

Radix Sort

Idea:

- Sort an array “a” of “n” integers, where each integer has “d” digits.
- 10 “bins” (vectors) corresponding to digits 0,...,9
- Loop, starting from the rightmost digit (“least significant”). $j = d - 1, d - 2, \dots, 0$
 - For $i = 0, \dots, n-1$. Insert number $a[i]$ at the end of bin number $\text{digit}(j, a[i])$
 - Update array “a” by combining bins 0,...,9 (in order)
 - Clear the bins

$d = 3$ $j = 2$

a:

0	329
1	457
2	657
3	839
4	436
5	720
6	355

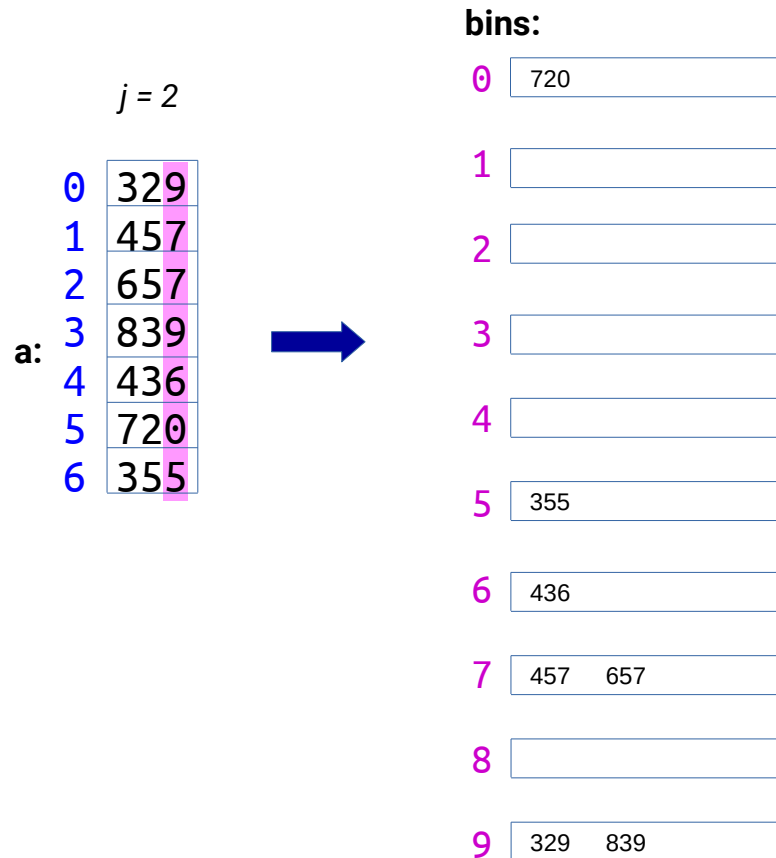
bins:

0	<input type="text"/>
1	<input type="text"/>
2	<input type="text"/>
3	<input type="text"/>
4	<input type="text"/>
5	<input type="text"/>
6	<input type="text"/>
7	<input type="text"/>
8	<input type="text"/>
9	<input type="text"/>

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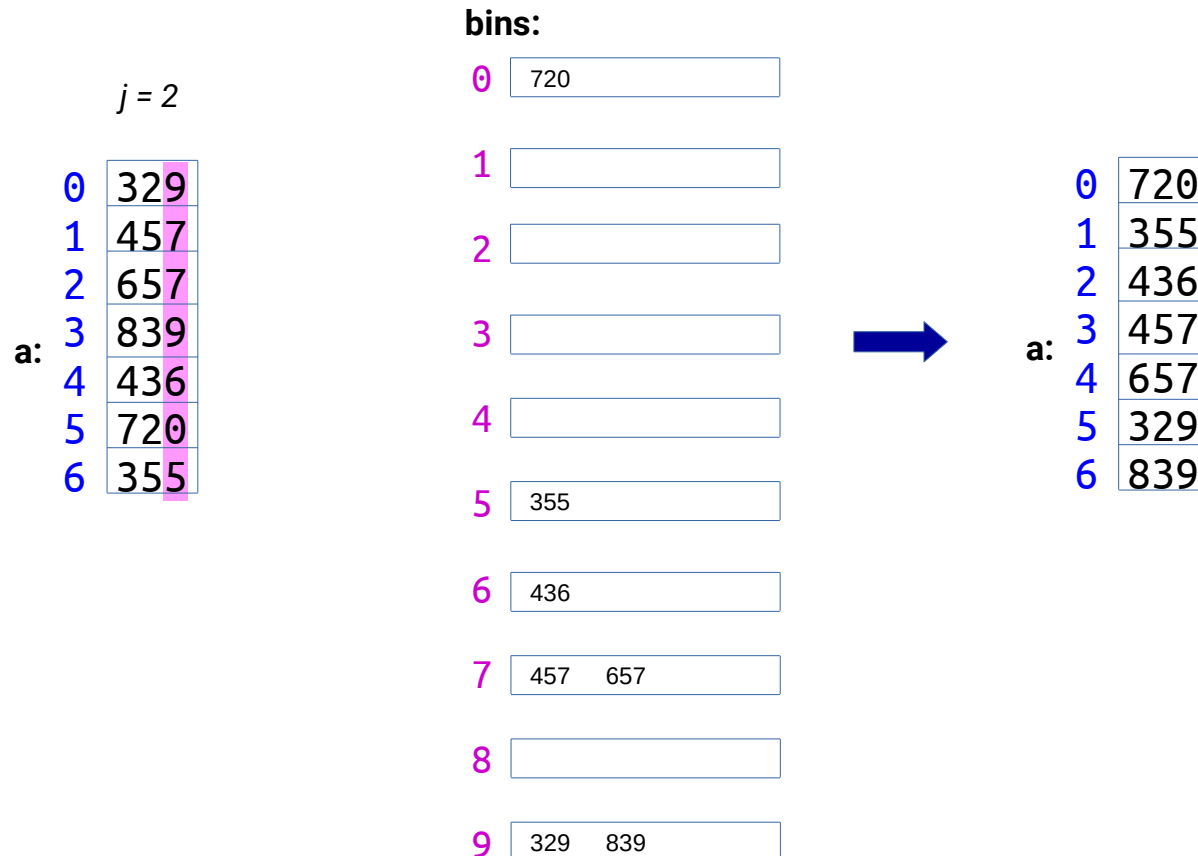
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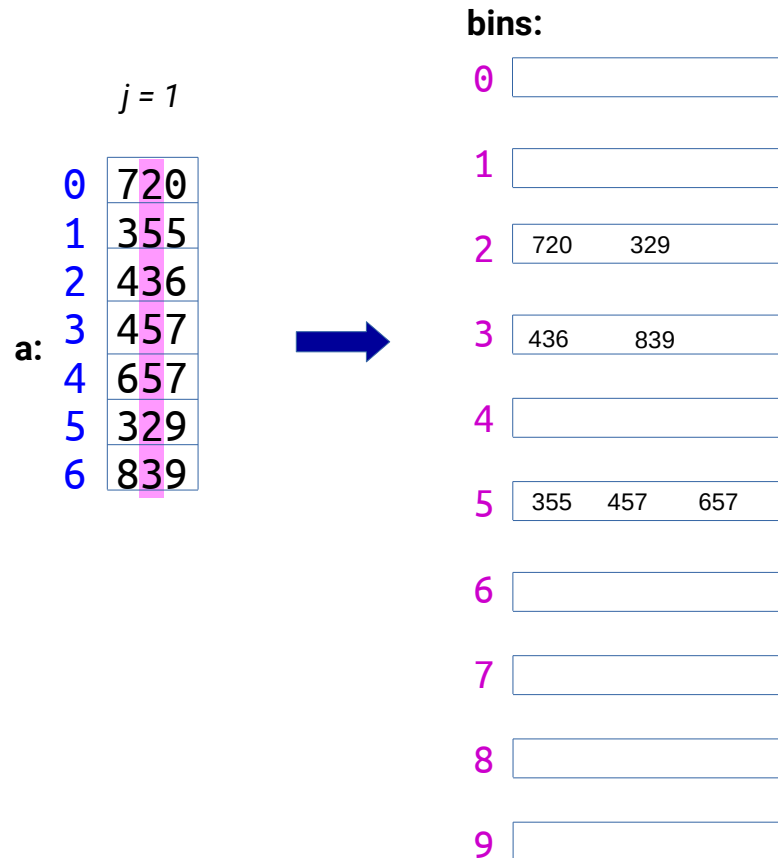
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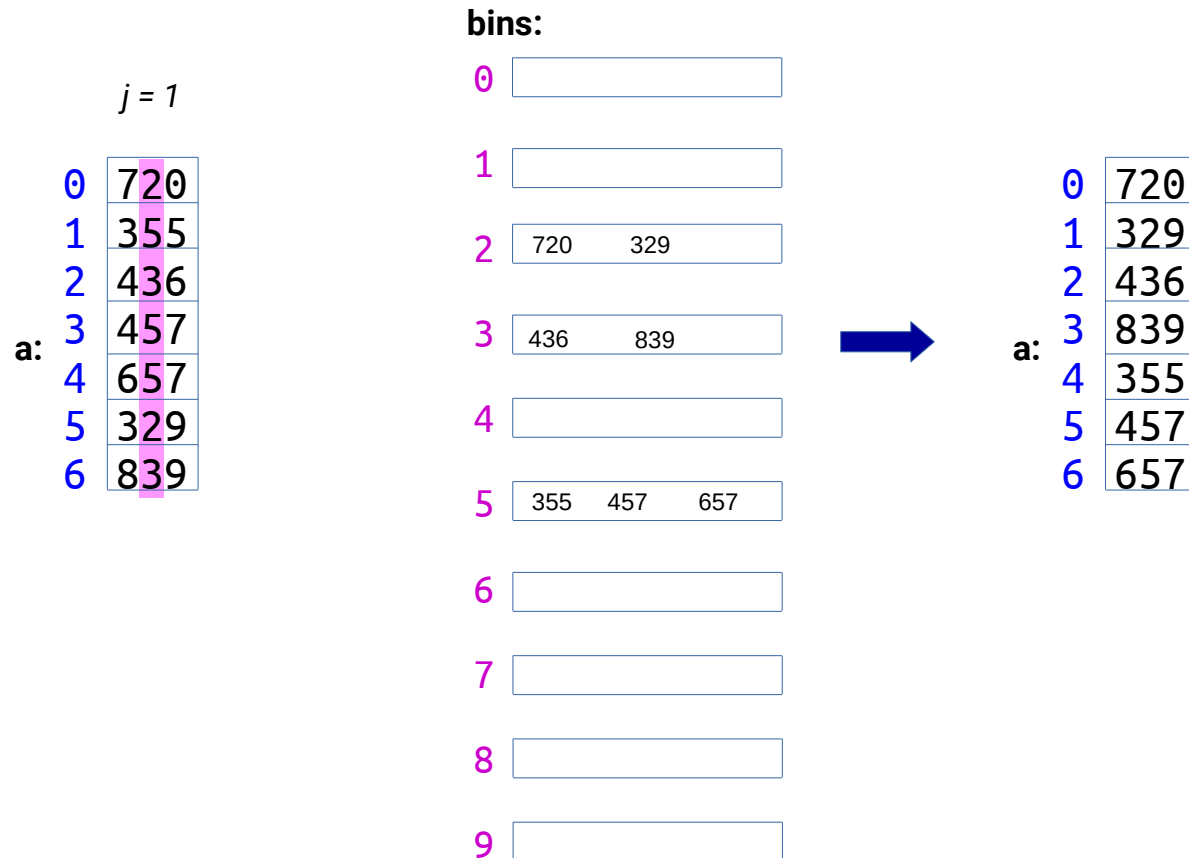
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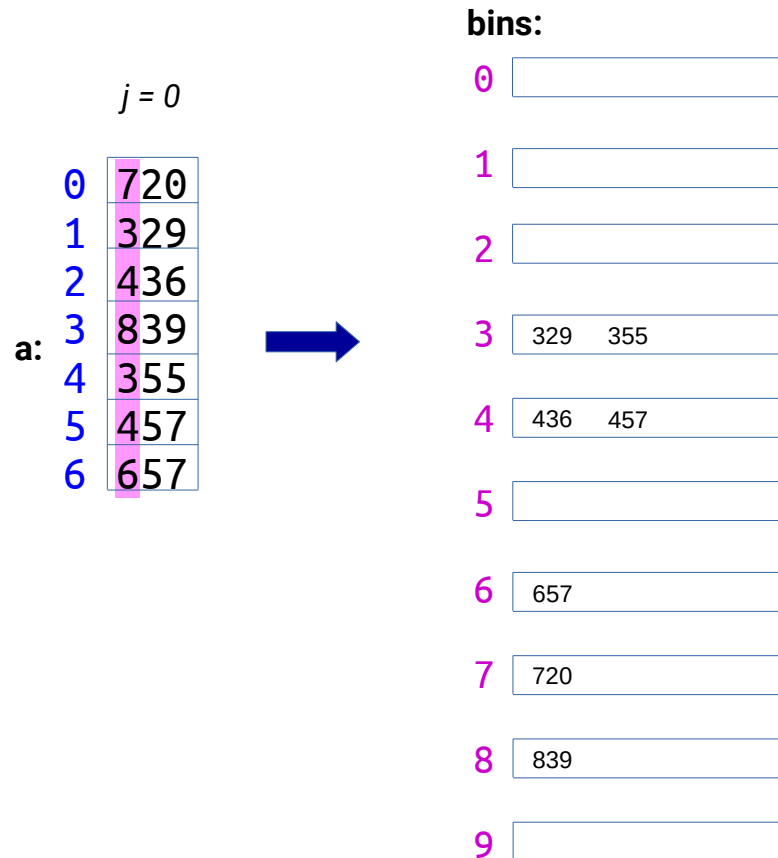
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$O(n*d)$ for n numbers of d digits

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