

Counting Sort

* Fast when range of possible values (k) is smaller than the number of values (n).

(if $k > n$, the array created for counting will be larger than the original)

* Works for non-negative integer values.

$[2, 3, 0, 2, 3, 2] \rightarrow$

$\overline{0} \quad \overline{1} \quad \overline{2} \quad \overline{3}$

counting array

length of maximum
value in original array

$\frac{1}{0} \quad \frac{0}{1} \quad \frac{3}{2} \quad \frac{2}{3} \leftarrow$

count how many times
number exist

create
sorted array

$[0, 2, 2, 2, 3, 3]$
1 0 3 2