Sorting

$$\boxed{4\,|\,7\,|\,6\,|\,2\,|\,3\,|\,1\,|\,5} \longrightarrow \boxed{1\,|\,2\,|\,3\,|\,4\,|\,5\,|\,6\,|\,7}$$

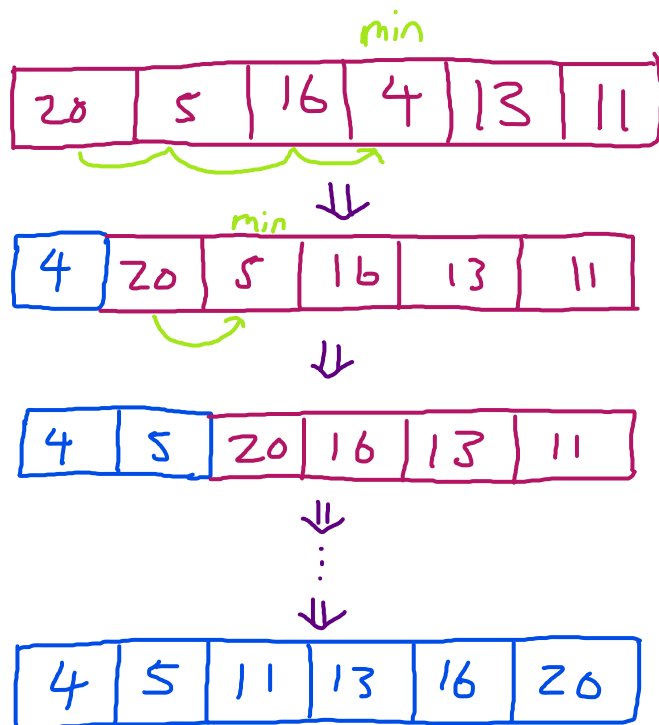## Selection Sort

① Find smallest item by traversing array

② Swap this item to front of "unfixed" items and "fix" it

③ Repeat 1 and 2 for unfixed items until all items are "fixed"

Example:

Selection Sort Runtime? $\Theta(N^2)$

We traverse the array to find the minimum. This will take $\Theta(N)$. We repeat this N times. Therefore, our runtime is $\Theta(N^2)$.

Insertion Sort

Insertion Sort