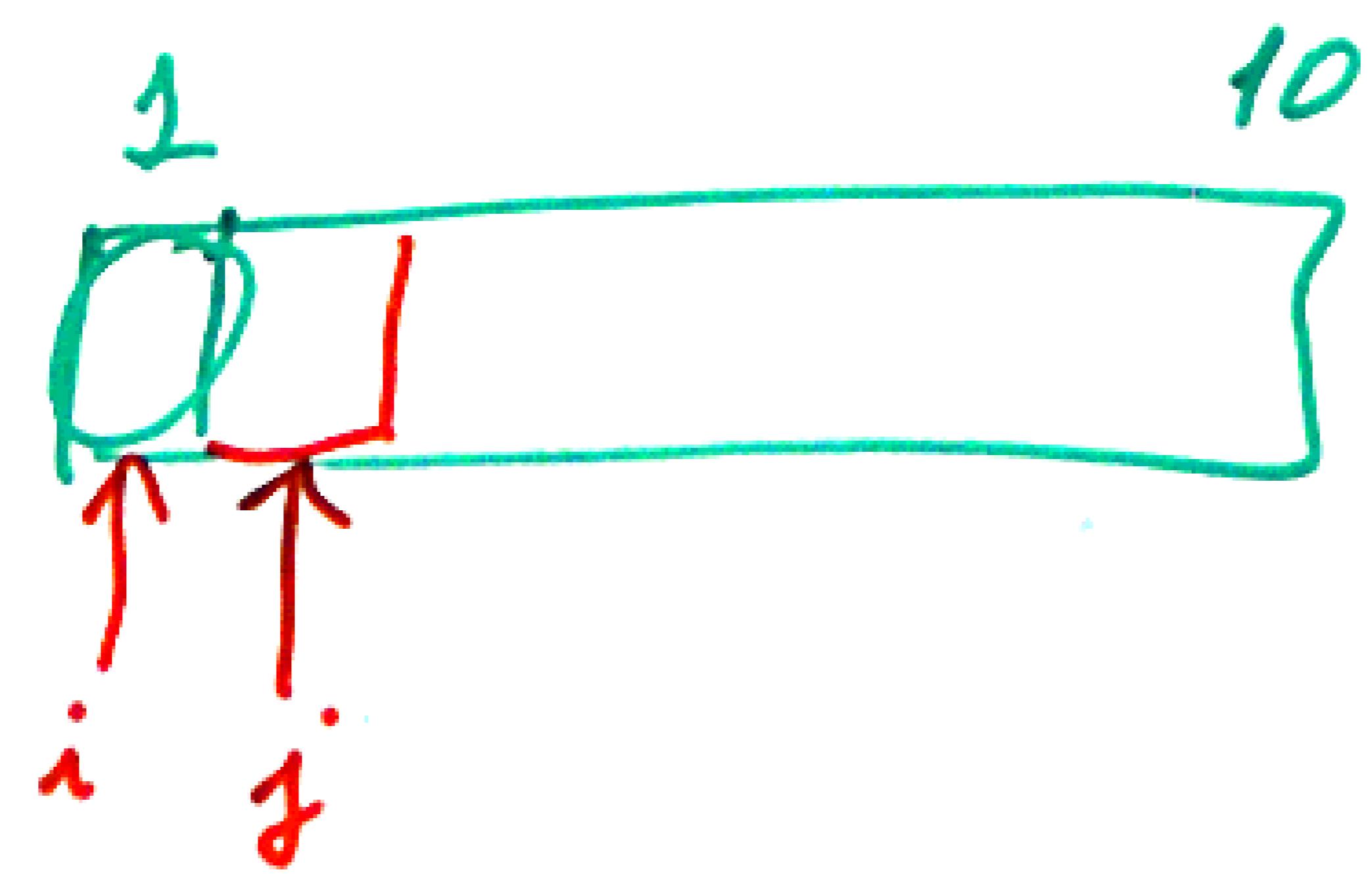


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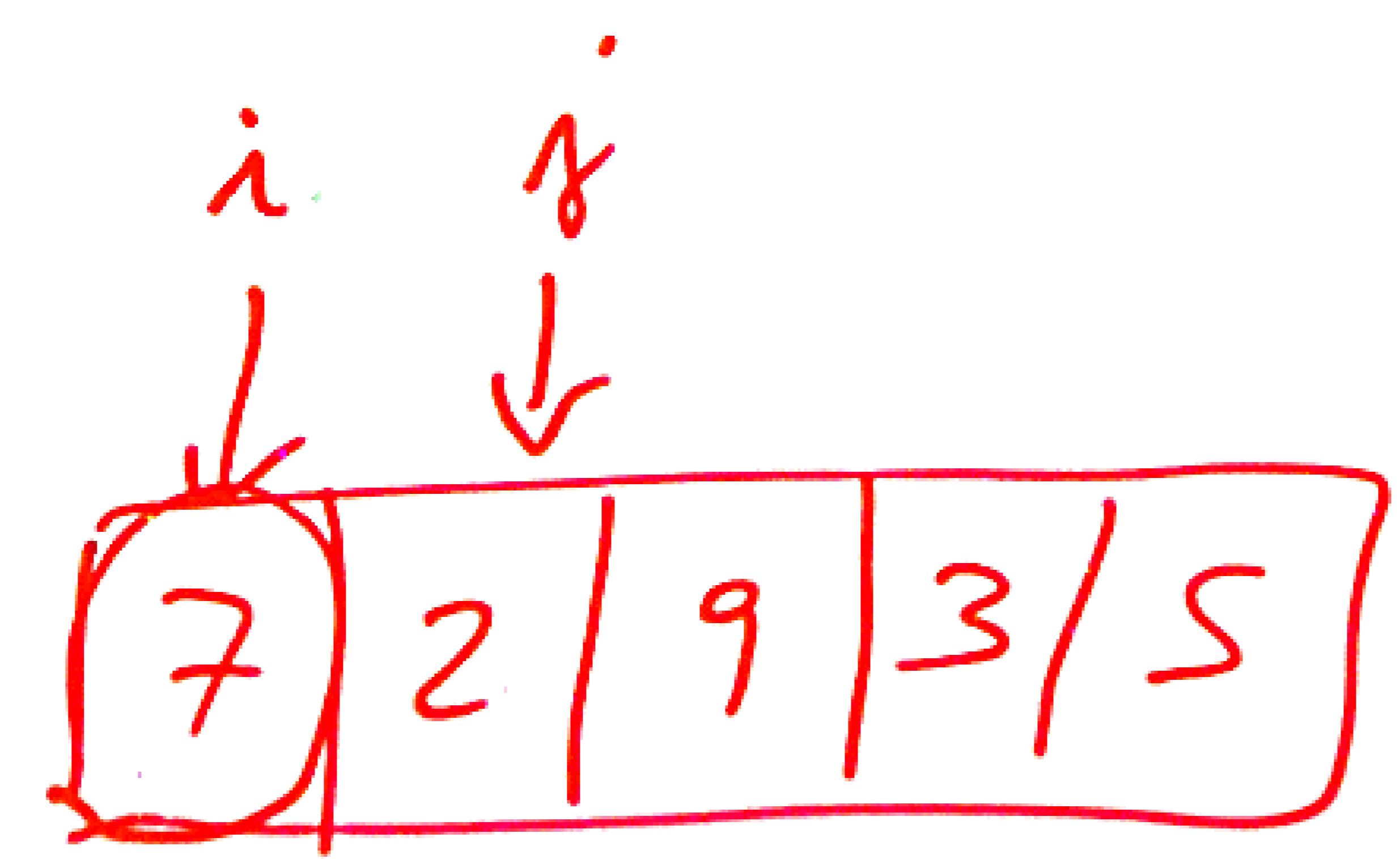
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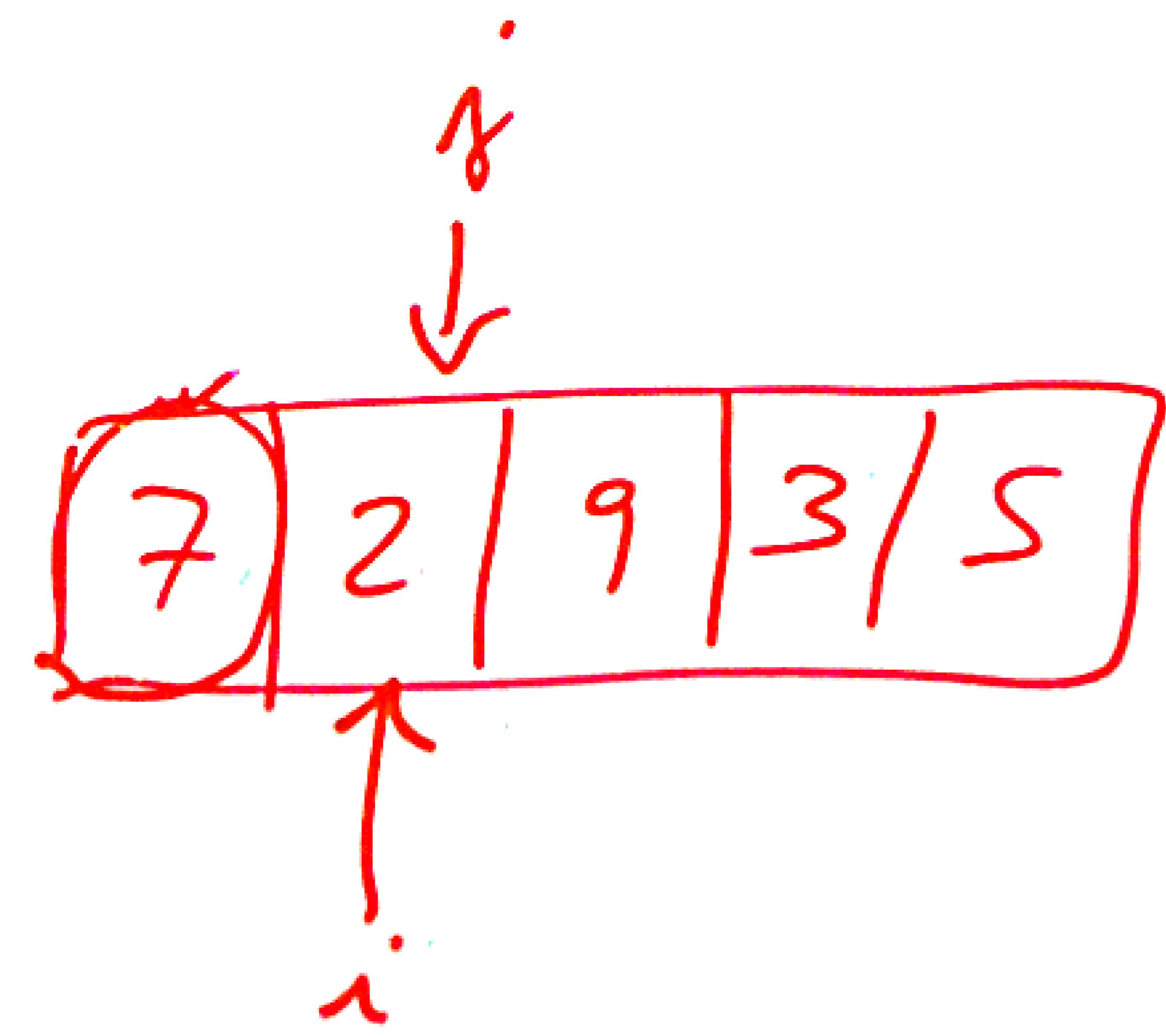


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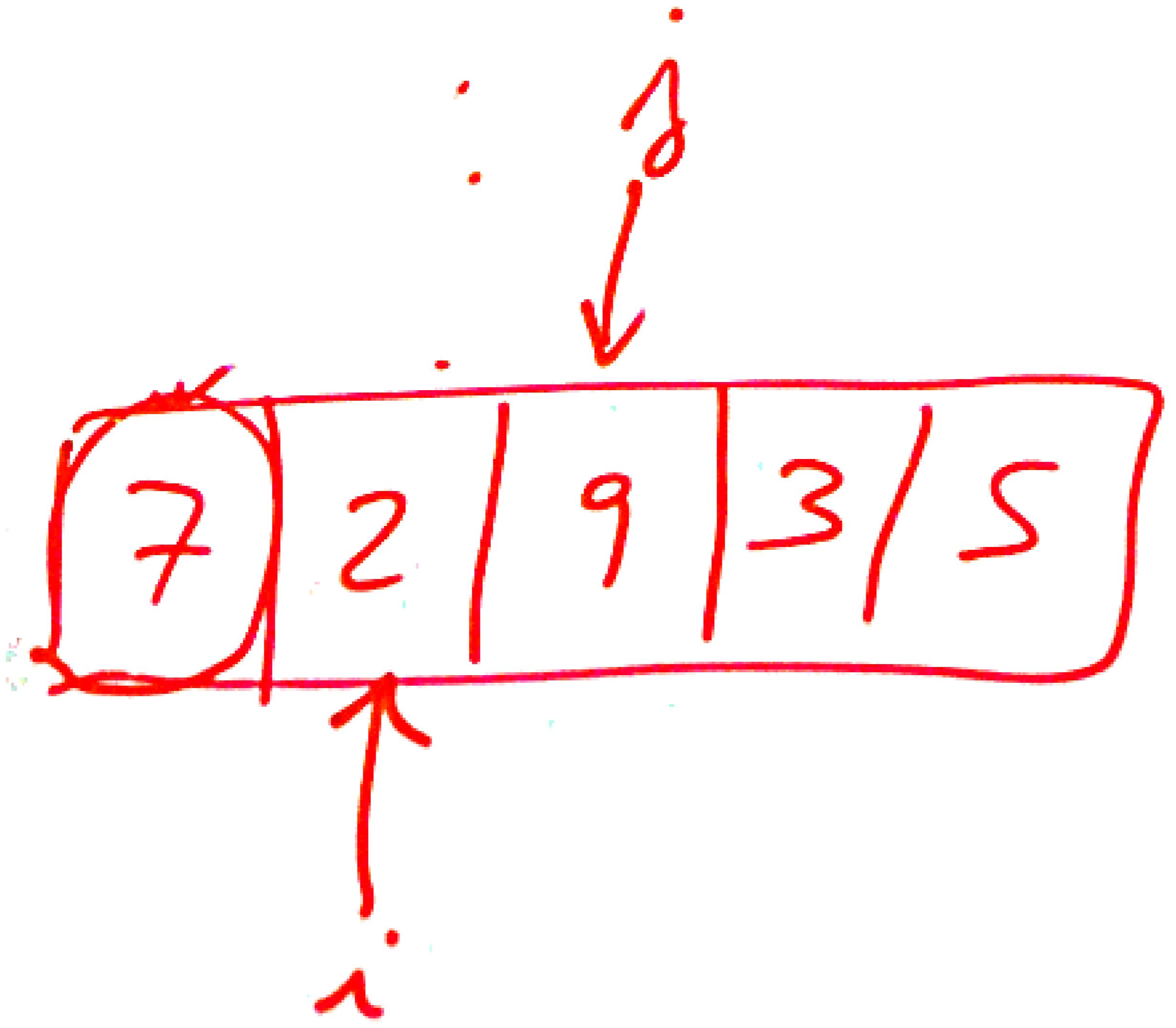
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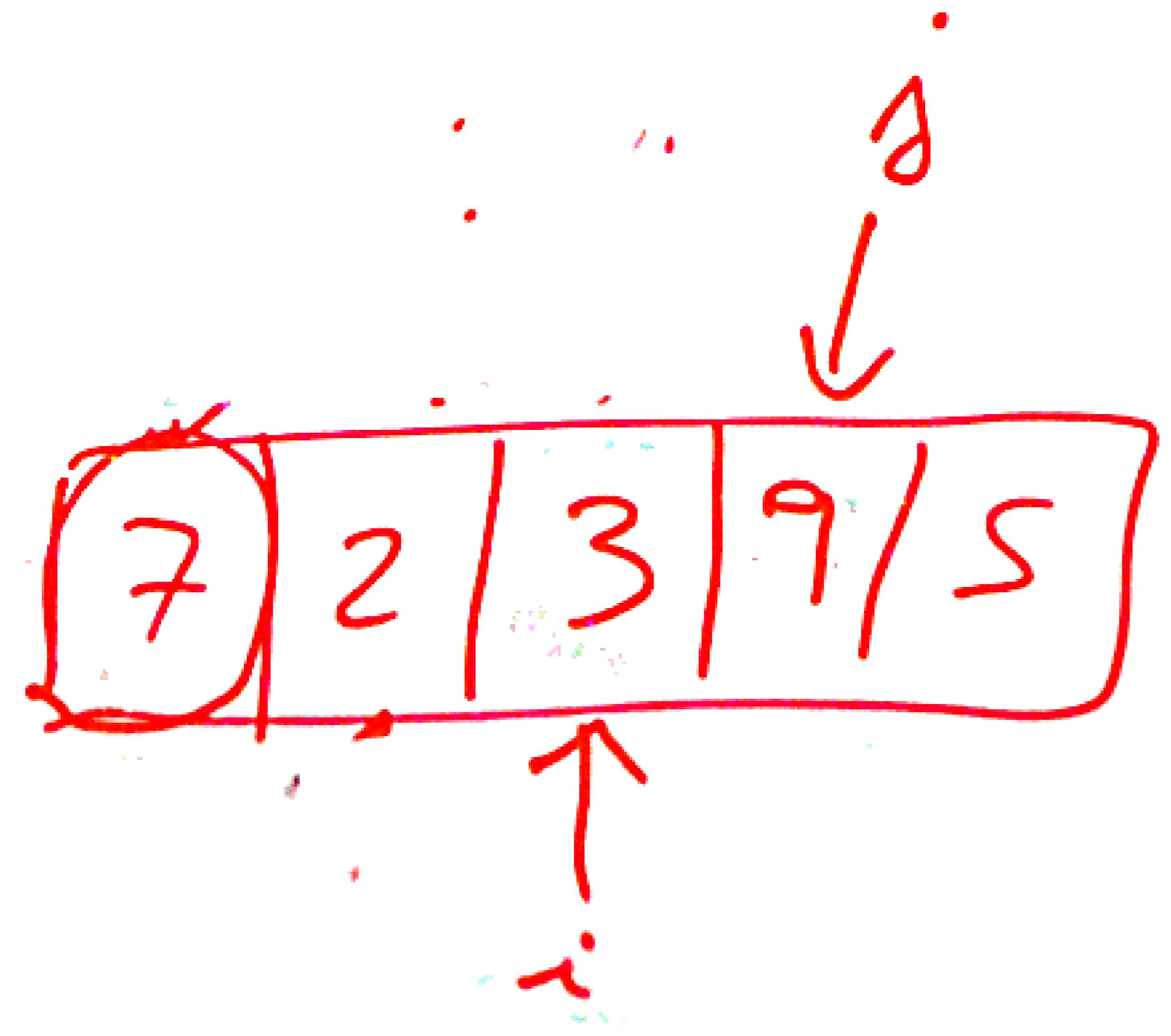
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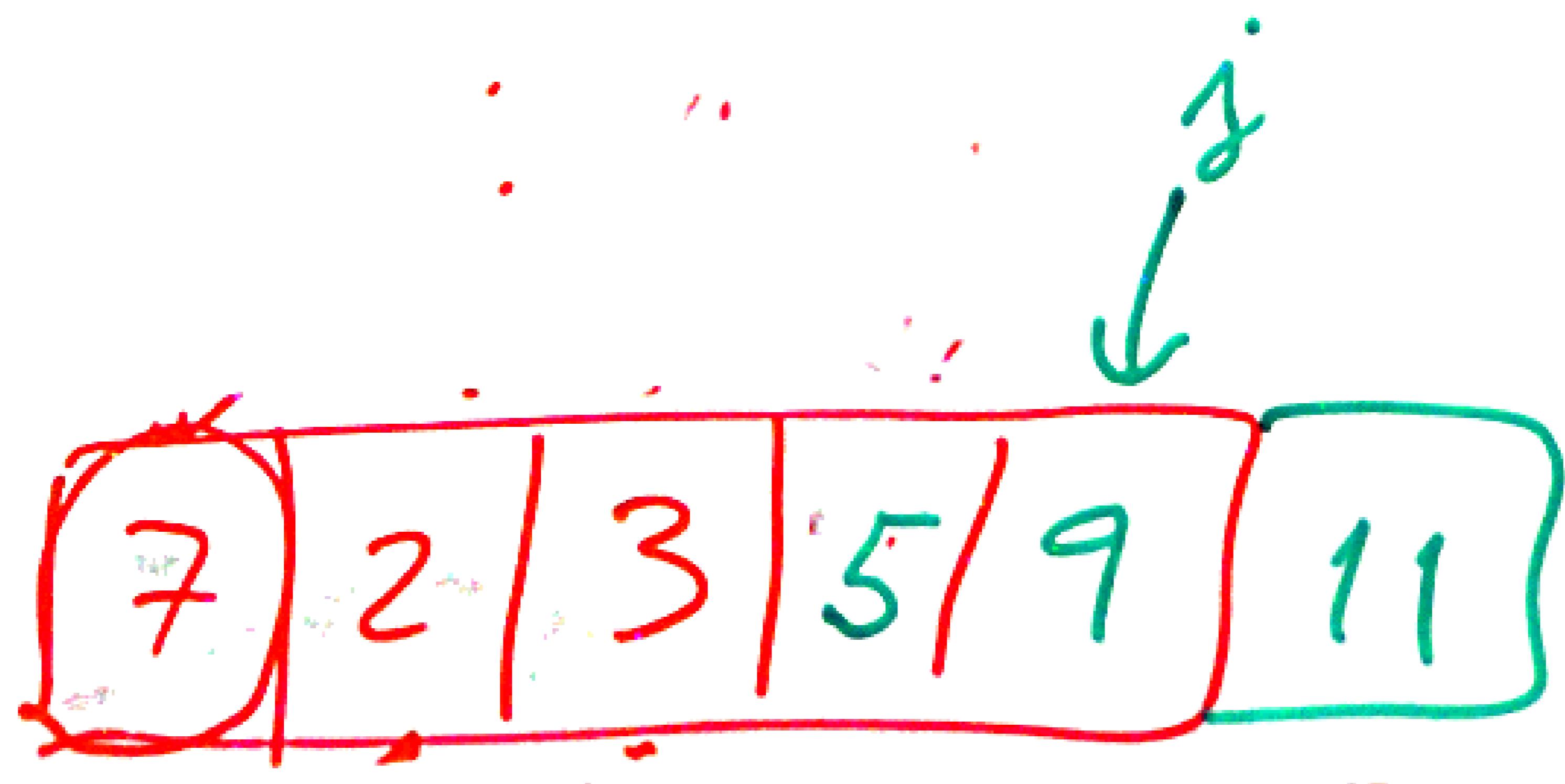
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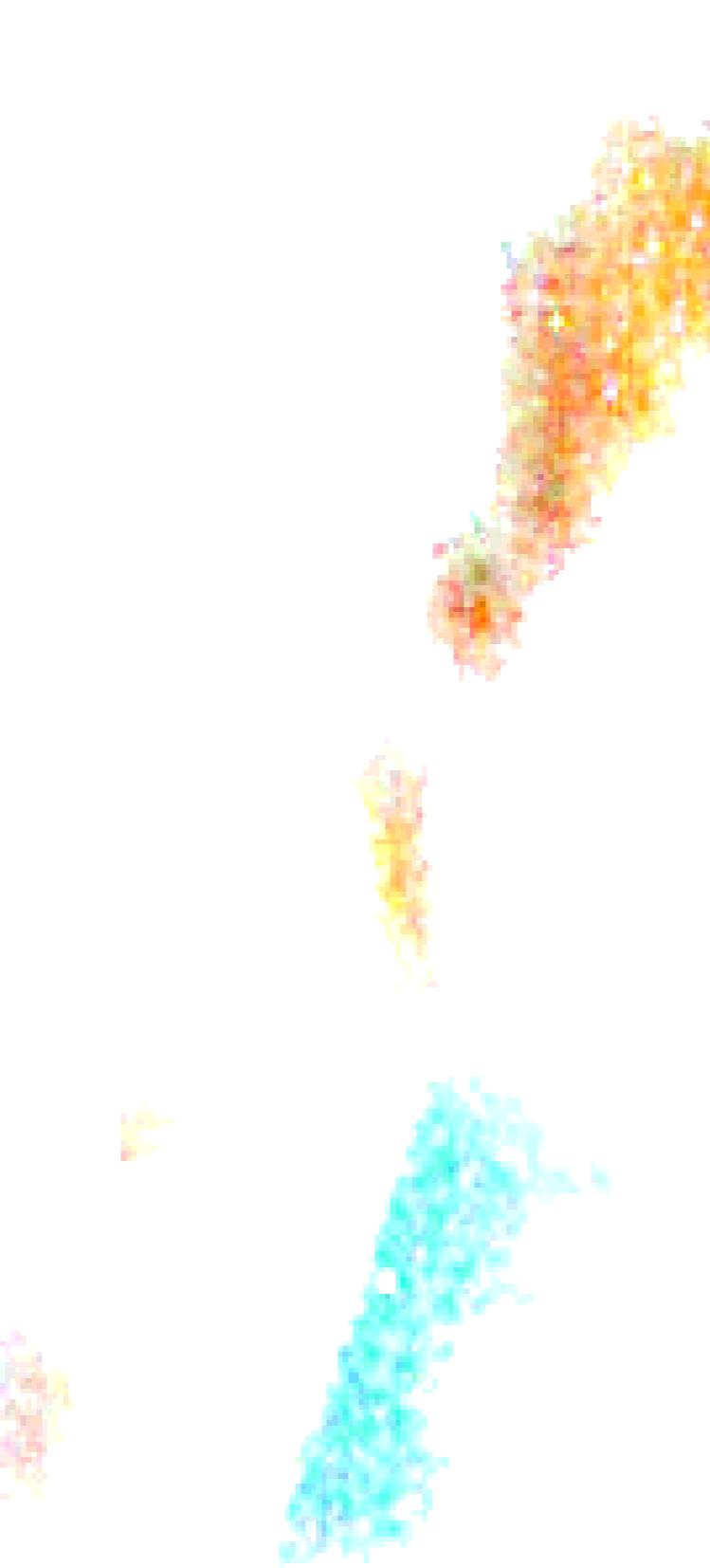


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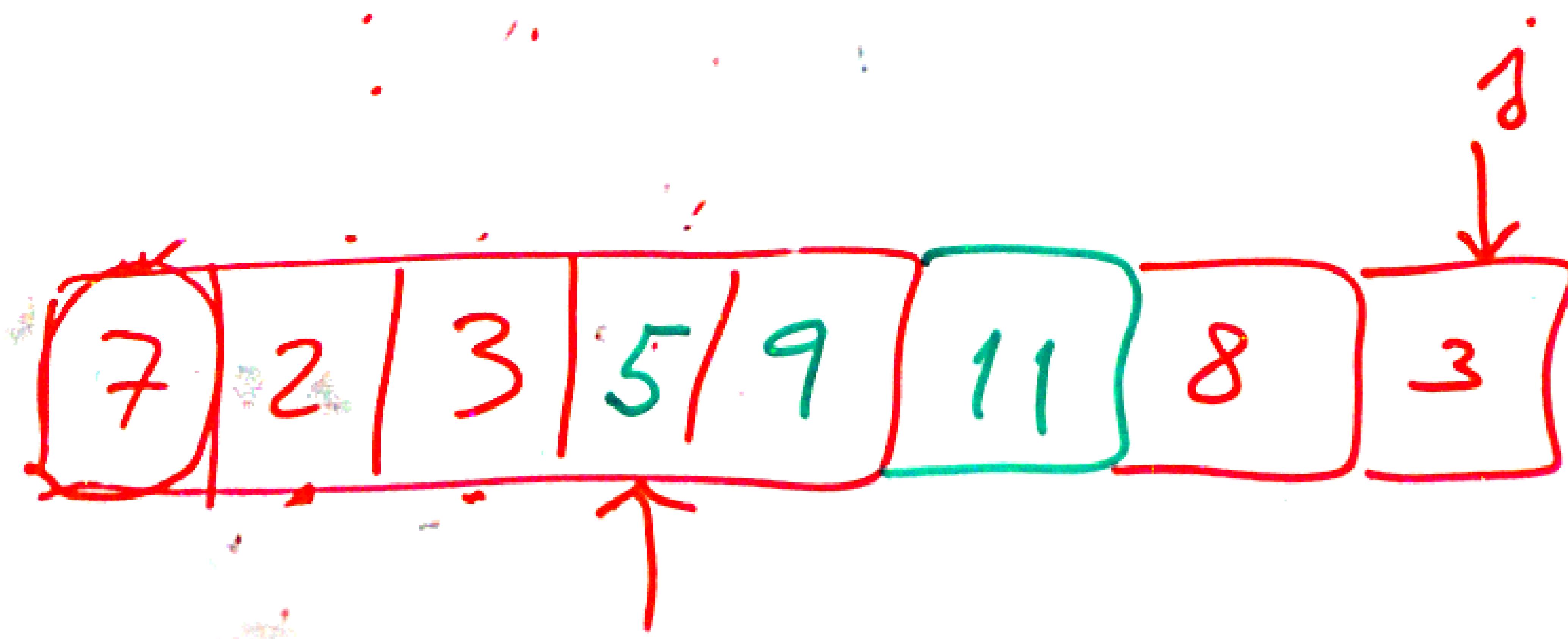
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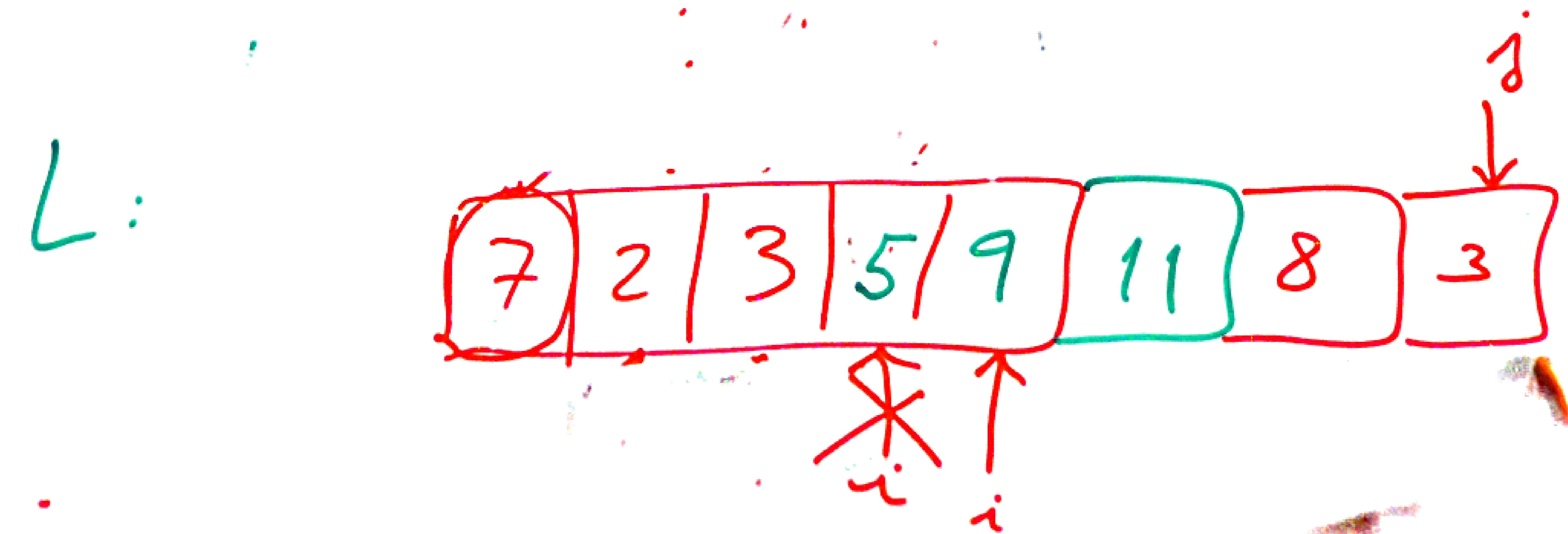


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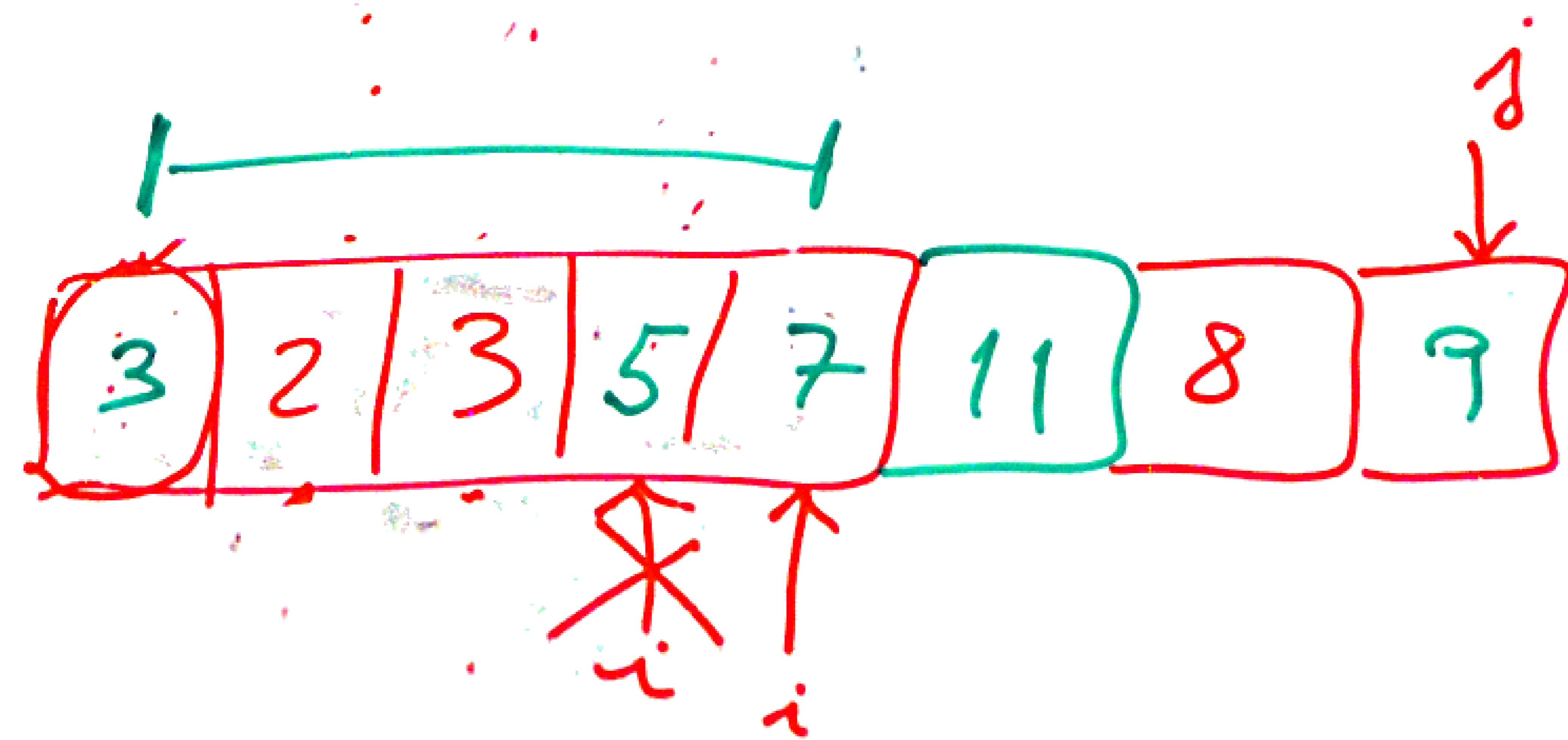


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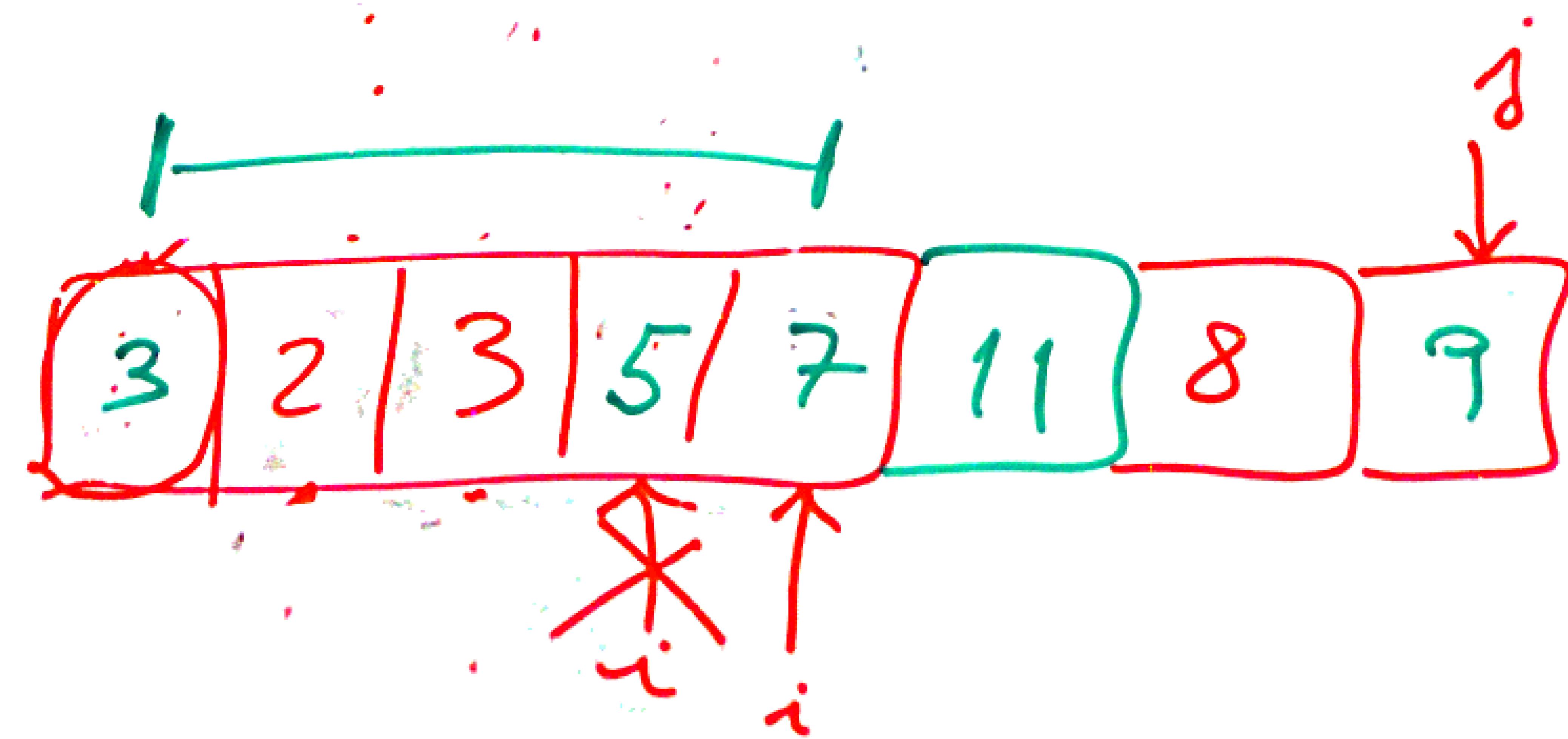


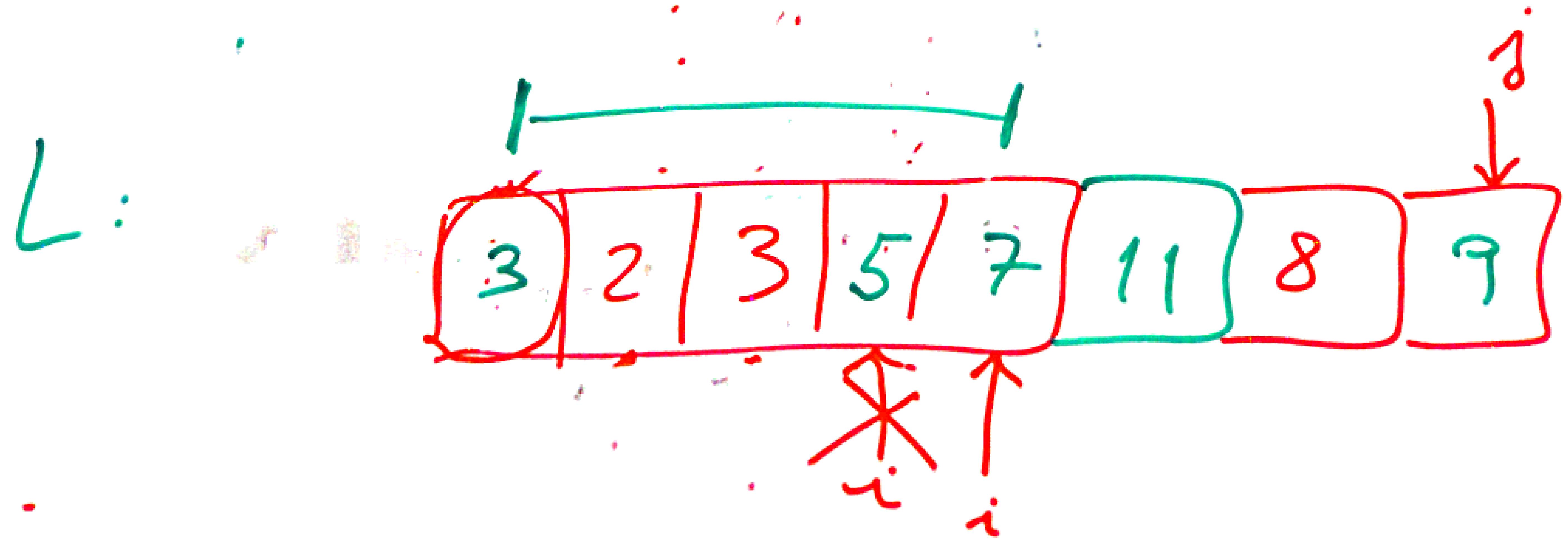
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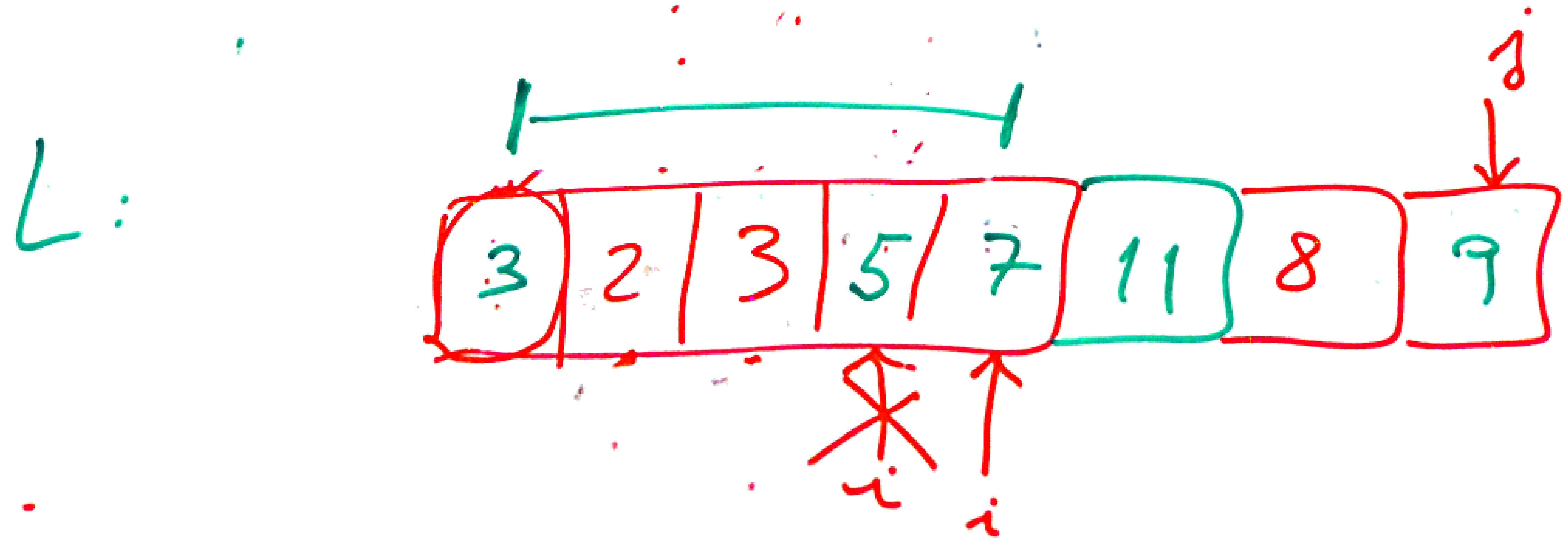


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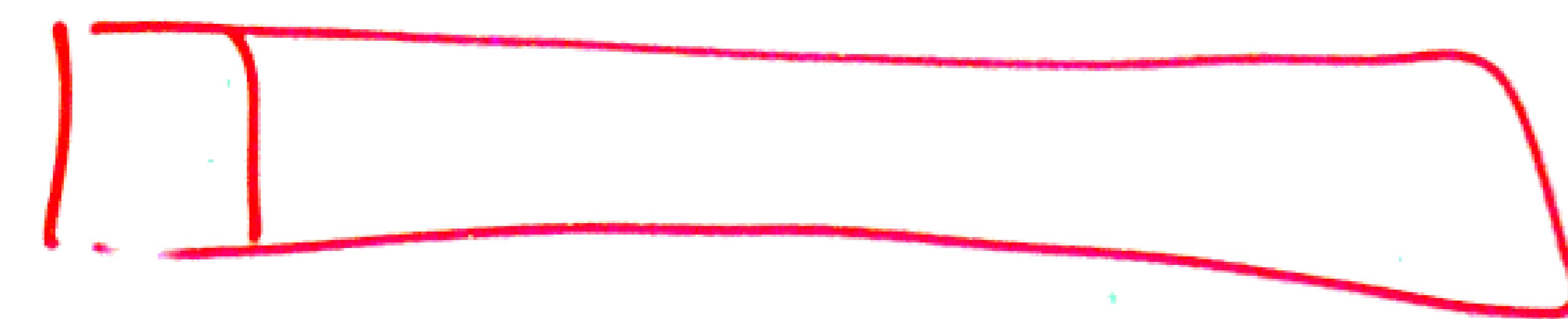
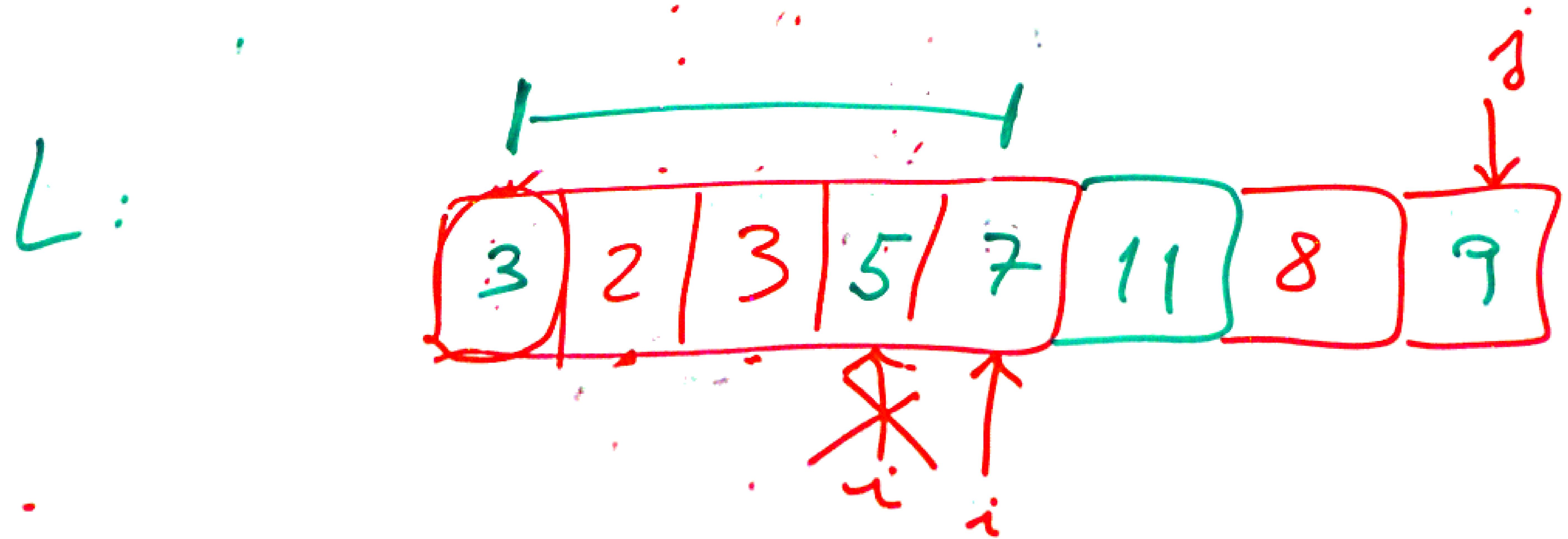
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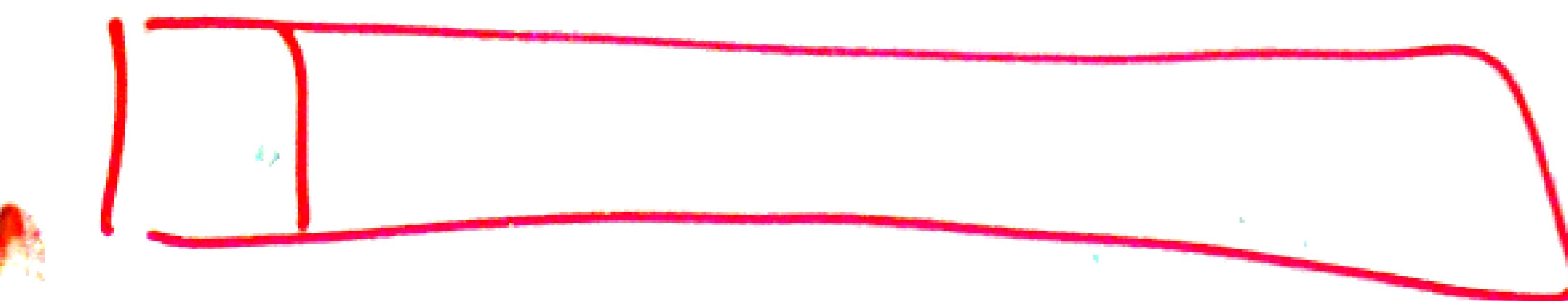
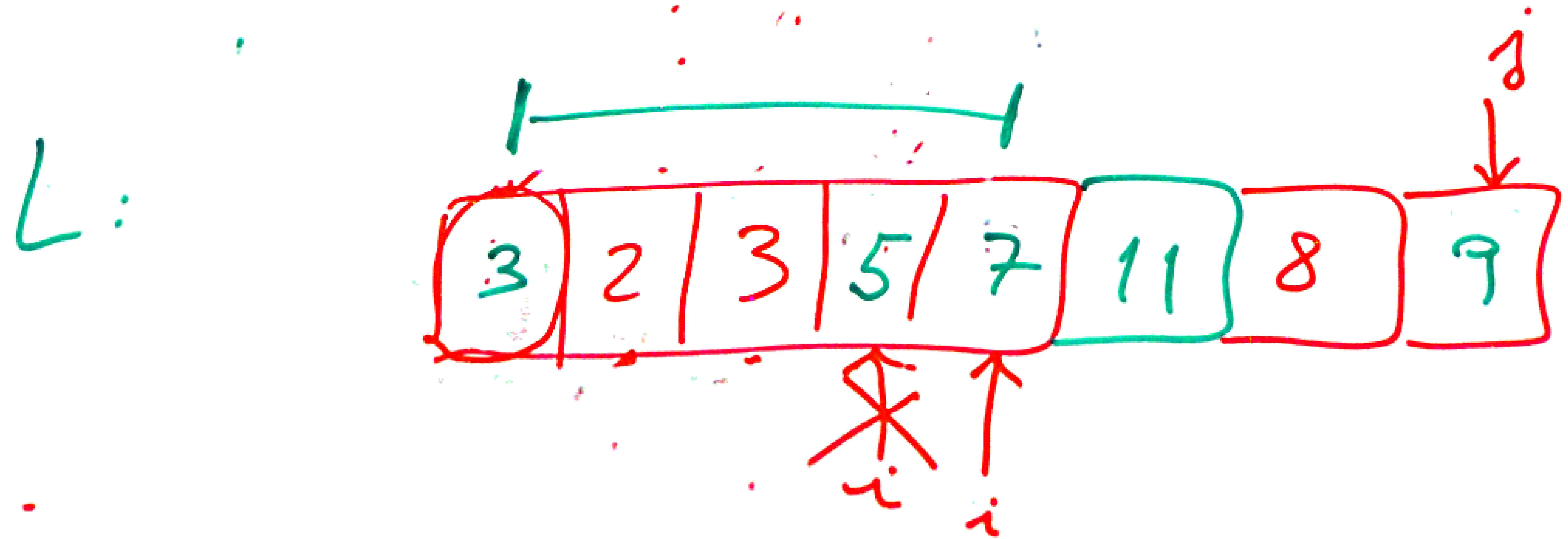


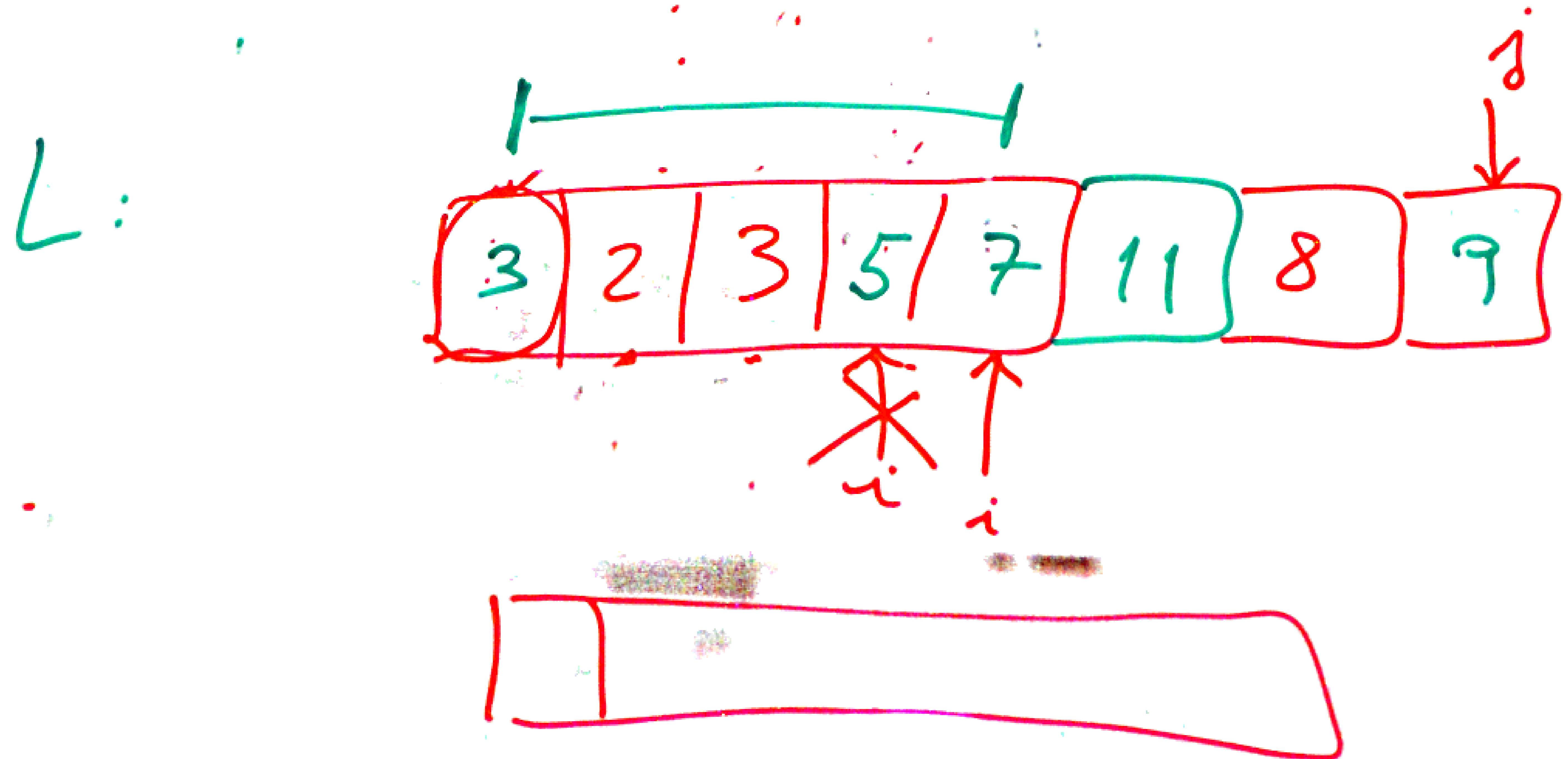


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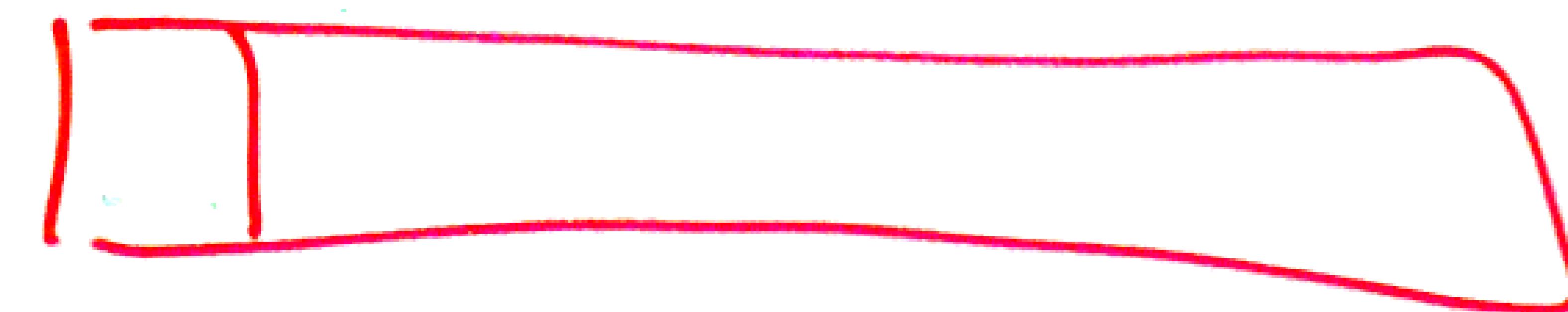
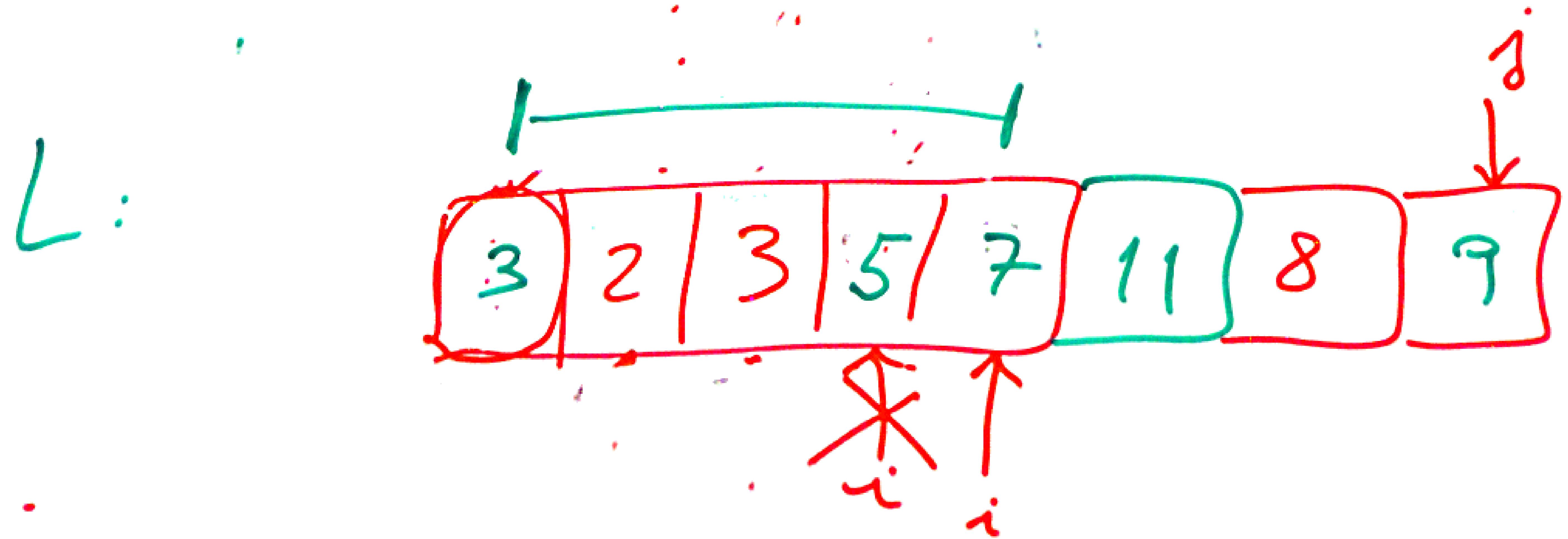


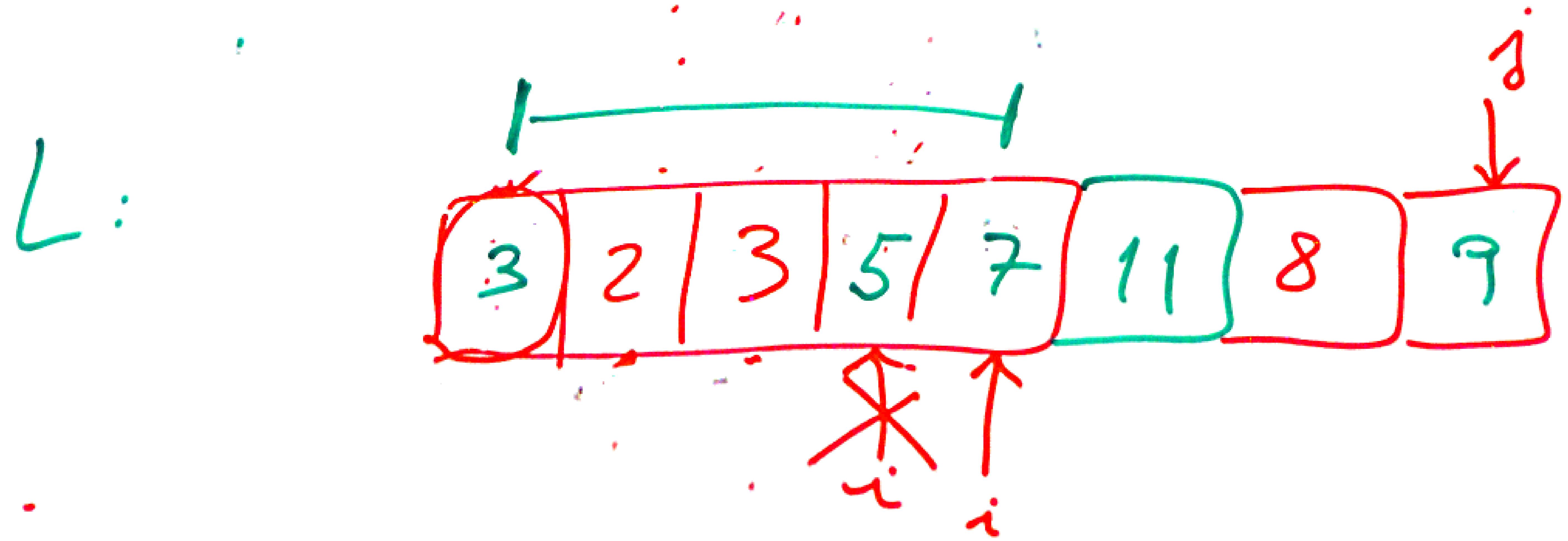
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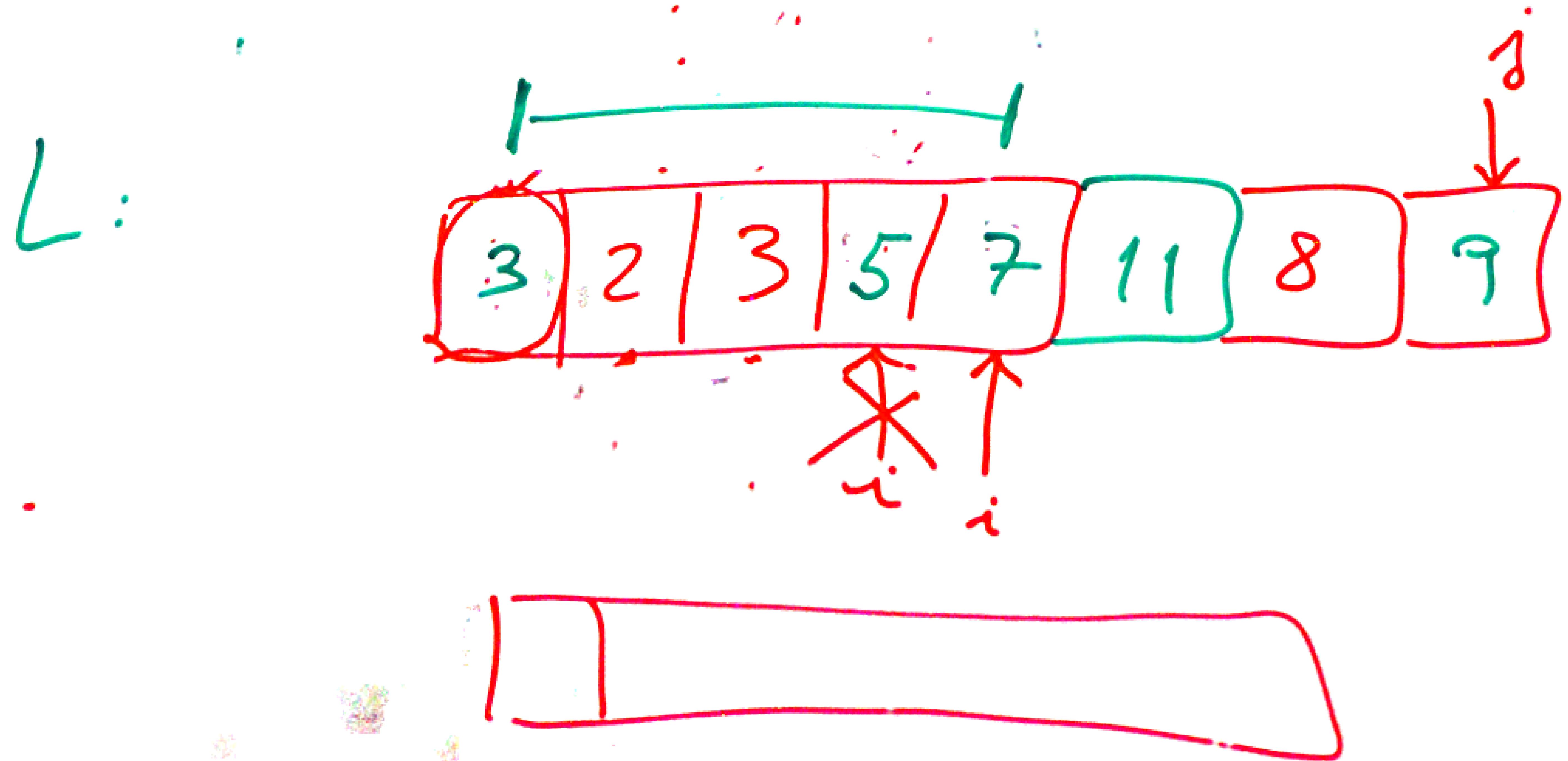


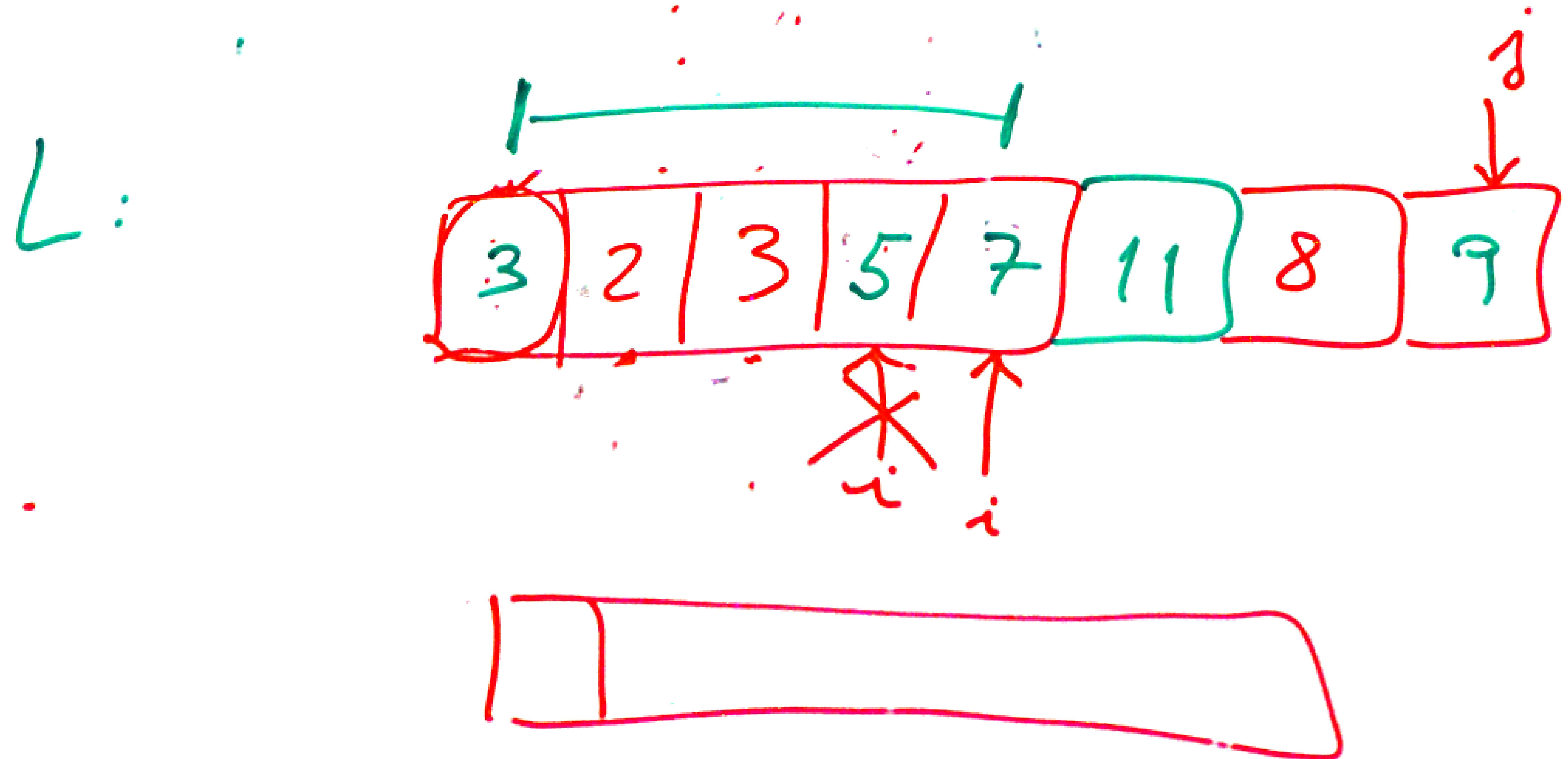


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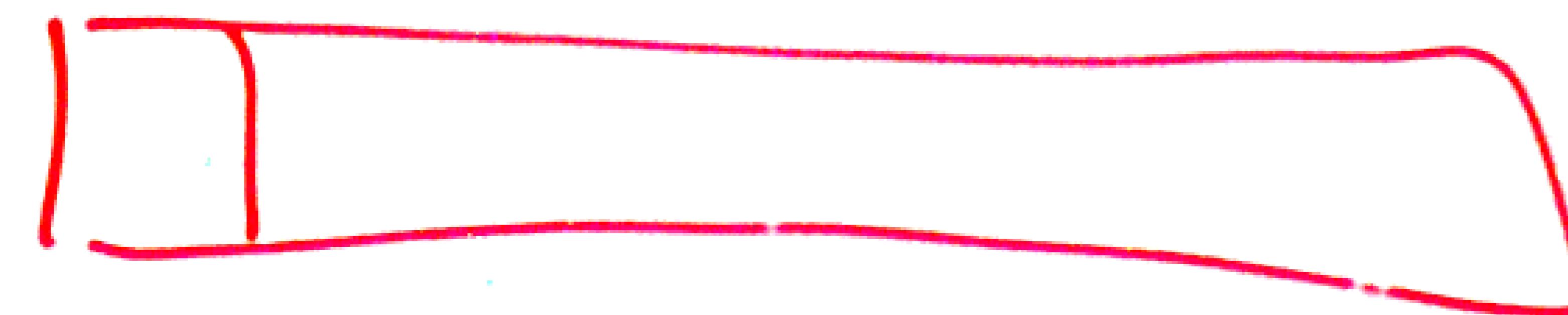
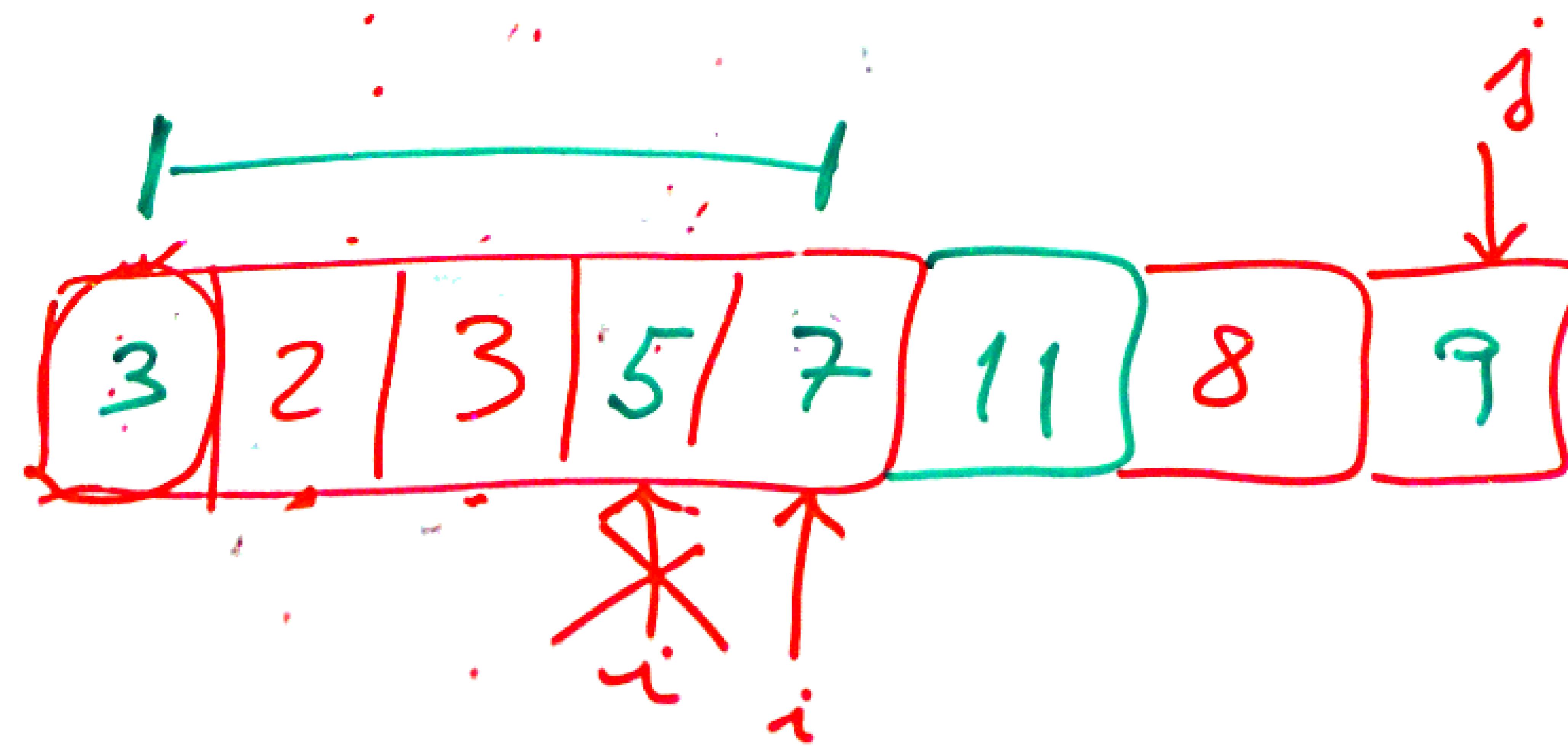






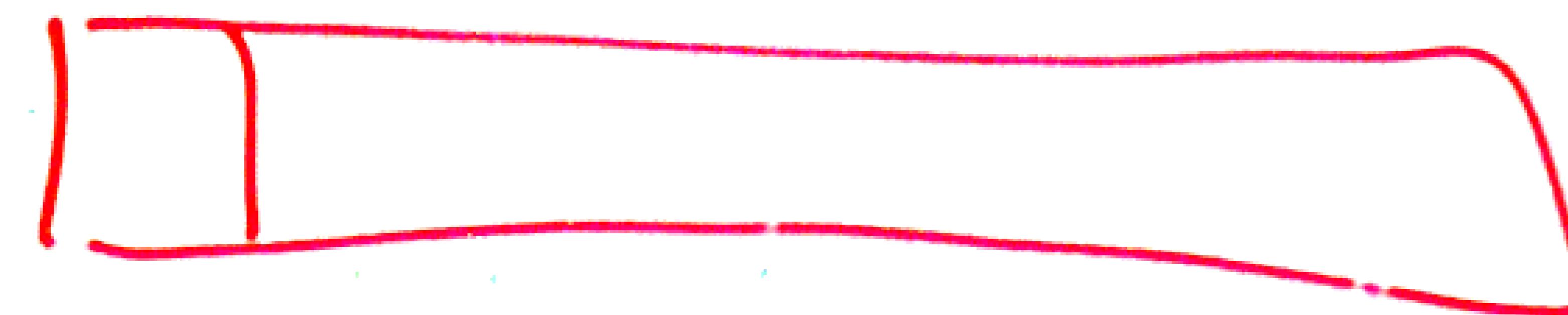
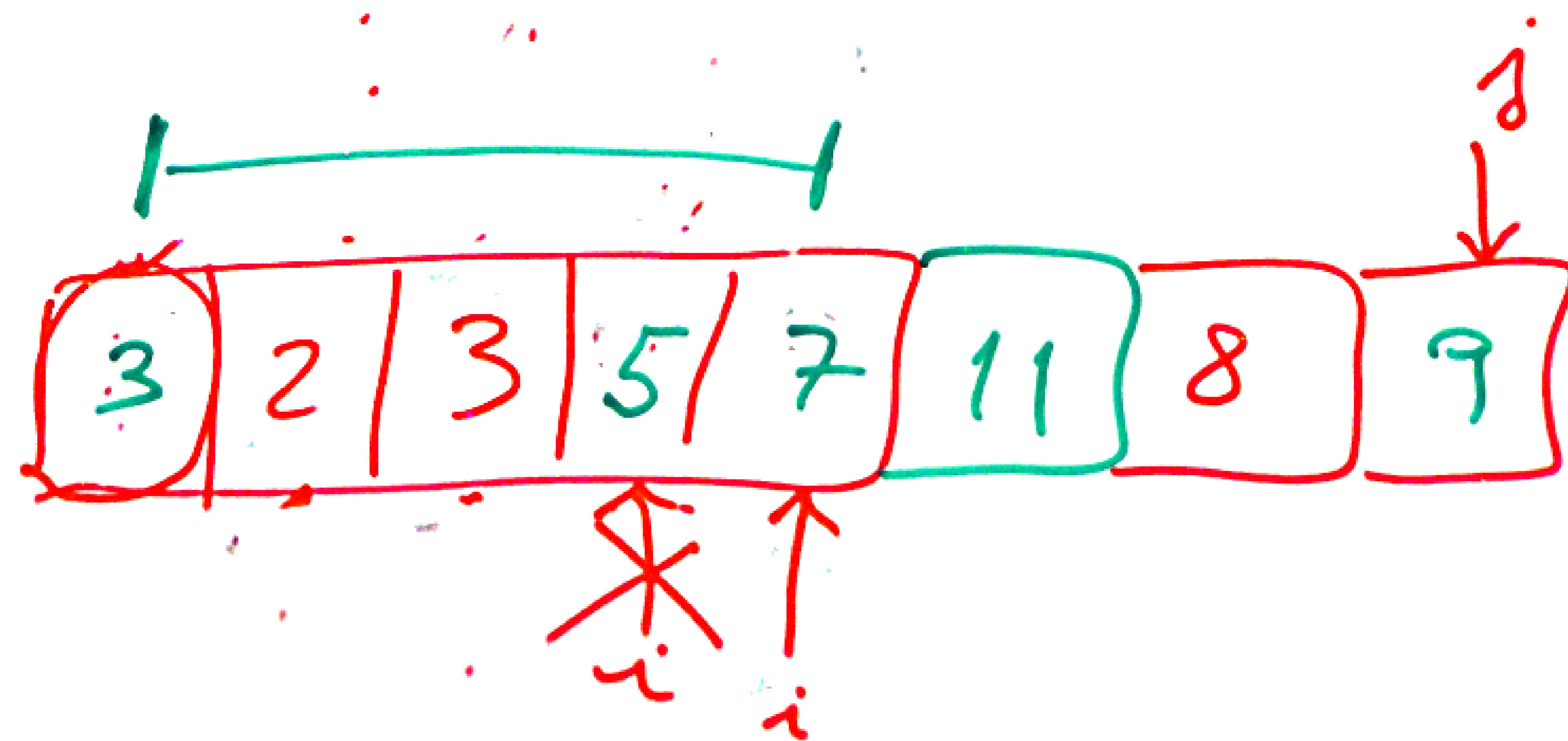
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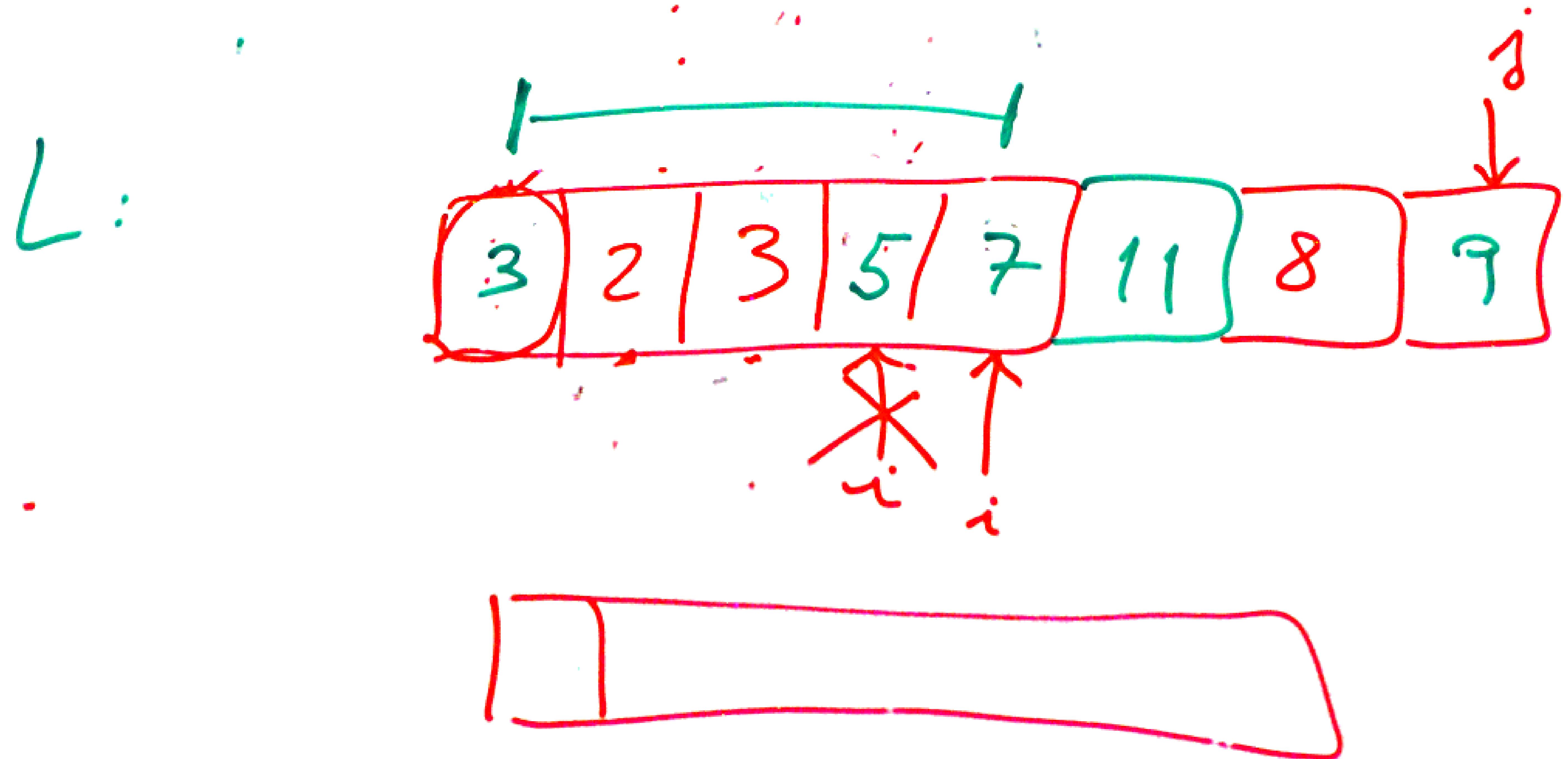


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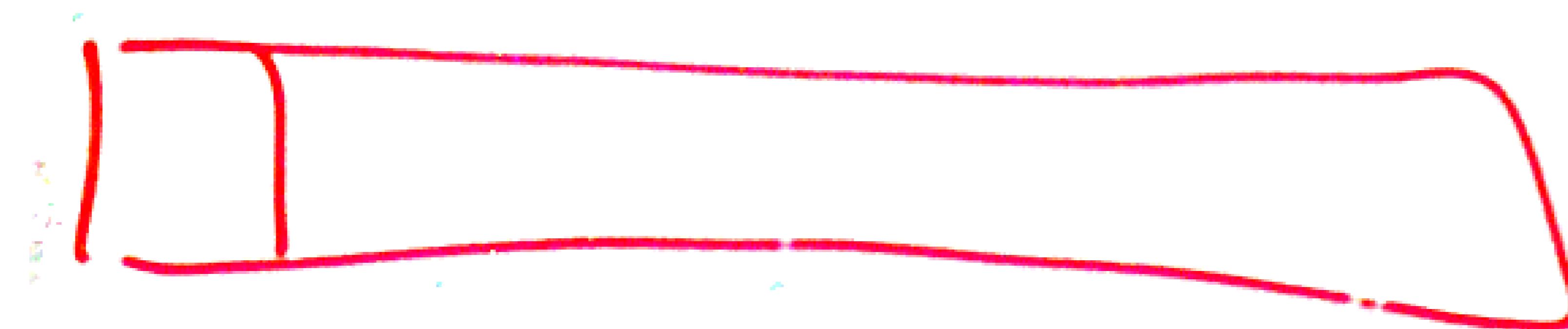
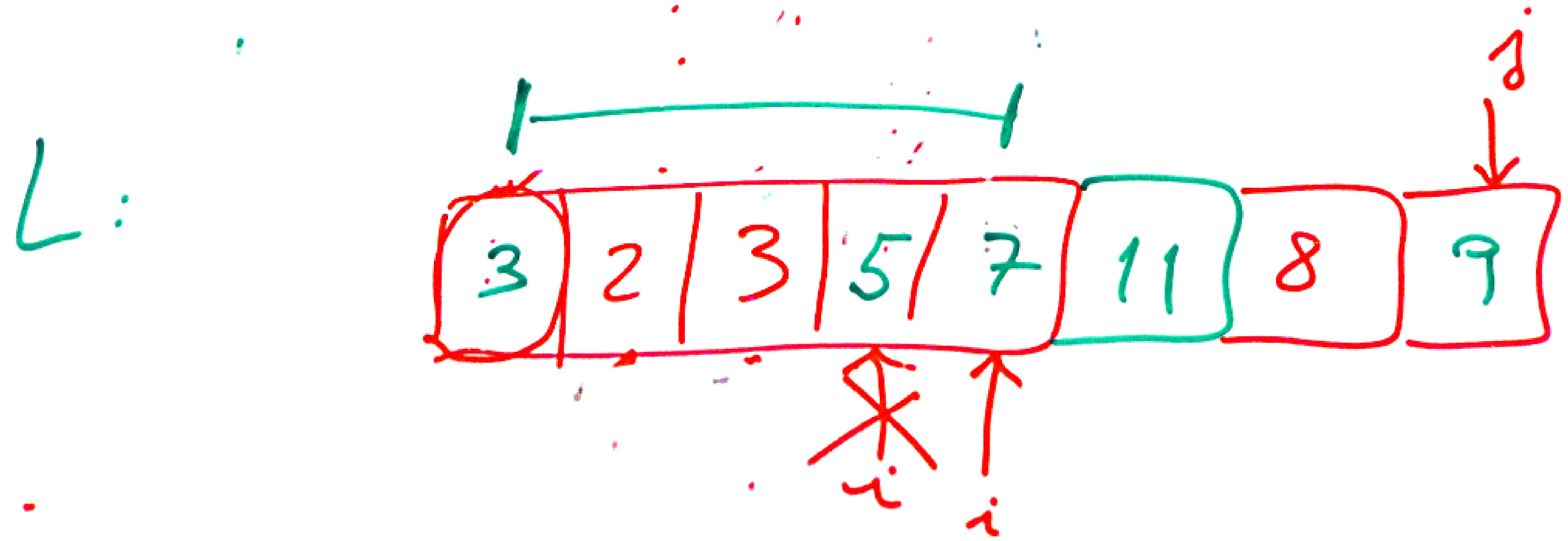
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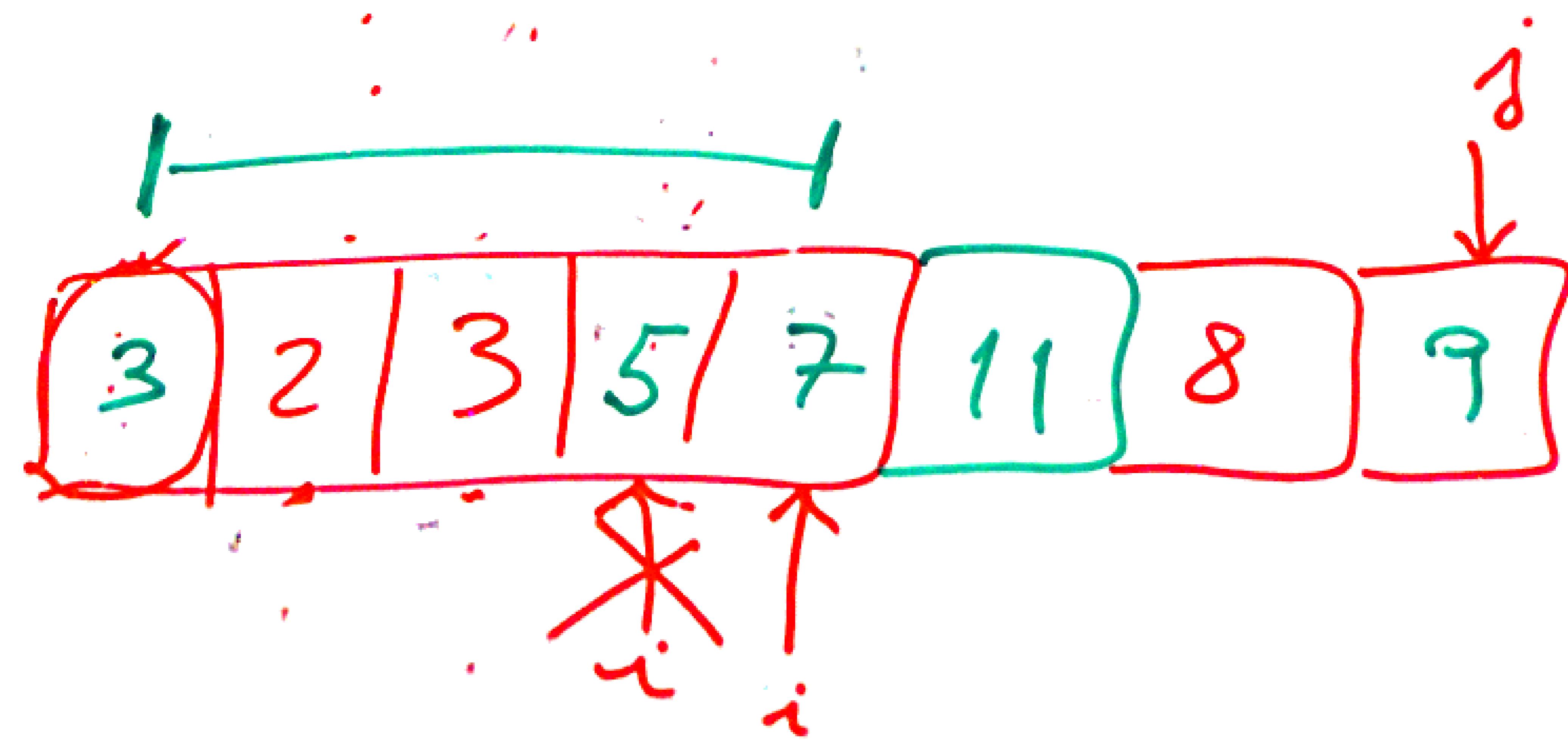


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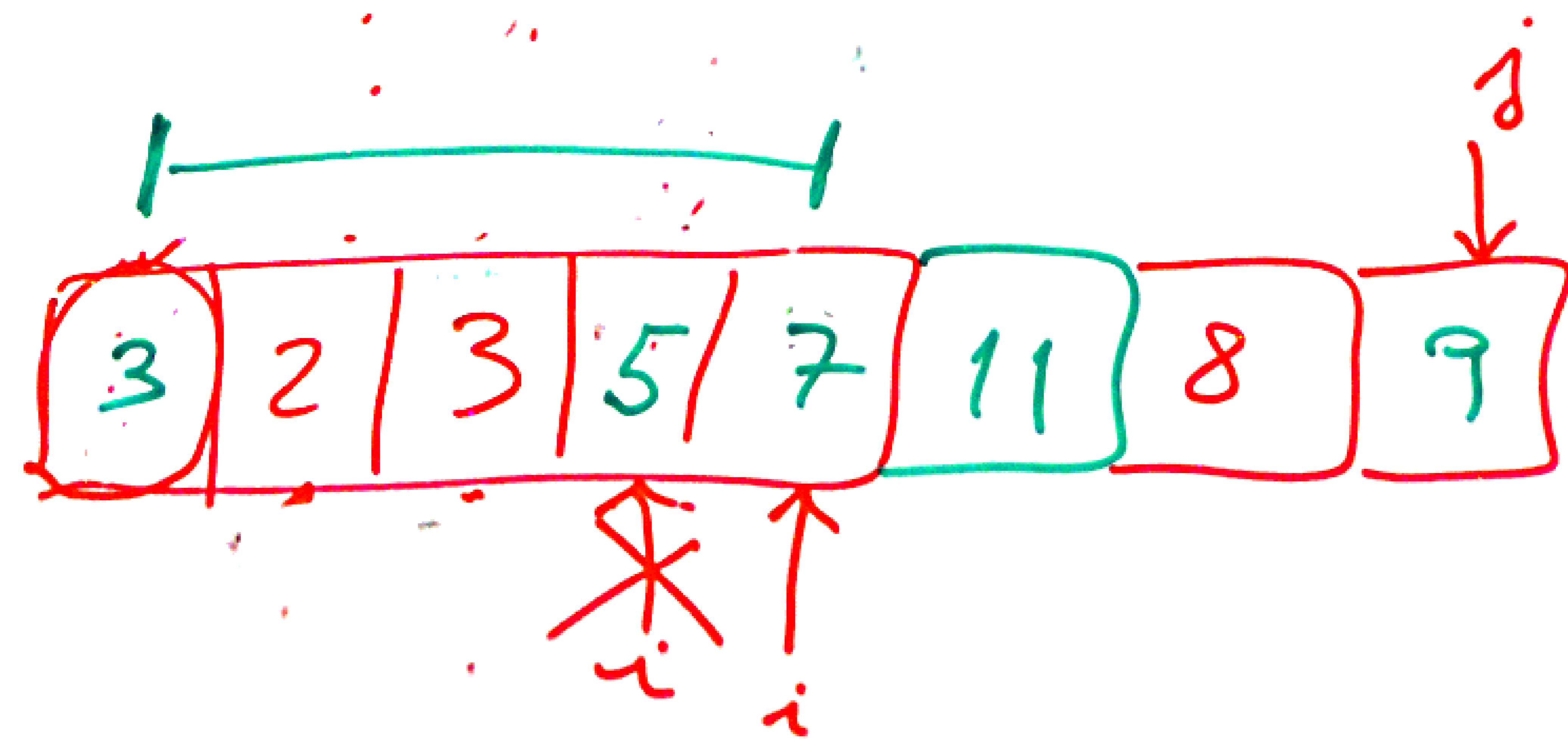
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[3, 2, 3, 5, 7, 11, 8, 9]

{0, -, 9, C, 3,
, 3}

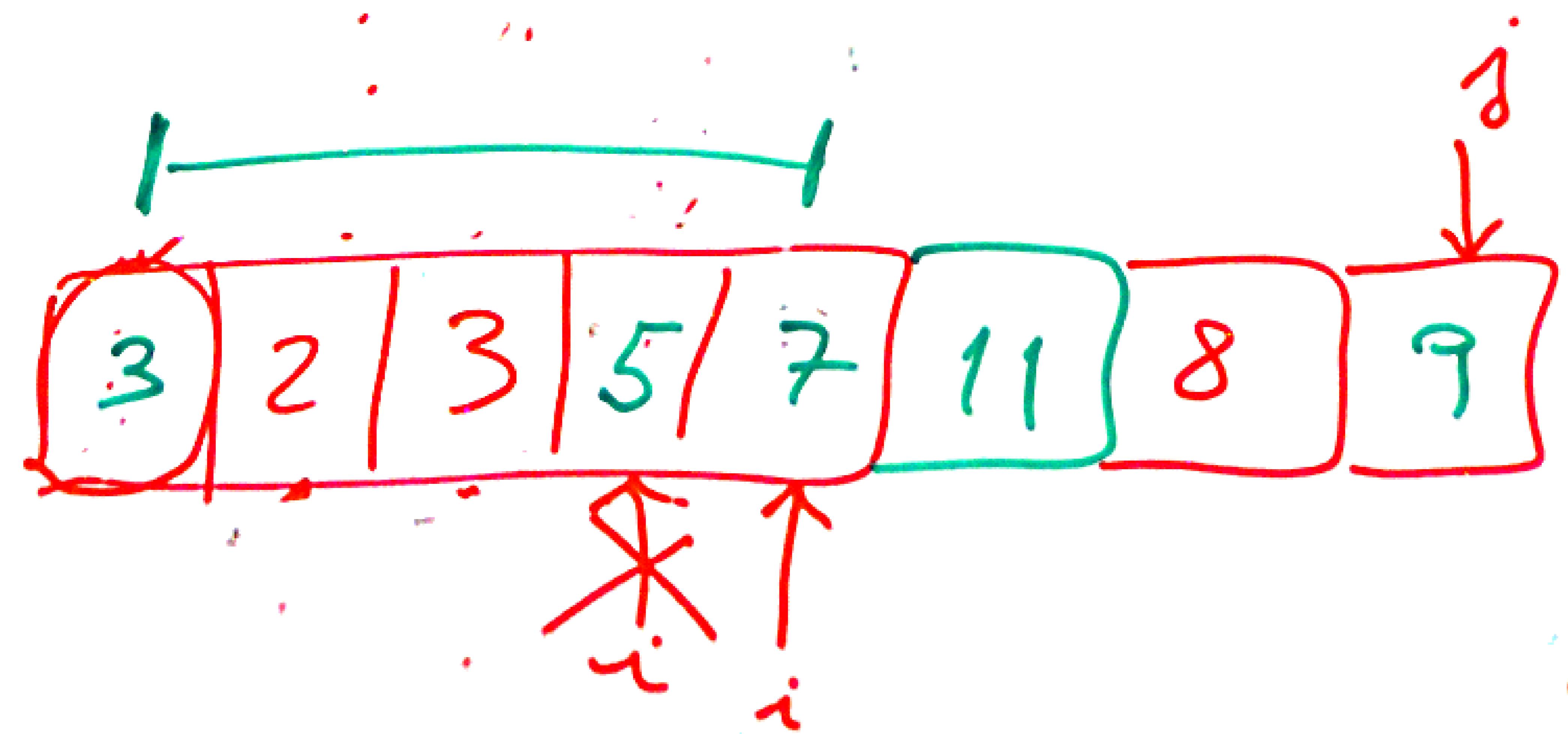
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[3, 2, 3, 5, 7, 11, 8, 9]

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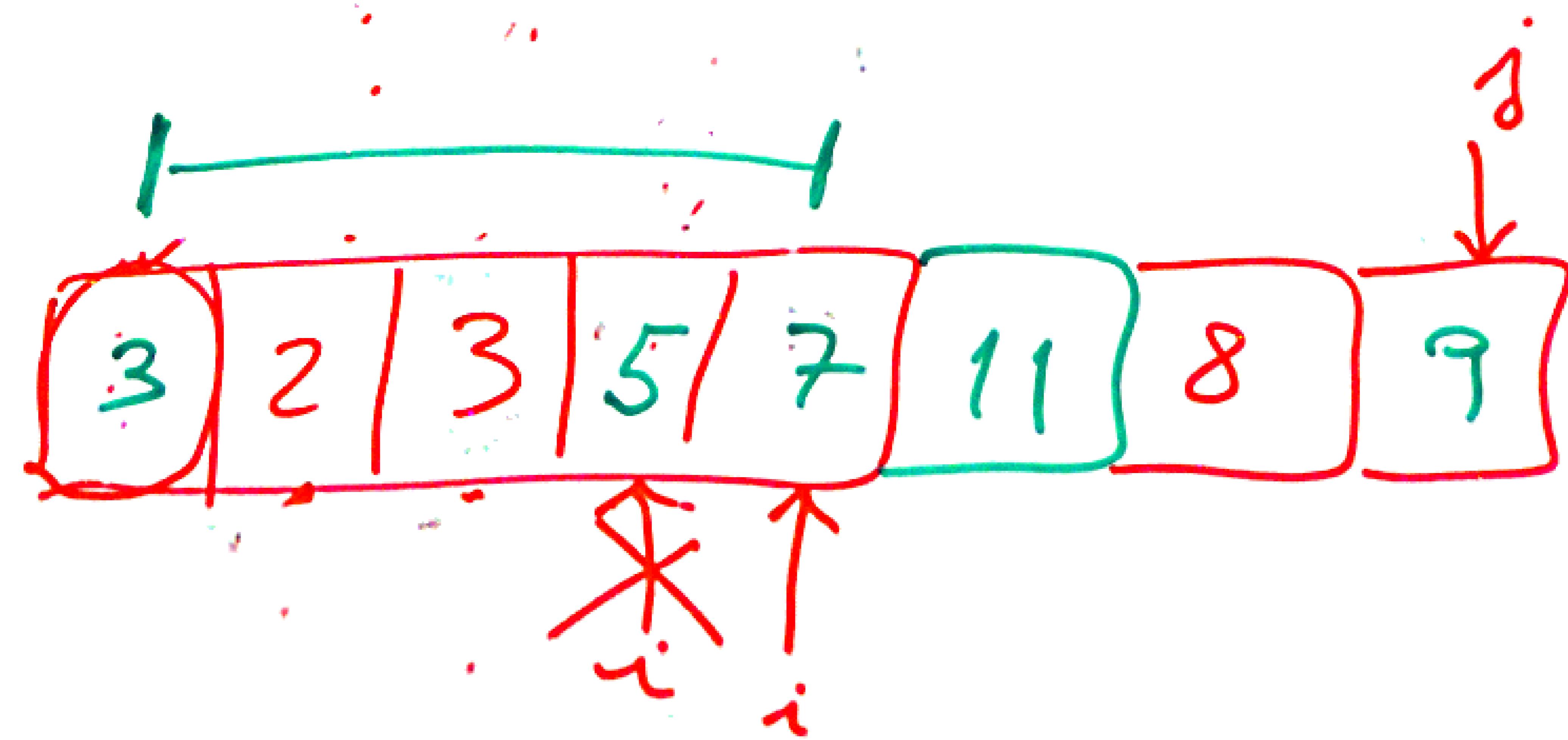
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[3, 2, 3, 5, 7, 11, 8, 9]

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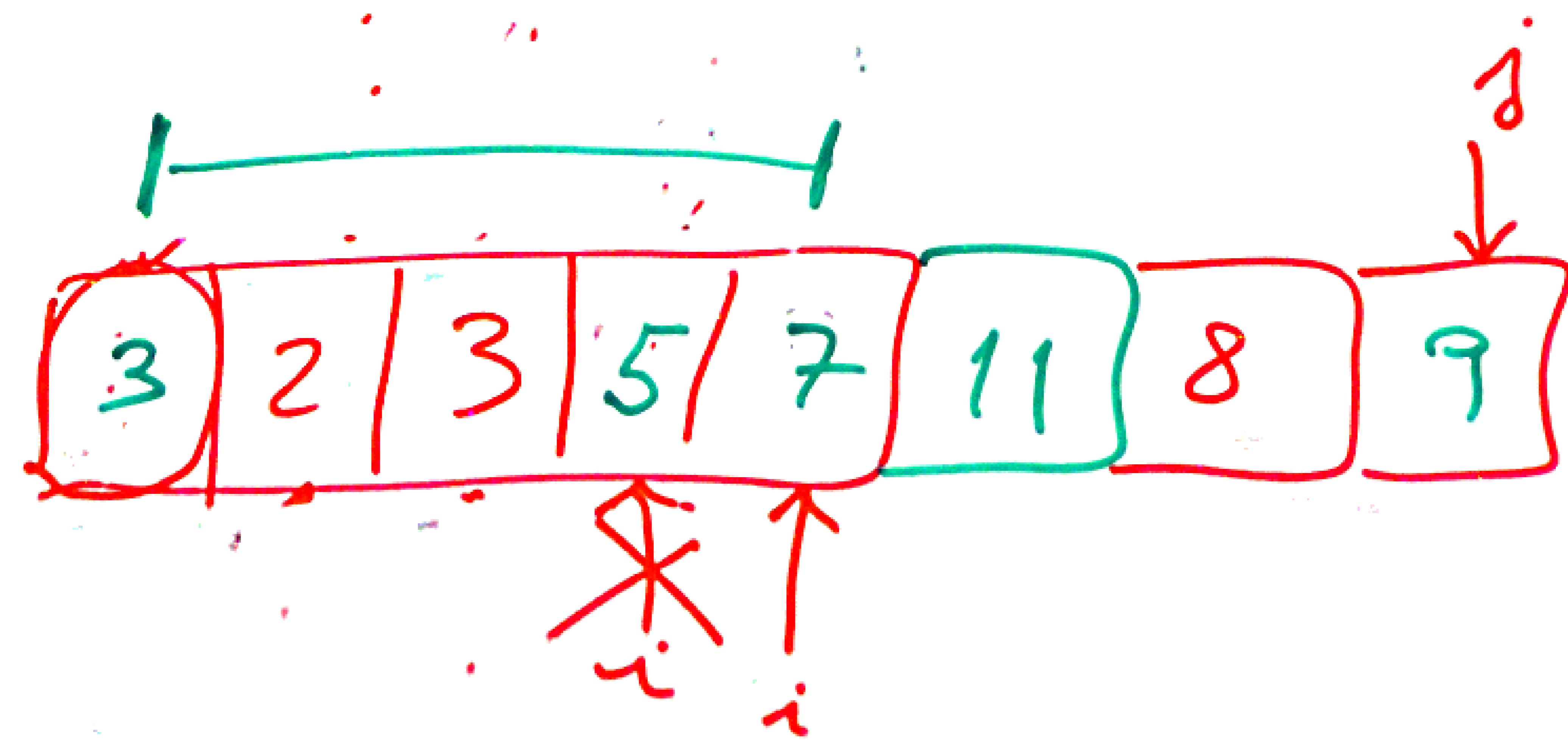


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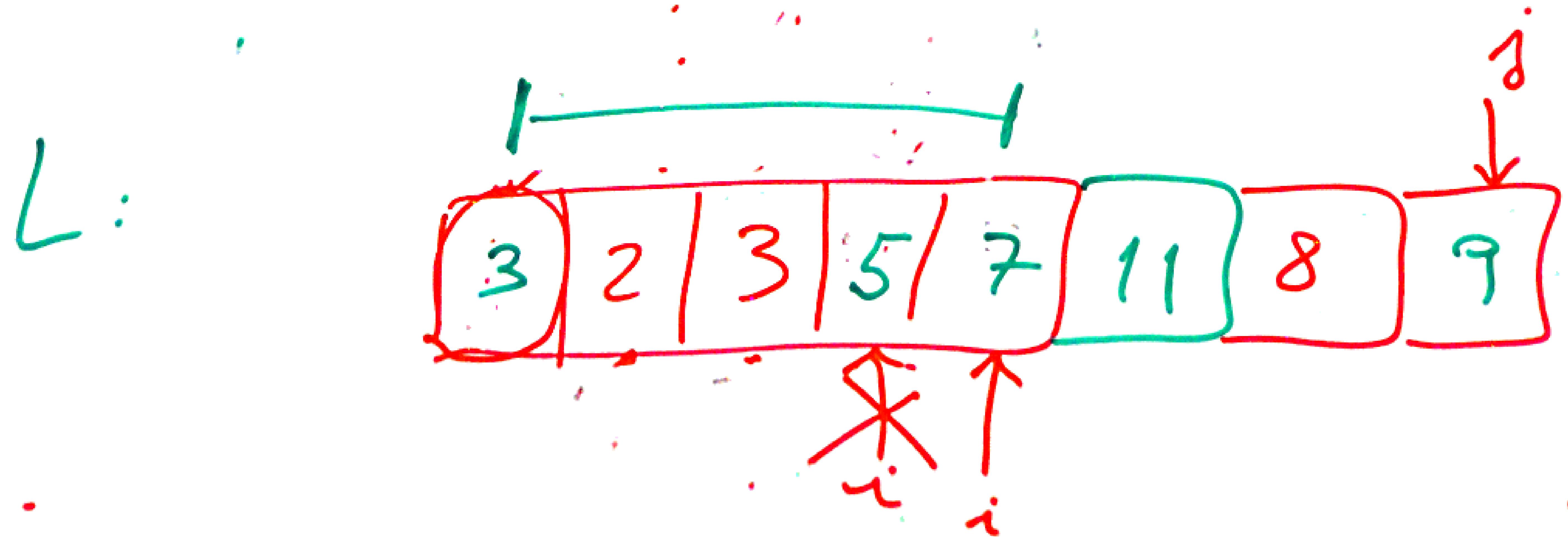
L

L:



[3, 2, 3, 5, 7, 11, 8, 9]

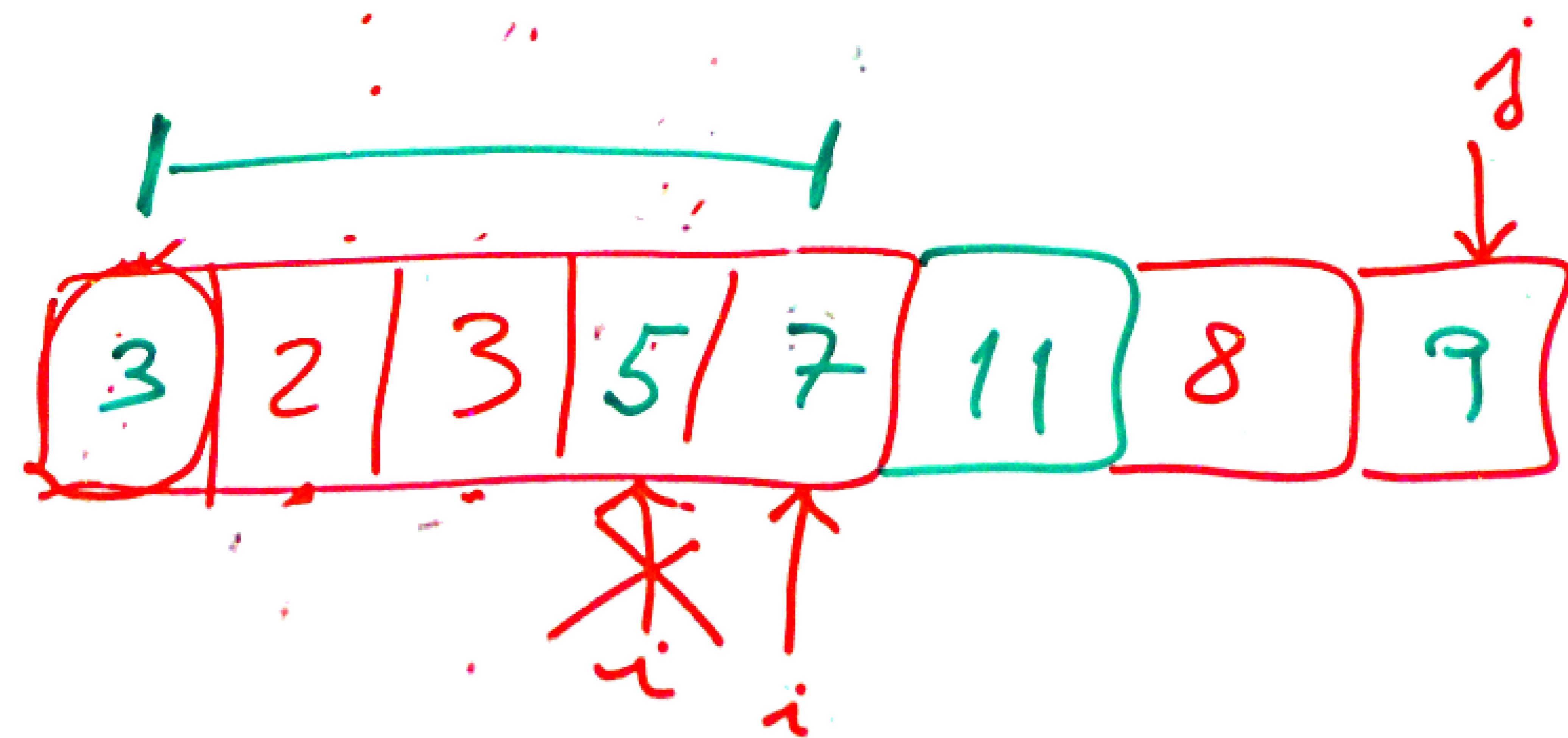
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$[3, 2, 3, 5, 7, 11, 8, 9]$

$\{0, \dots, 9, C, 3, 13\}$

L:

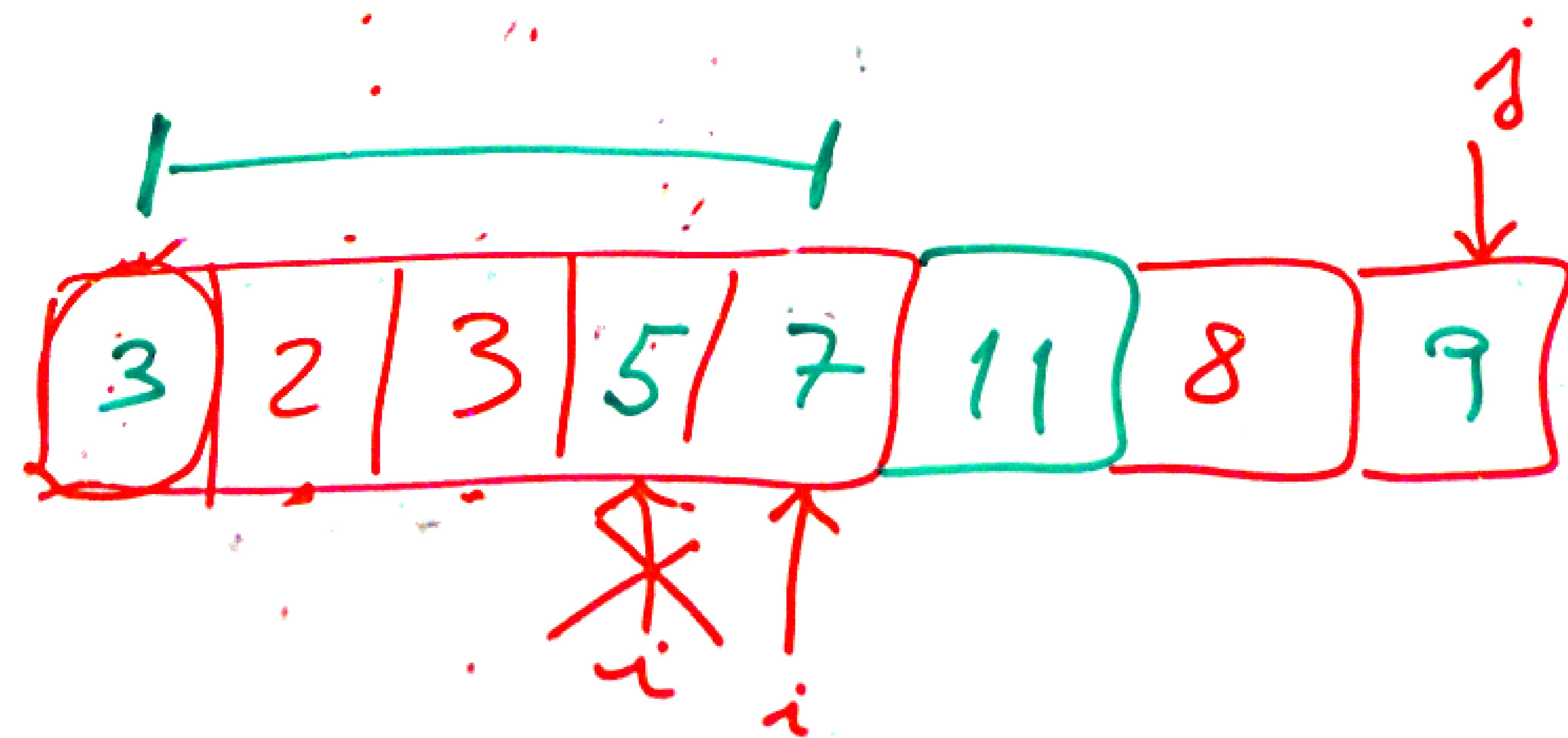


[3, 2, 3, 5, 7, 11, 8, 9]

{0, -, 9, 4, 3,
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L

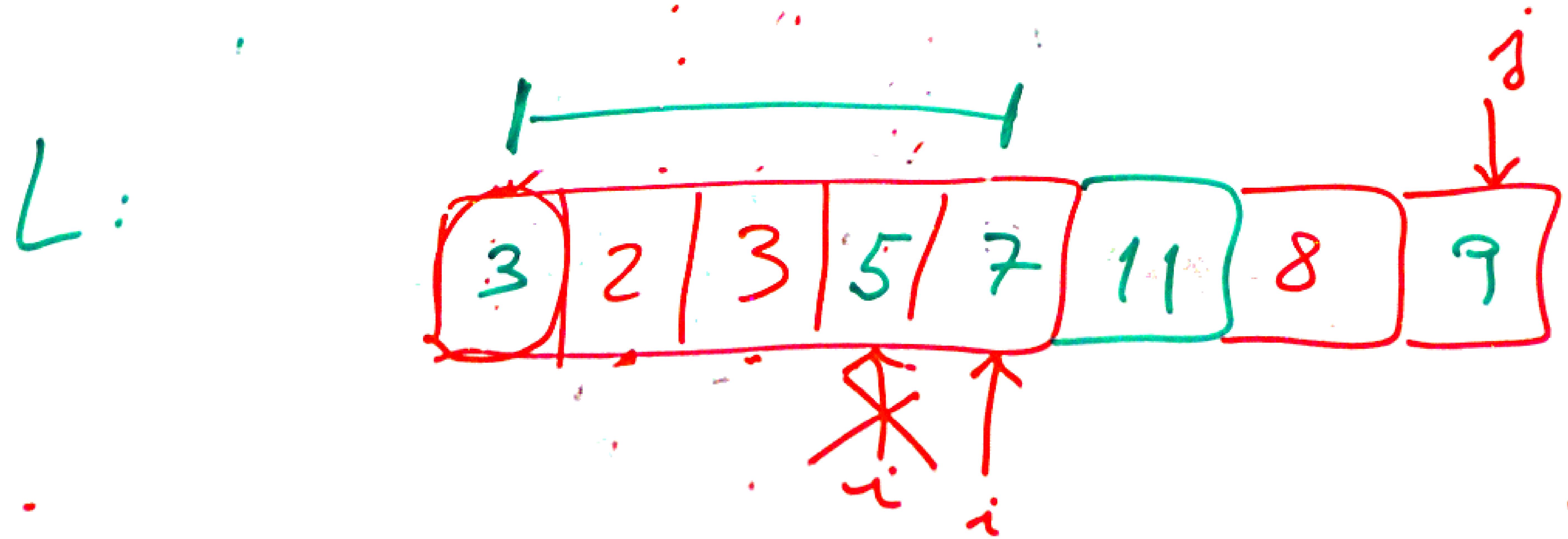
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[3, 2, 3, 5, 7, 11, 8, 9]

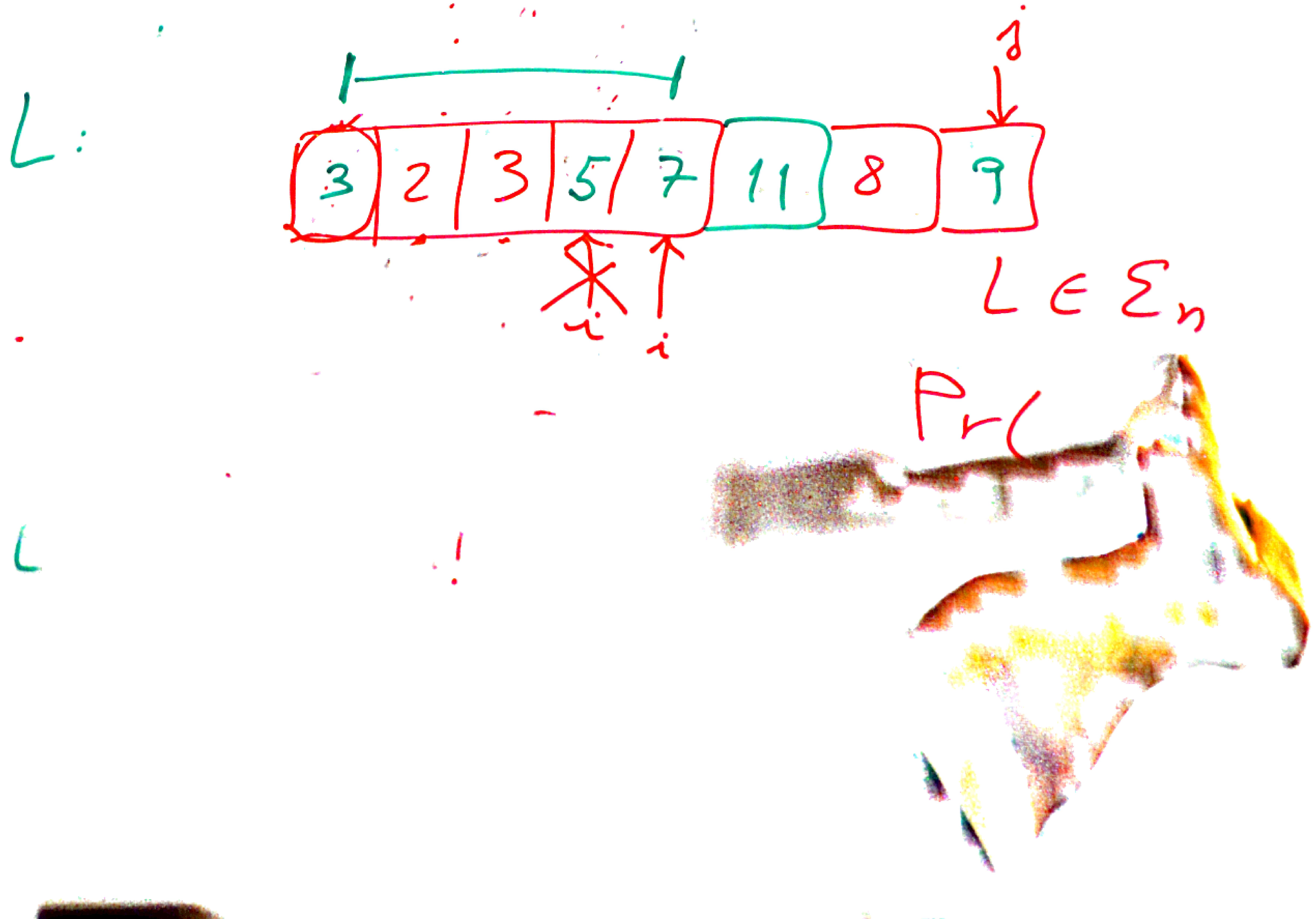
{0, -, 9, C, 3,
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L

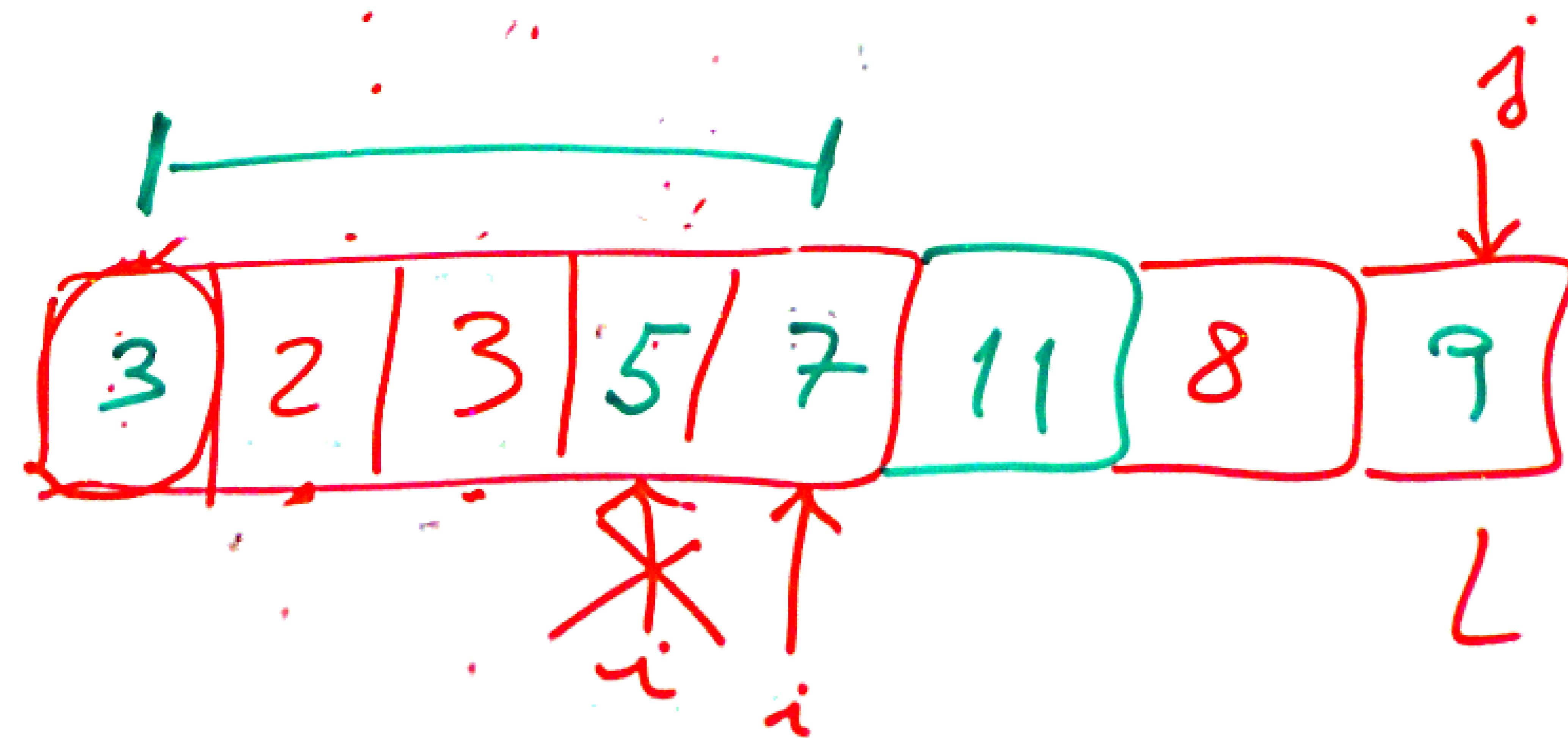


[3, 2, 3, 5, 7, 11, 8, 9]

{0, --, 9, C, 3,
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n!

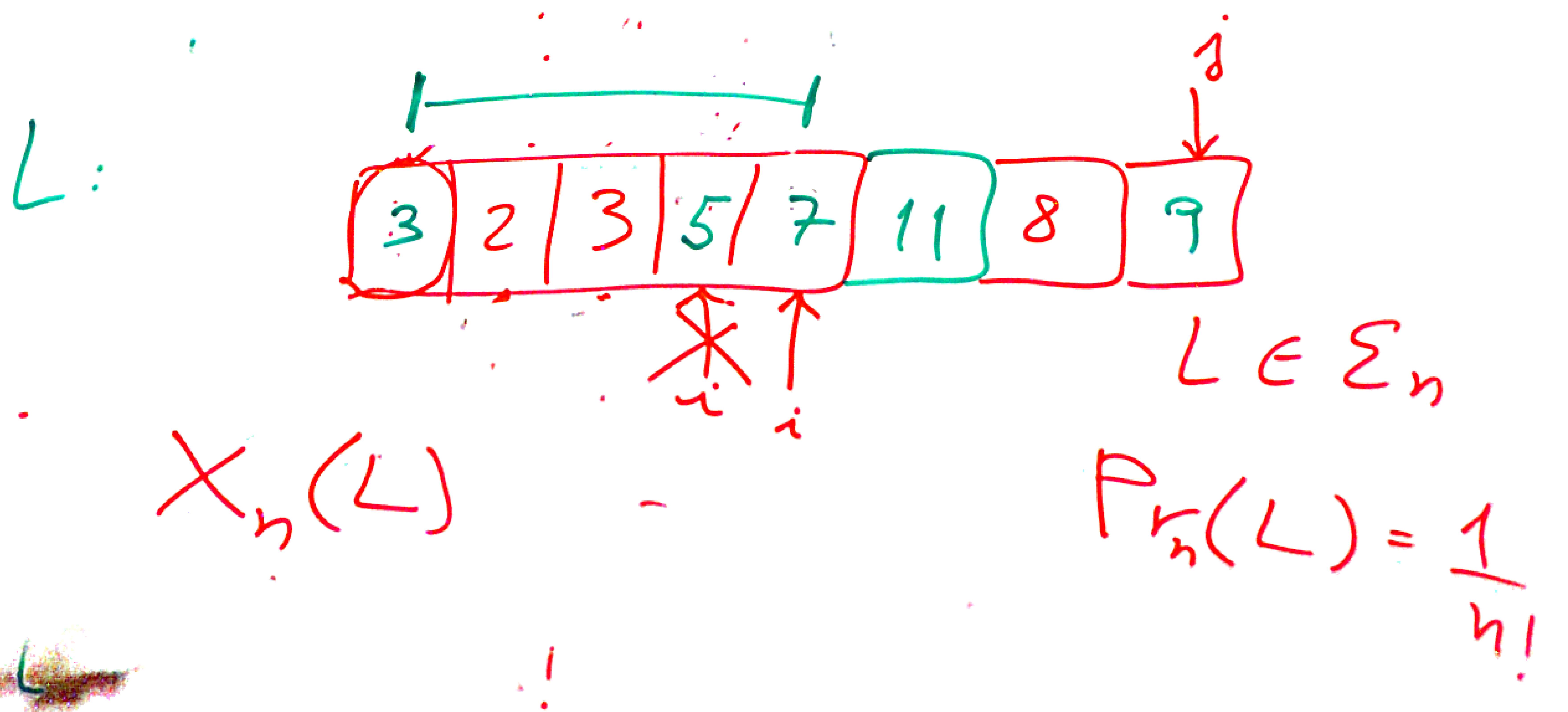


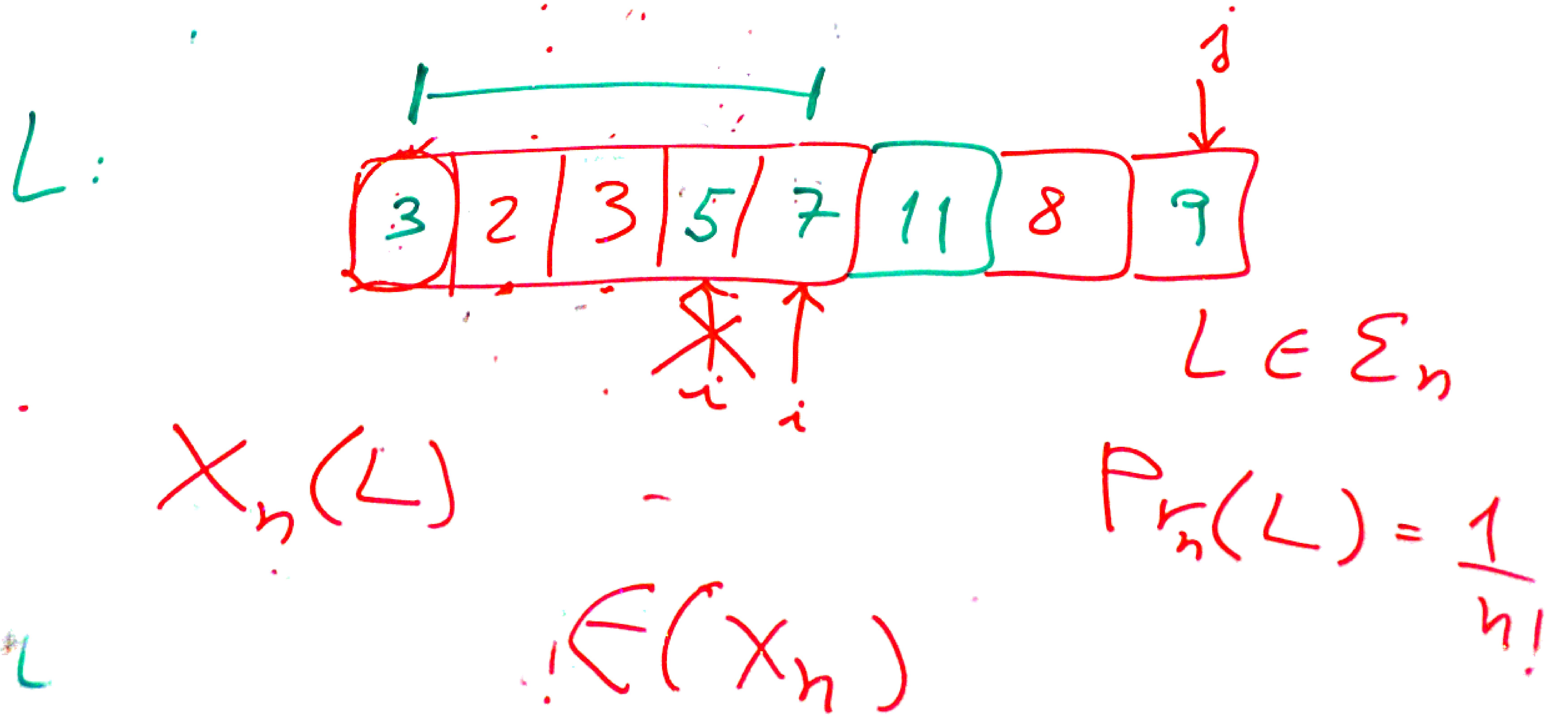
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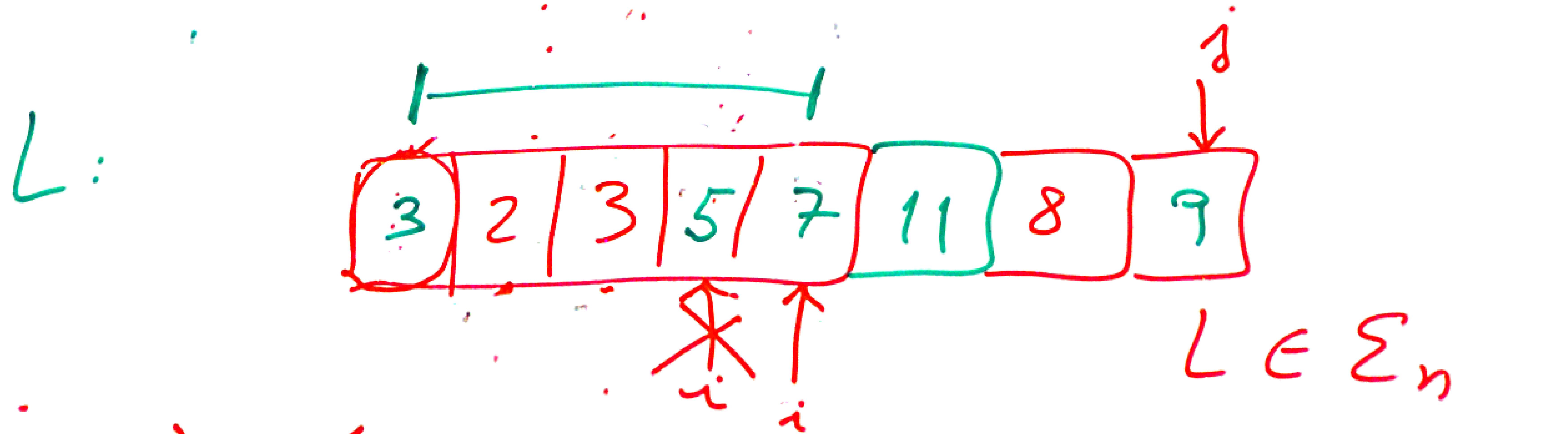


$$L \in \Sigma_n$$

$$\Pr_n(L) = \frac{1}{n!}$$





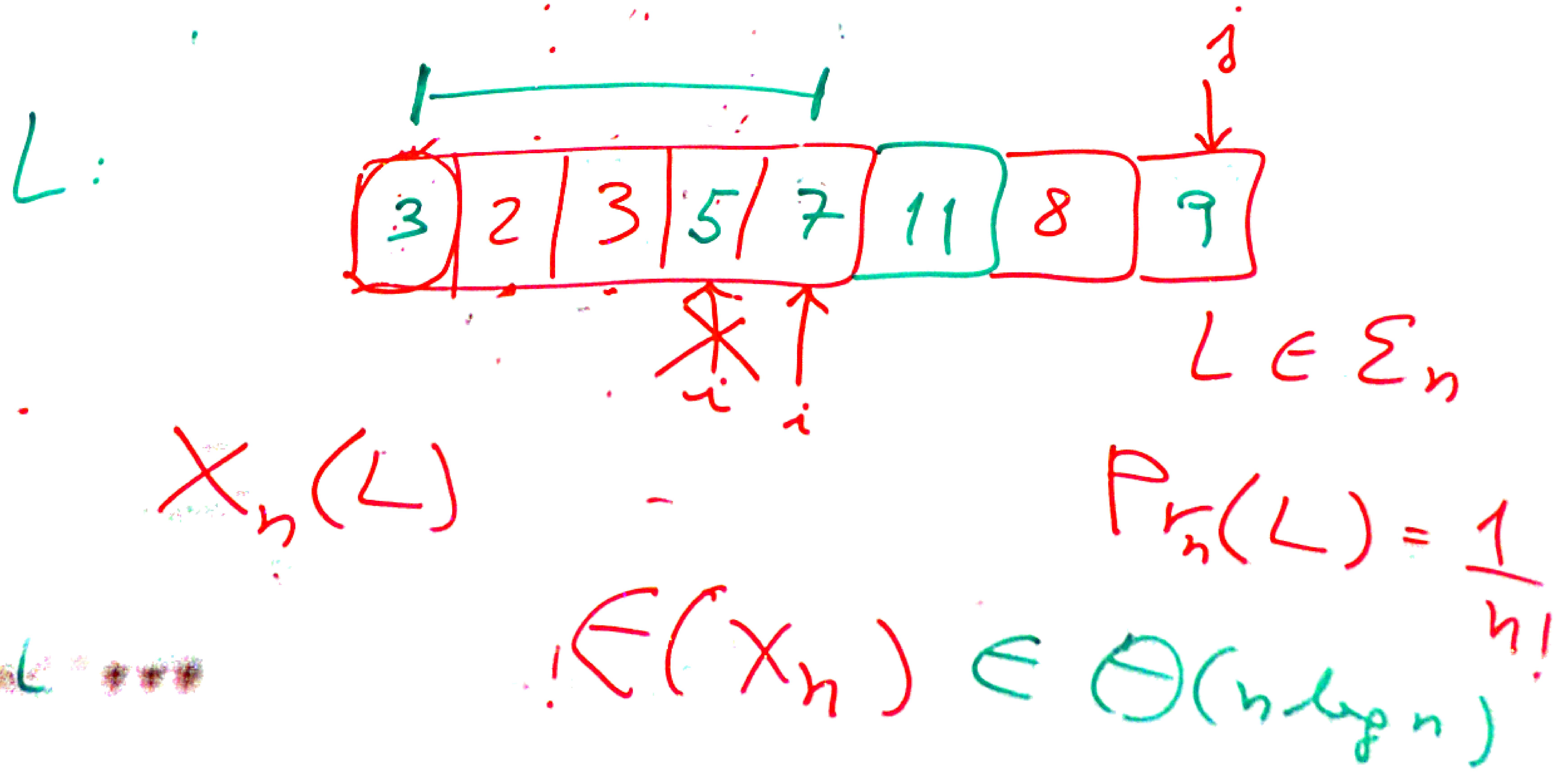


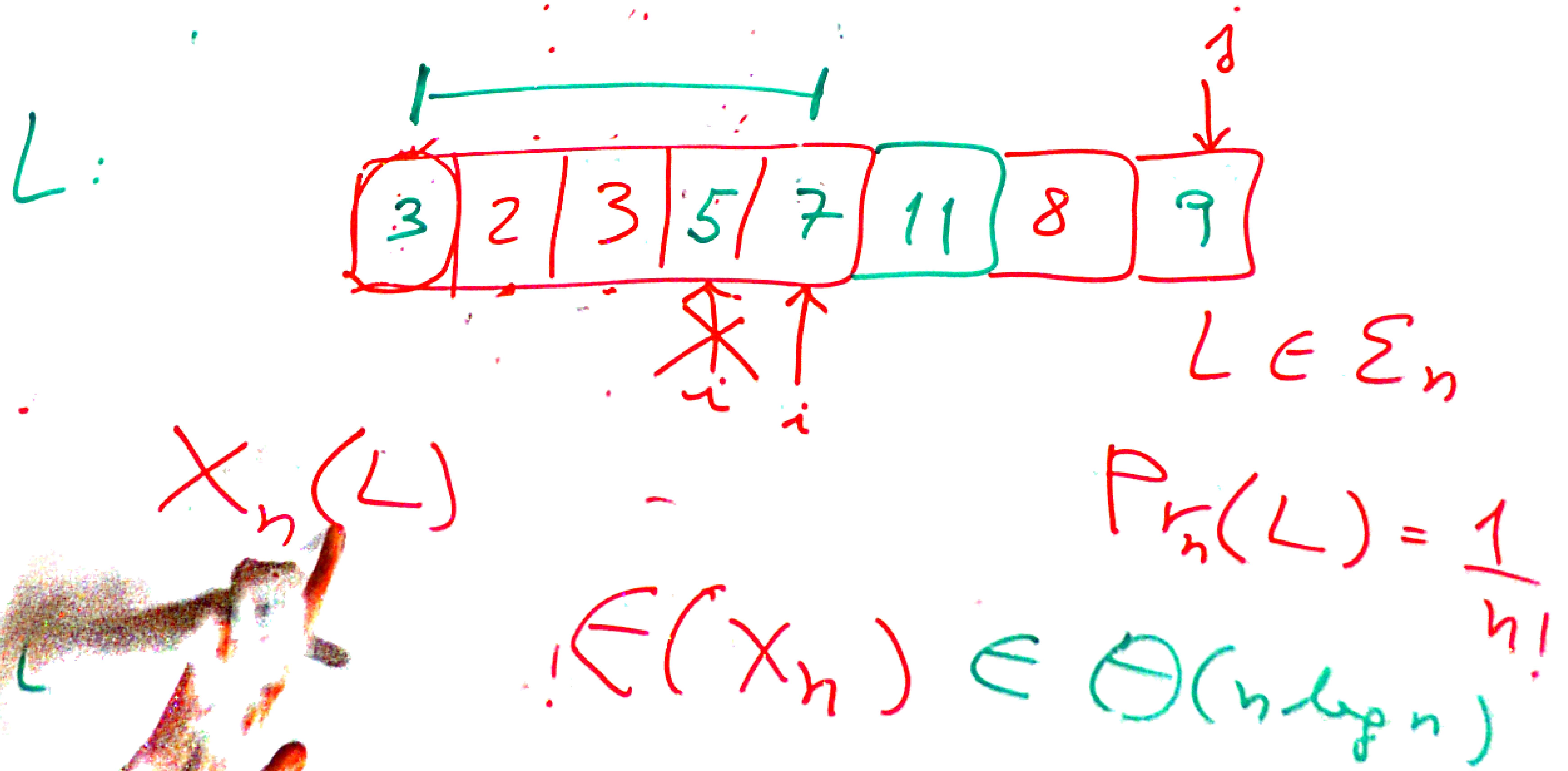
$$L \in \Sigma_n$$

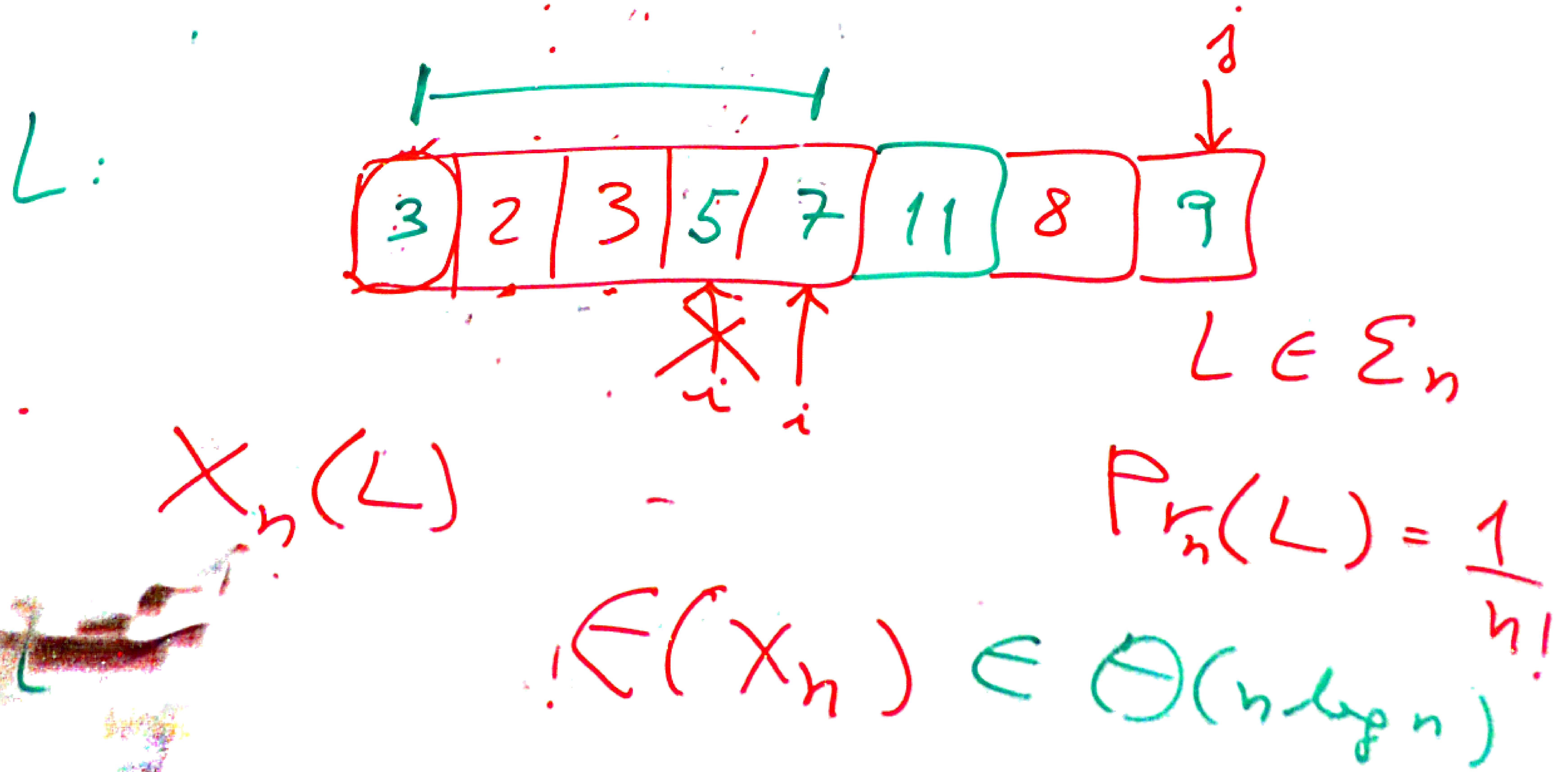
$x_n(L)$

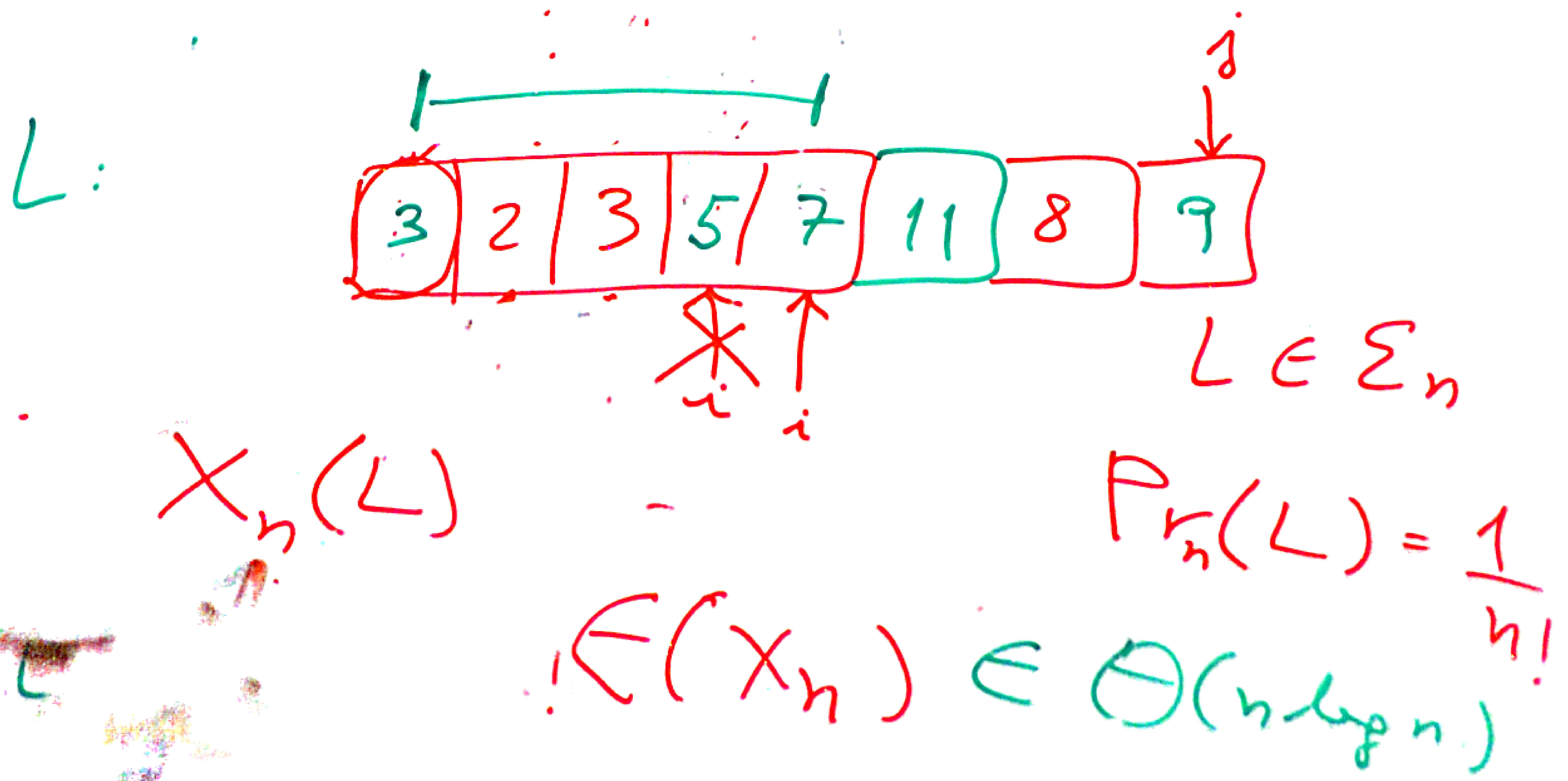
$$Pr_n(L) = \frac{1}{n!}$$

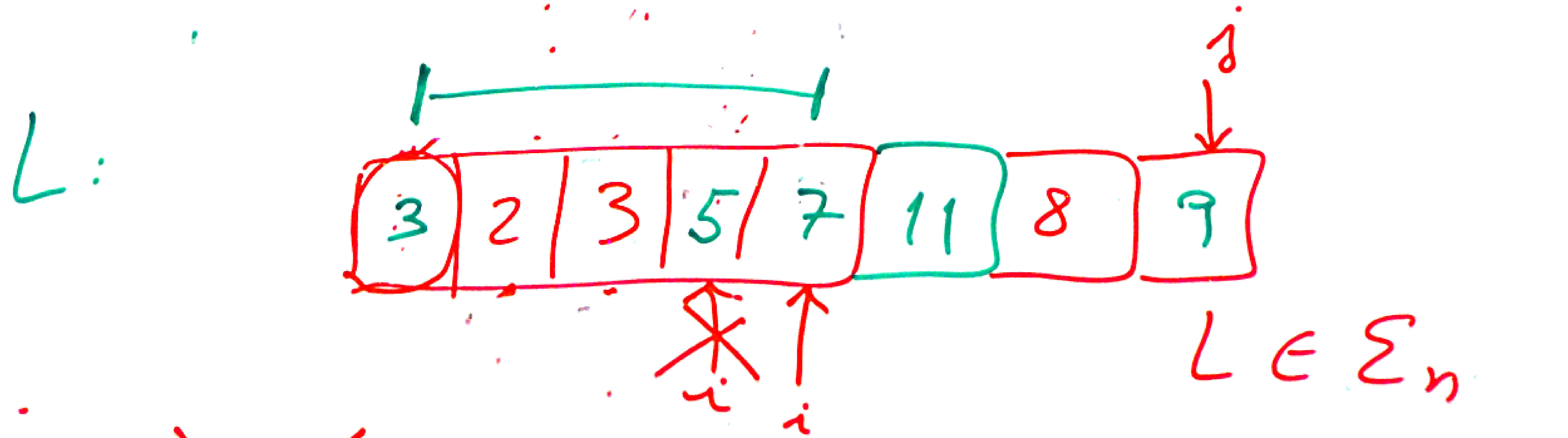
$E(x_n) \in \Theta(n \log n)$











$$L \in \Sigma_n$$

$X_n(L)$

$$\Pr_n(L) = \frac{1}{n!}$$

$$\mathbb{E}(X_n) \in \Theta(n \log n)$$

