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Algoritmos e Estruturas de Dados

Mergesort

d) Considere a execução do MergeSort sobre a entrada $V = (3,4,7,6,2,1,0,5)$. Imediatamente após a ***terceira*** execução da função ***merge***, o vetor estará na forma $V = (3,4,6,7,1,2,0,5)$.

d) Considere a execução do MergeSort sobre a entrada $V = (3,4,7,6,2,1,0,5)$. Imediatamente após a ***terceira*** execução da função ***merge***, o vetor estará na forma $V = (3,4,6,7,1,2,0,5)$.

0	1	2	3	4	5	6	7
3	4	6	7	2	1	0	5

falso: fica assim (ver ilustração das iterações a seguir)

a) O MergeSort é um algoritmo do tipo ***dividir para conquistar***.

b) O MergeSort tem complexidade de ***tempo*** $\Theta(n)$ no ***melhor*** caso.

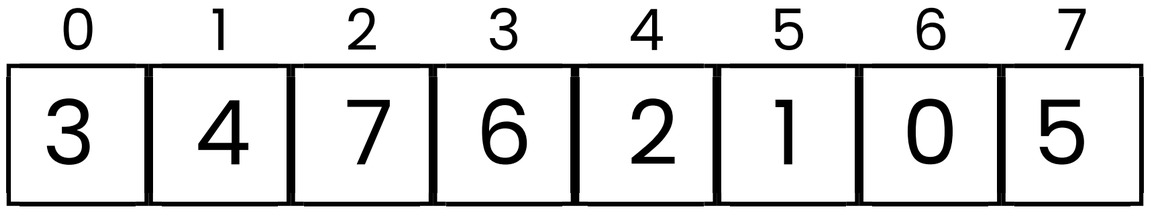
c) O MergeSort tem complexidade de ***espaço*** $\Theta(n)$ no ***pior*** caso.

a) O MergeSort é um algoritmo do tipo ***dividir para conquistar***. V

b) O MergeSort tem complexidade de ***tempo*** $\Theta(n)$ no ***melhor*** caso. F: theta(n*lg(n))

c) O MergeSort tem complexidade de ***espaço*** $\Theta(n)$ no ***pior*** caso.

V: ver ilustrações para entender por que não é O(n*lg(n))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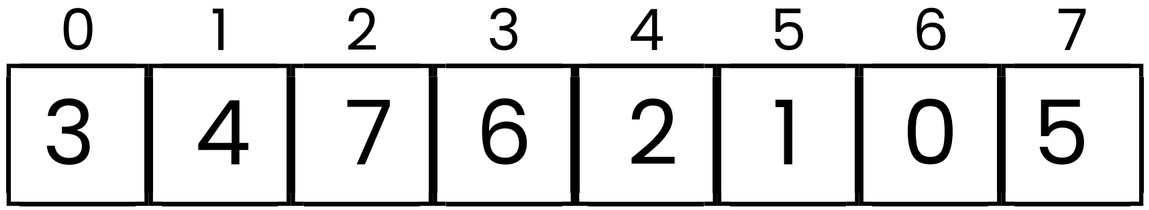
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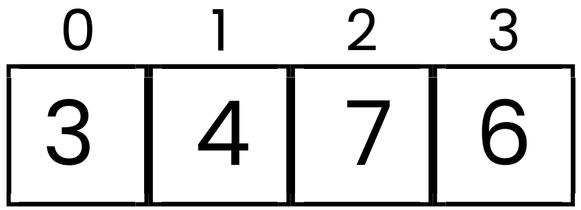
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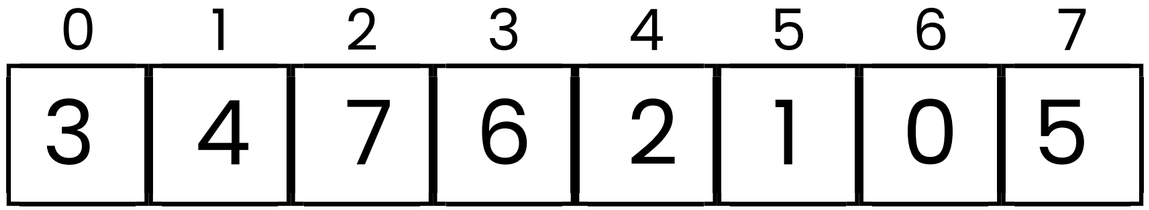
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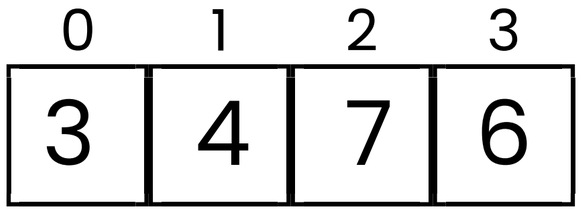
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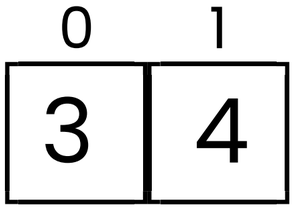
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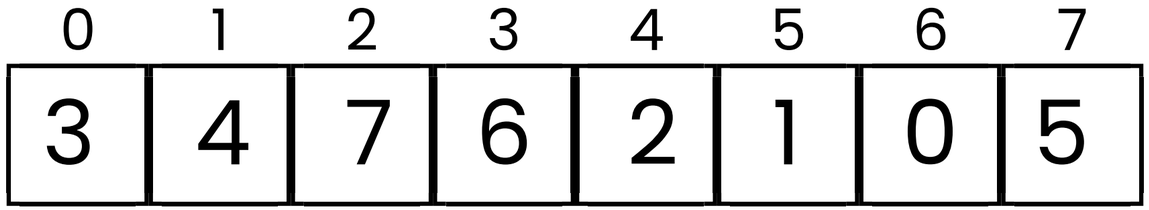
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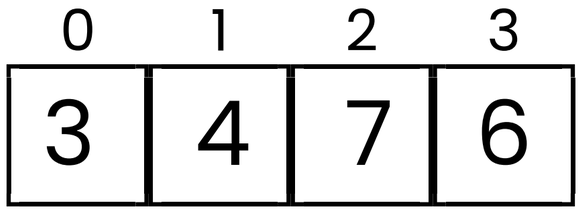
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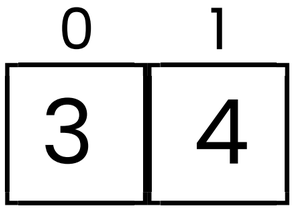
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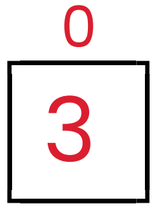
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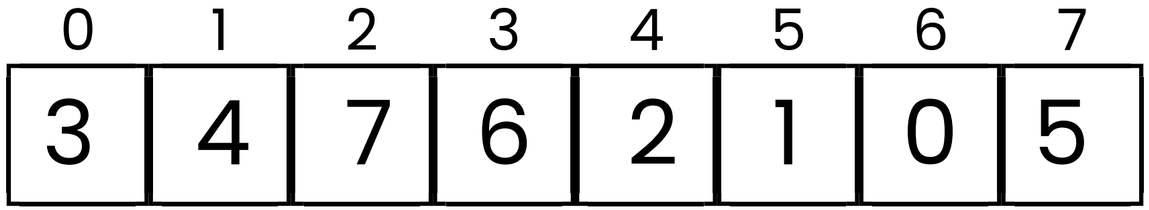
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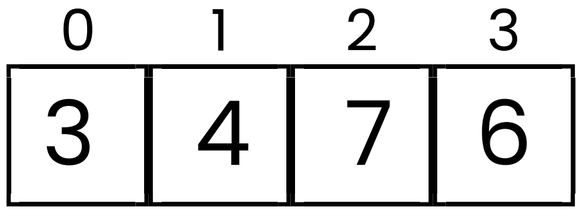
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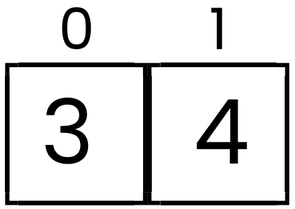
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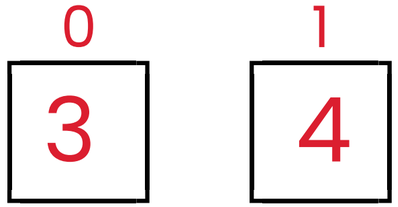
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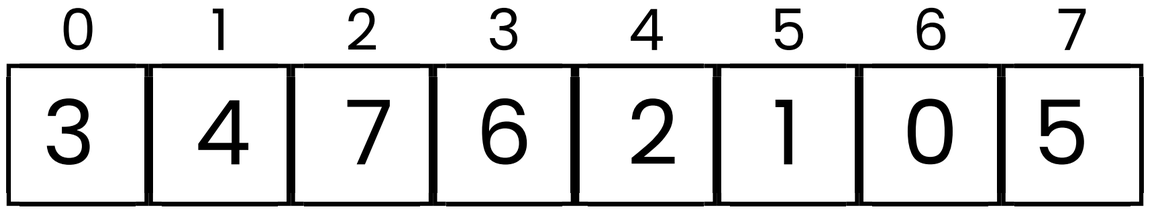
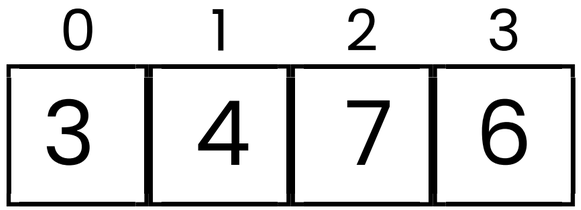
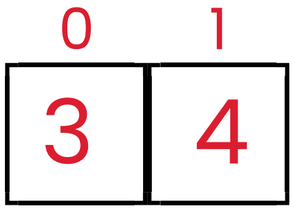
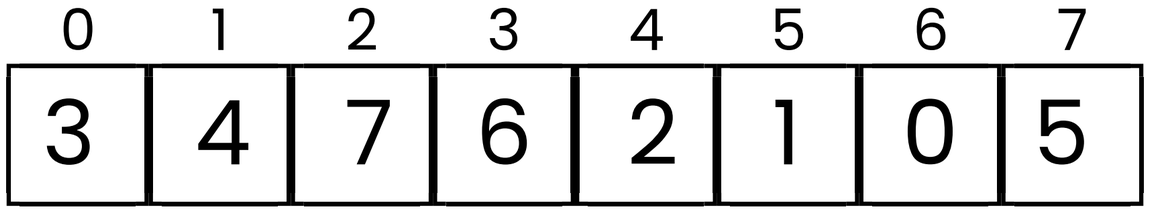






merge #1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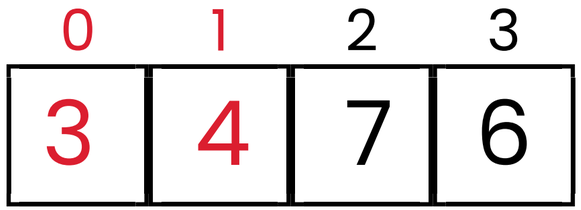
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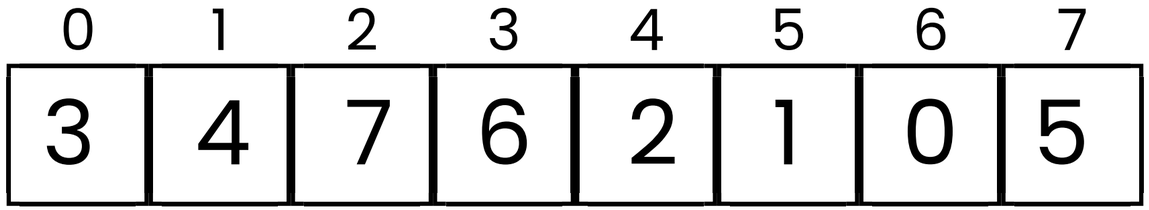
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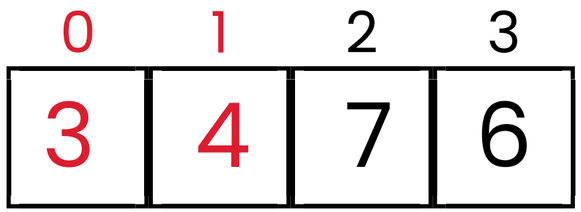
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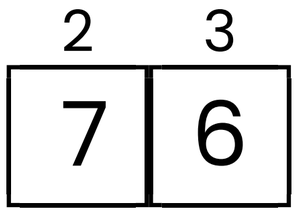
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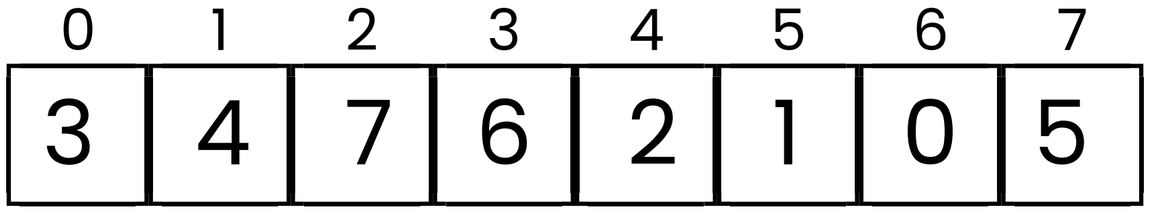
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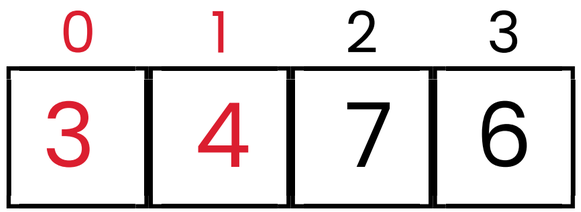
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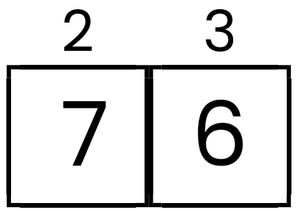
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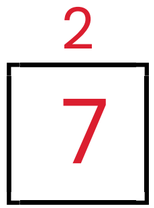
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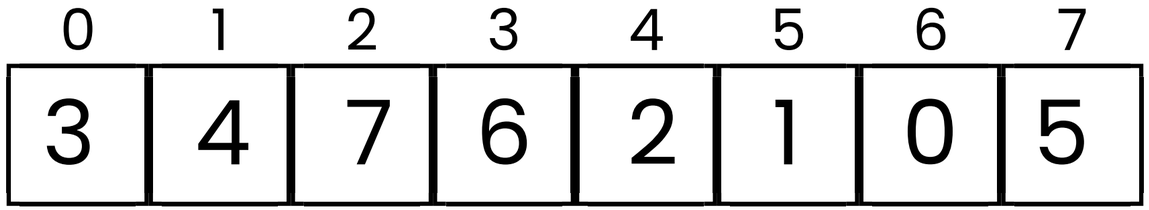
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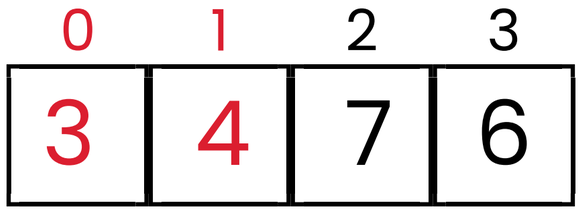
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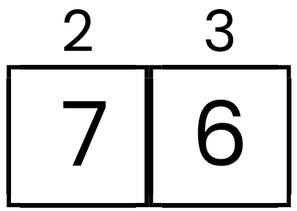
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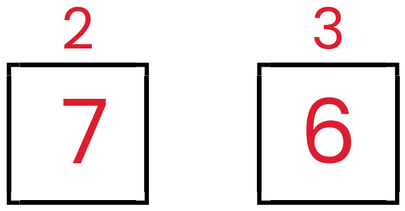
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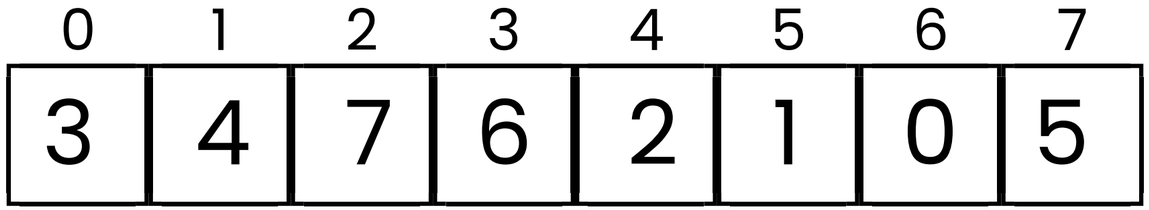

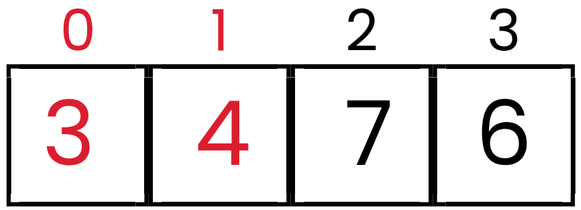

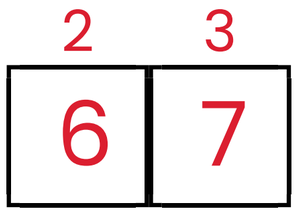

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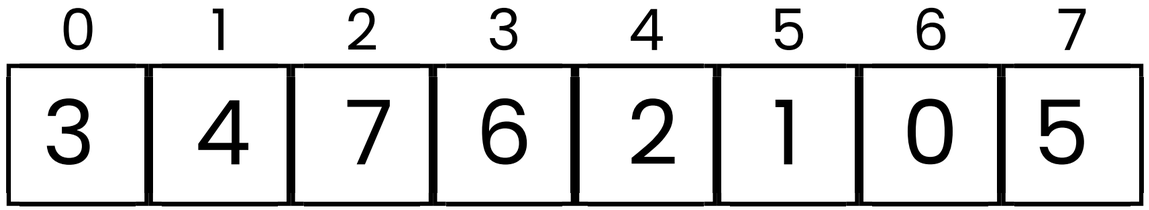

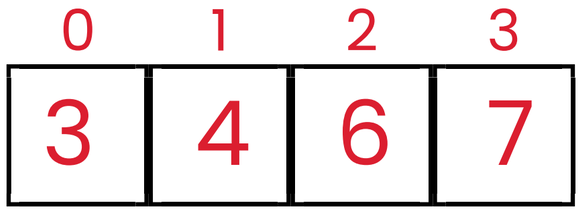

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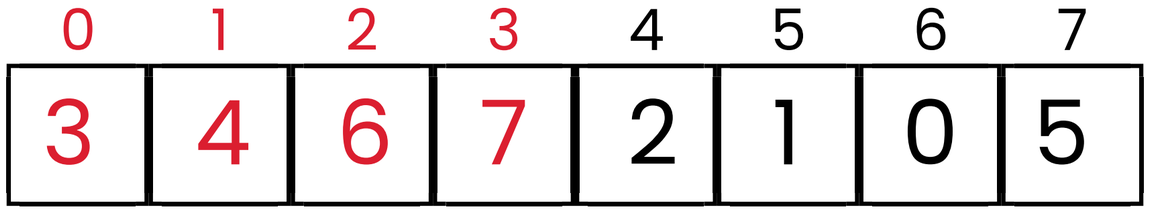
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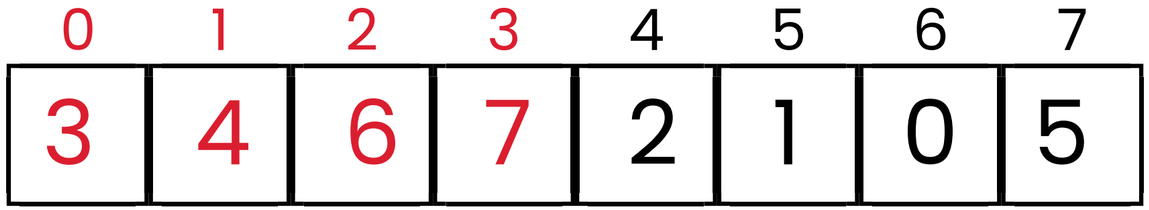
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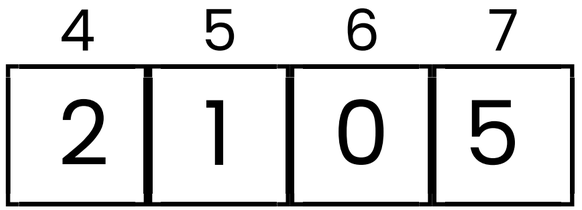
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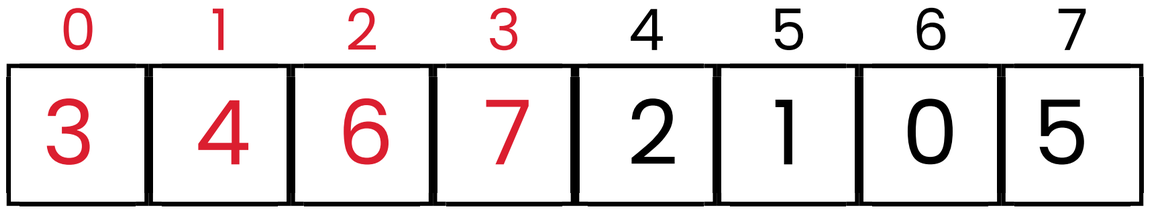
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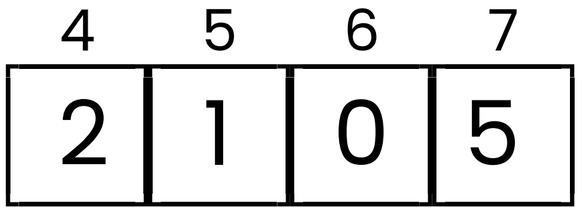
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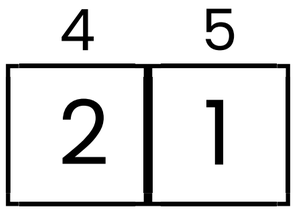
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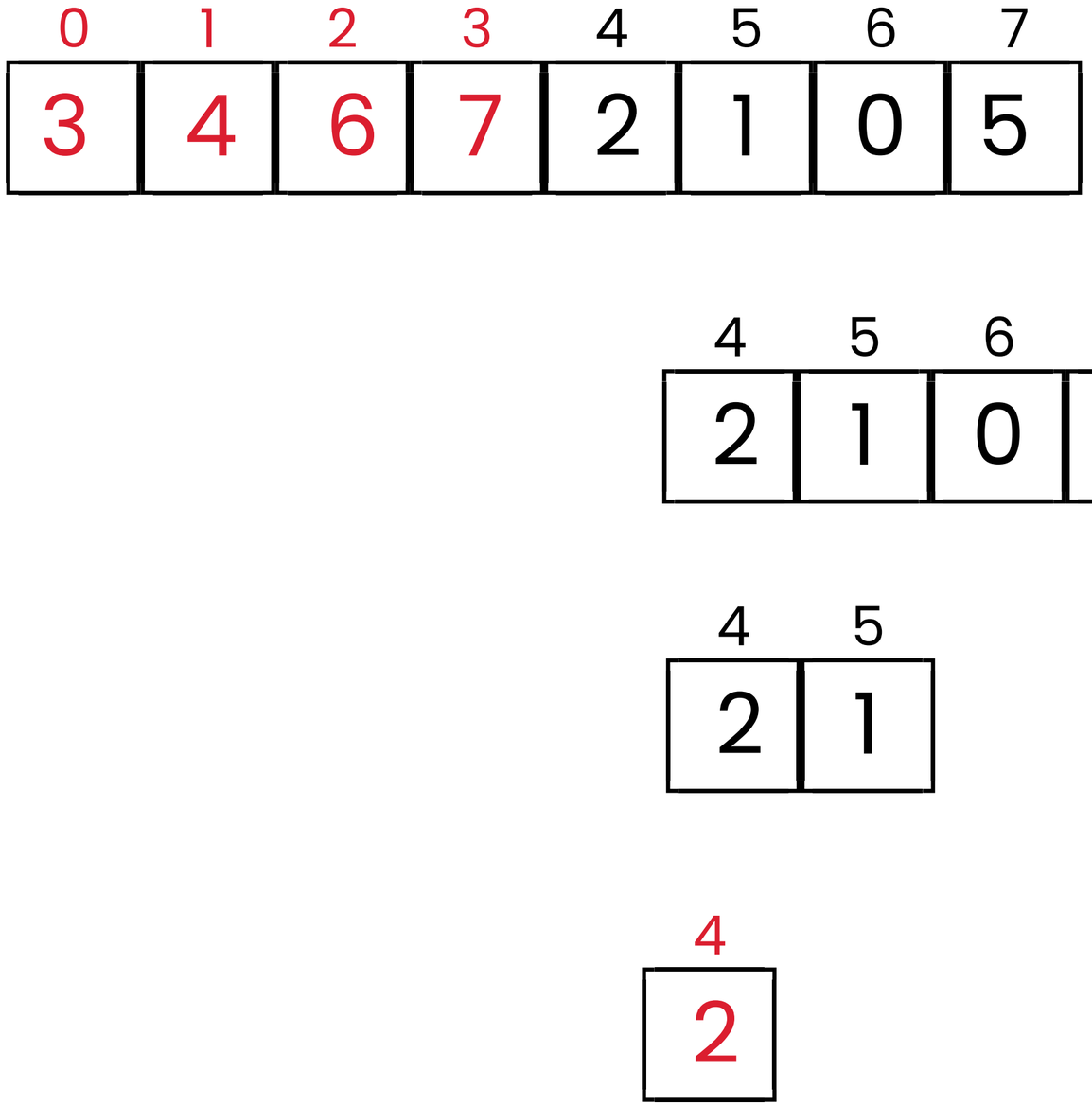
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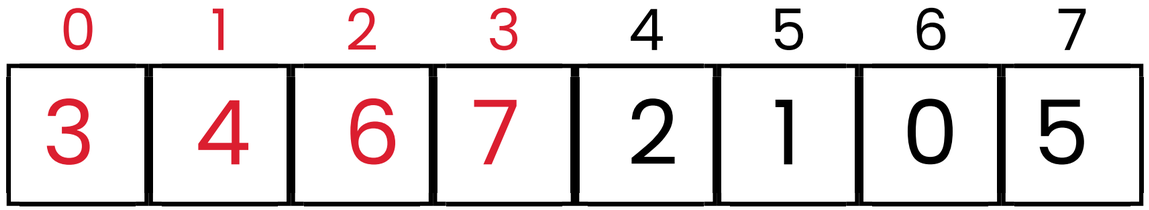
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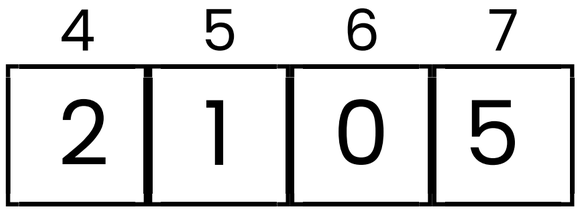
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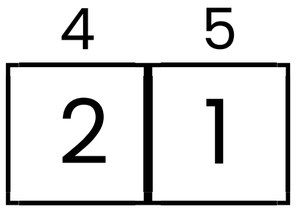
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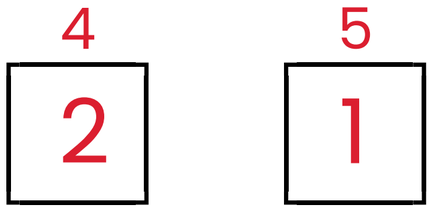
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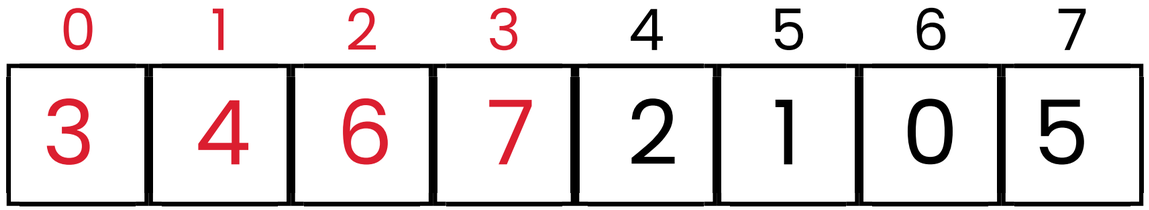
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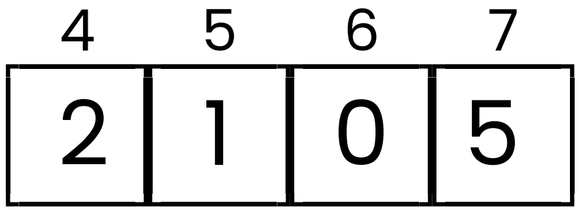
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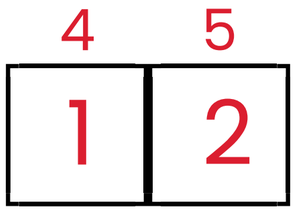
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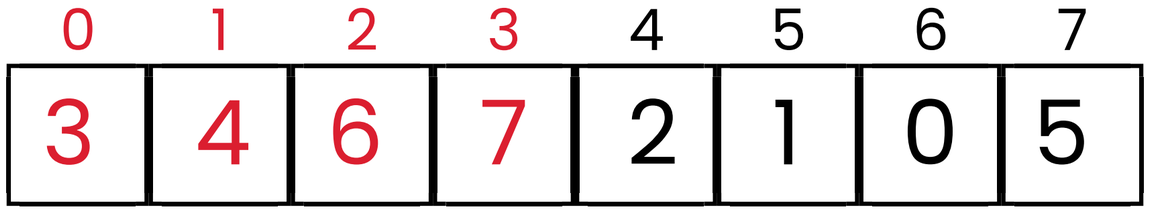
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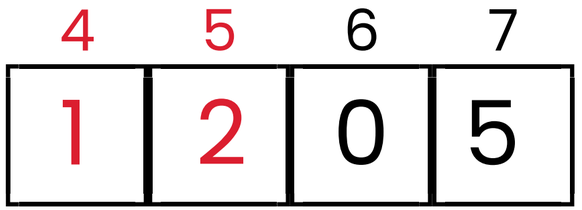
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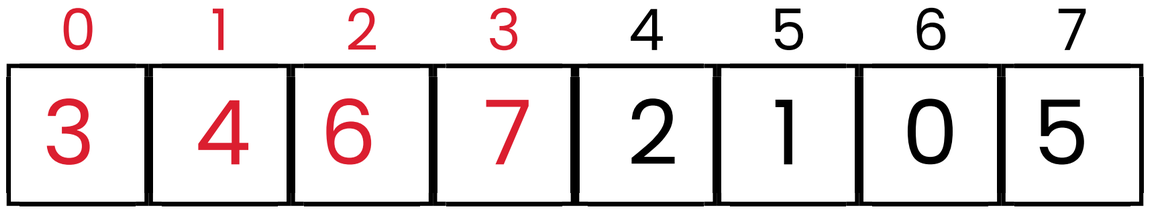
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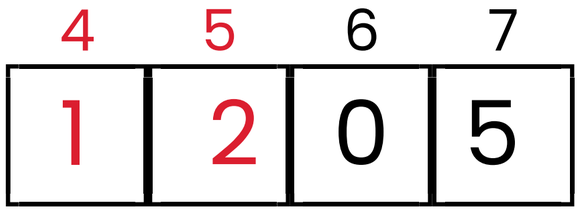
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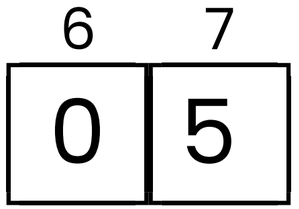
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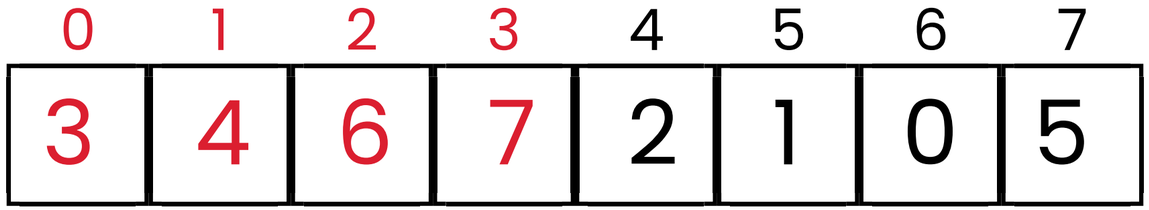
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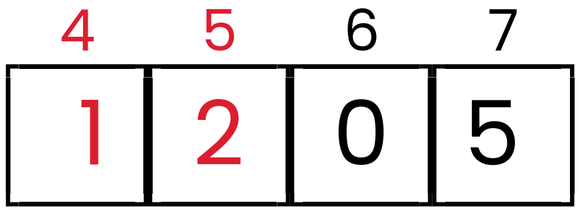
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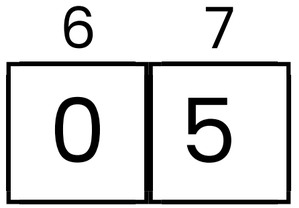
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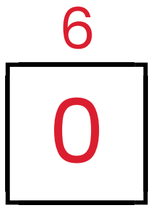
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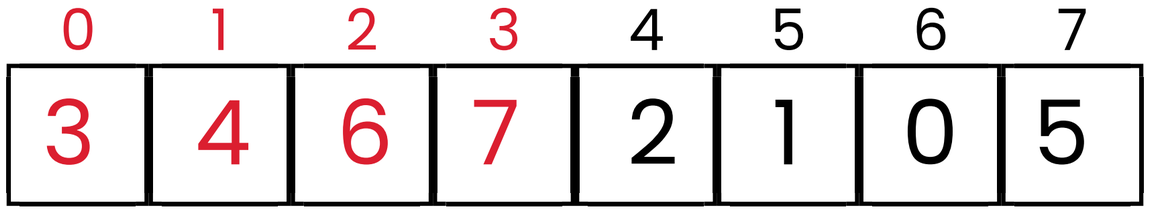
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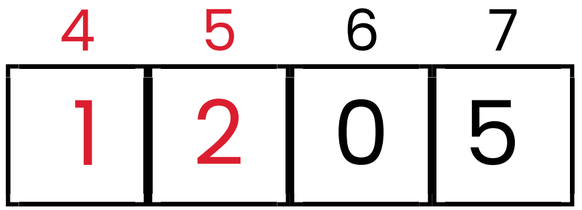
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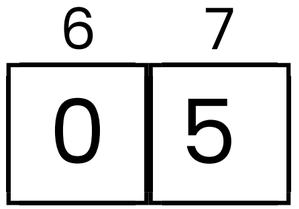
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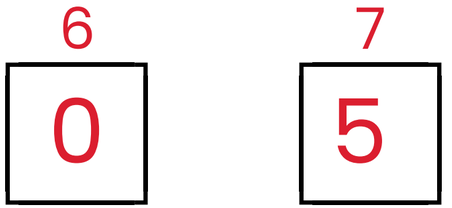
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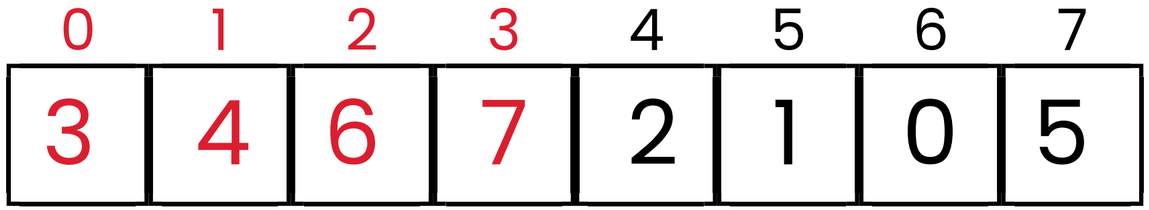
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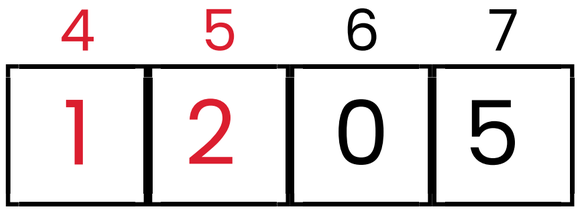
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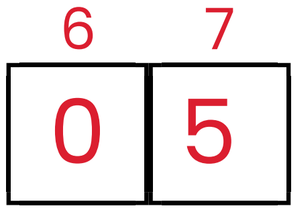
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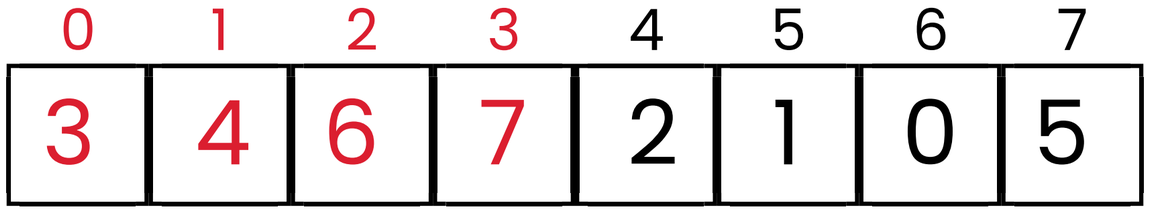
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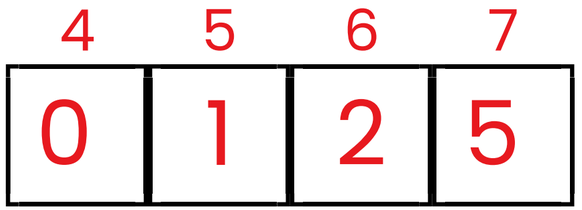
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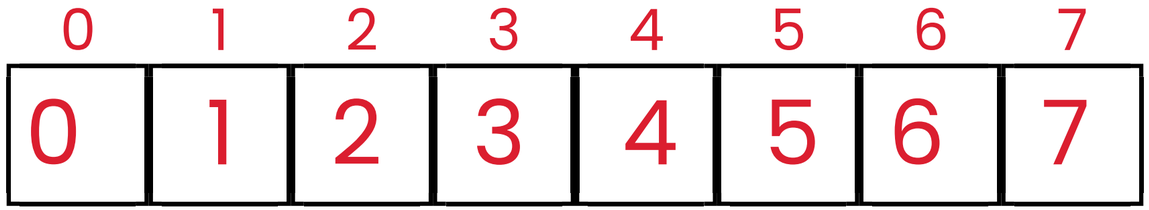
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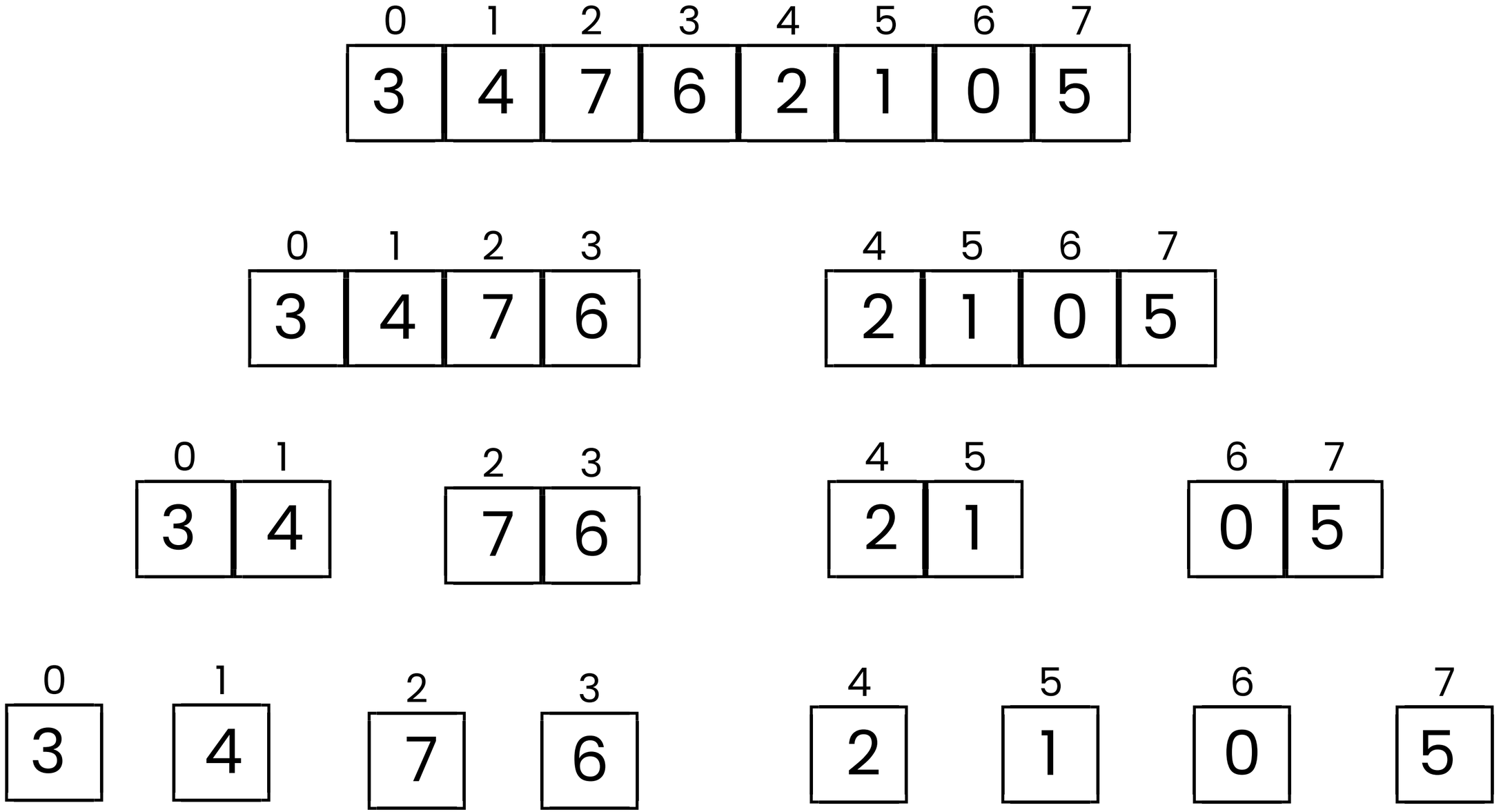
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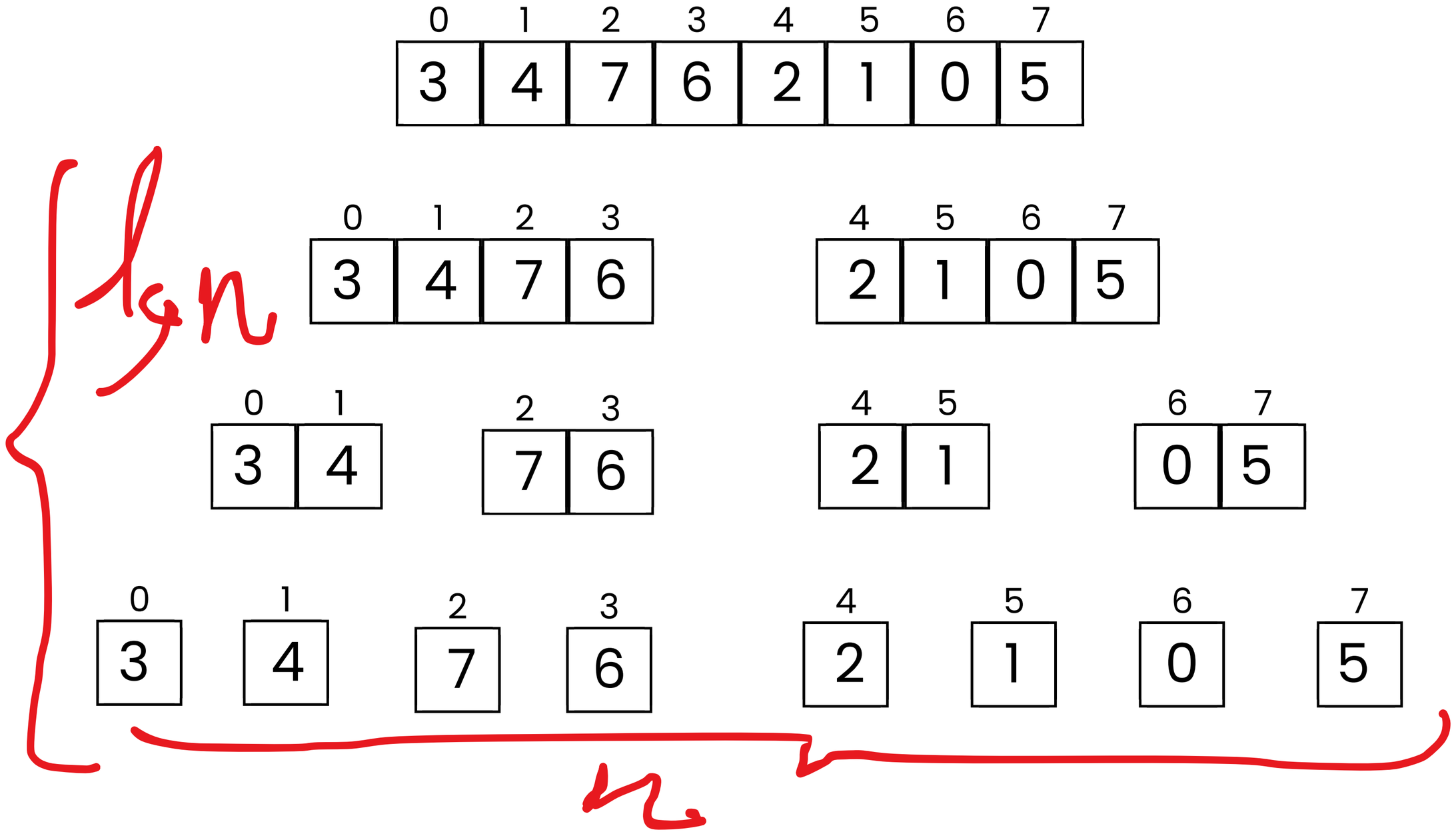
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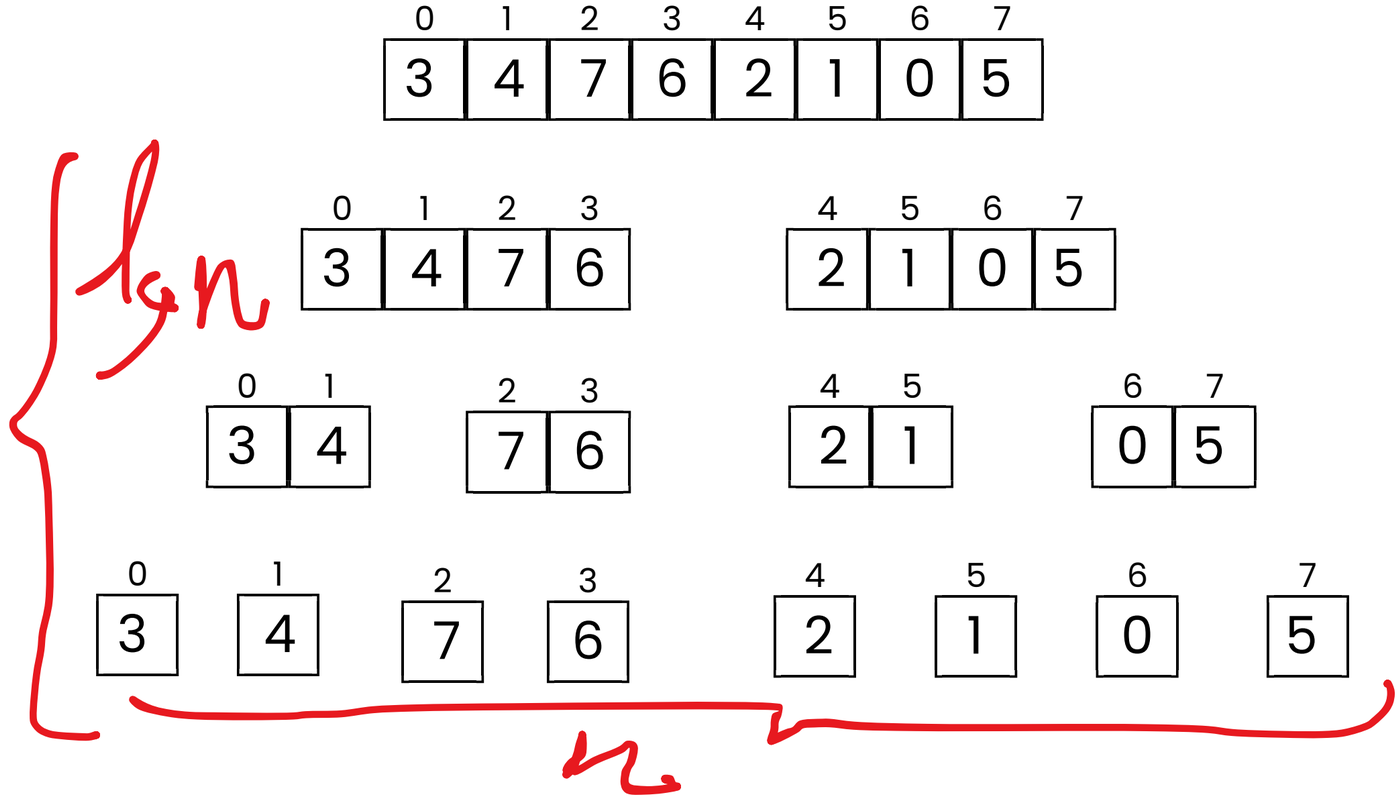

complexidade de tempo theta(n*lg(n)) vem daqui. Mas note que a memória auxiliar não armazena, em um **mesmo instante**, a árvore de recursão **inteira**. A complexidade de memória é theta(n)

- **Não deixem de fazer 2-3 provas passadas!!!**

https://www.cin.ufpe.br/~paguso/courses/if672ec/arquivo/

(**prova 1**, deixar prova 2 e finais para depois)

Add a subheading

- visualização de algoritmos de ordenação:

visualgo