Sorting

Goal: Rearrange the elements of an array / vector so that

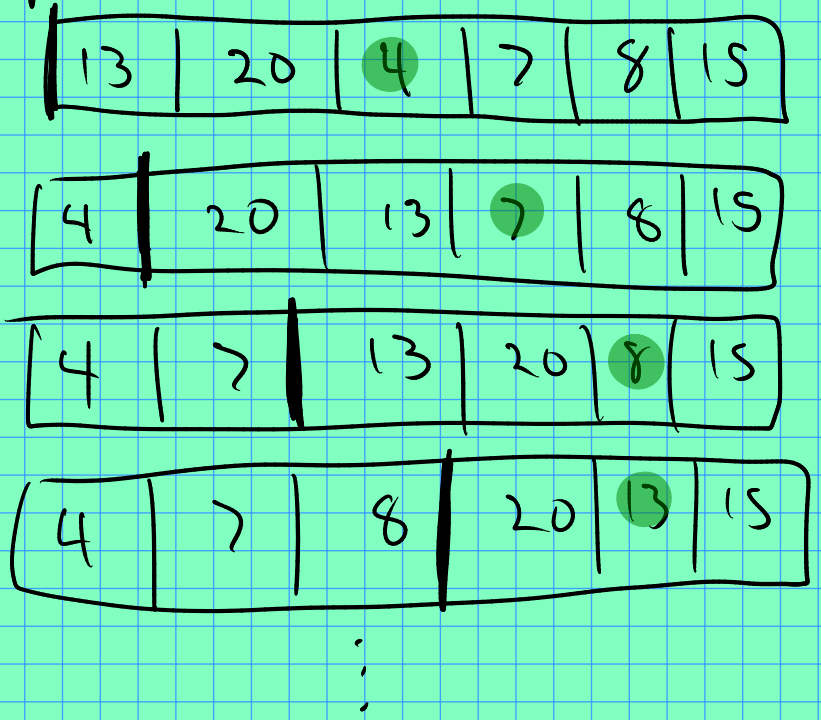
$i < j \Rightarrow A[i] \leq A[j]$

E.g.:

A: | 2 | 1 | 3 | $\longrightarrow$ A = | 1 | 2 | 3 |

One simple idea: find smallest element & place it first. Then find next smallest & place it second, etc...

Example:



⋮

4 7 8 13 15 20 ☺

Now some details in C++...

```
// find index of smallest elt. in A[s,...,size-1]
int indexOfSmallest(const vector<int>& A, int s){
```

```
    int iMin = s; // location of smallest so far.
    for (int i = s+1; i<A.size(); i++) {
        // check if A[i] < A[iMin]...
        if (A[i] < A[iMin])
            iMin = i;
    }
    return iMin;
}
```