

# Radix Sort

\* works for non negative numbers.

\* stable sorting is required.

↳ keeps the order of elements with same value before & after sorting

ex: 2L, 3L, 3K  $\xrightarrow[\text{rightmost digit}]{\text{sort considering}}$

3K, 2L, 3L  
↓ sort considering leftmost digit  
3K, 3L, 2L  
↳ 3L still comes after 3K

182  
264  
325  
598  
122  
460  
325  
124  
461  
245

Sort according to last digit

use counting sort (with digits as buckets)

or other stable sorting algorithm (ex: Bubble sort)

continue for remaining digits

122  
124  
325  
325  
245  
460  
461  
264  
182  
598

\* To get the digit:  $(\frac{n}{e}) \% 10 \rightarrow$  ex:  $n=325$   
 $e=1 \rightarrow 5$   
 $e=10 \rightarrow 2$   
 $e=100 \rightarrow 3$

Repeat while  $\text{max-value} // e > 0$   
↓ floor division  
x10 in each iteration