Selection Sort Algorithm

Selection sort is a sorting algorithm that selects the smallest element from an unsorted list in each iteration and places that element at the beginning of the unsorted list.

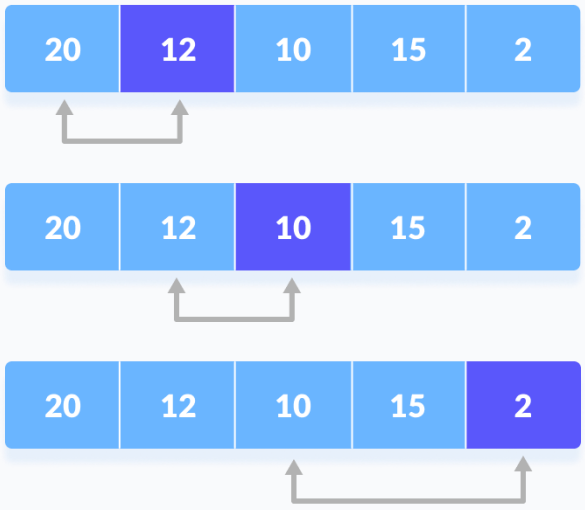
Working of Selection Sort

1. Set the first element as `minimum`.

Select first element as minimum

2. Compare `minimum` with the second element. If the second element is smaller than `minimum`, assign the second element as `minimum`.

   Compare `minimum` with the third element. Again, if the third element is smaller, then assign `minimum` to the third element otherwise do nothing. The process goes on until the last element.

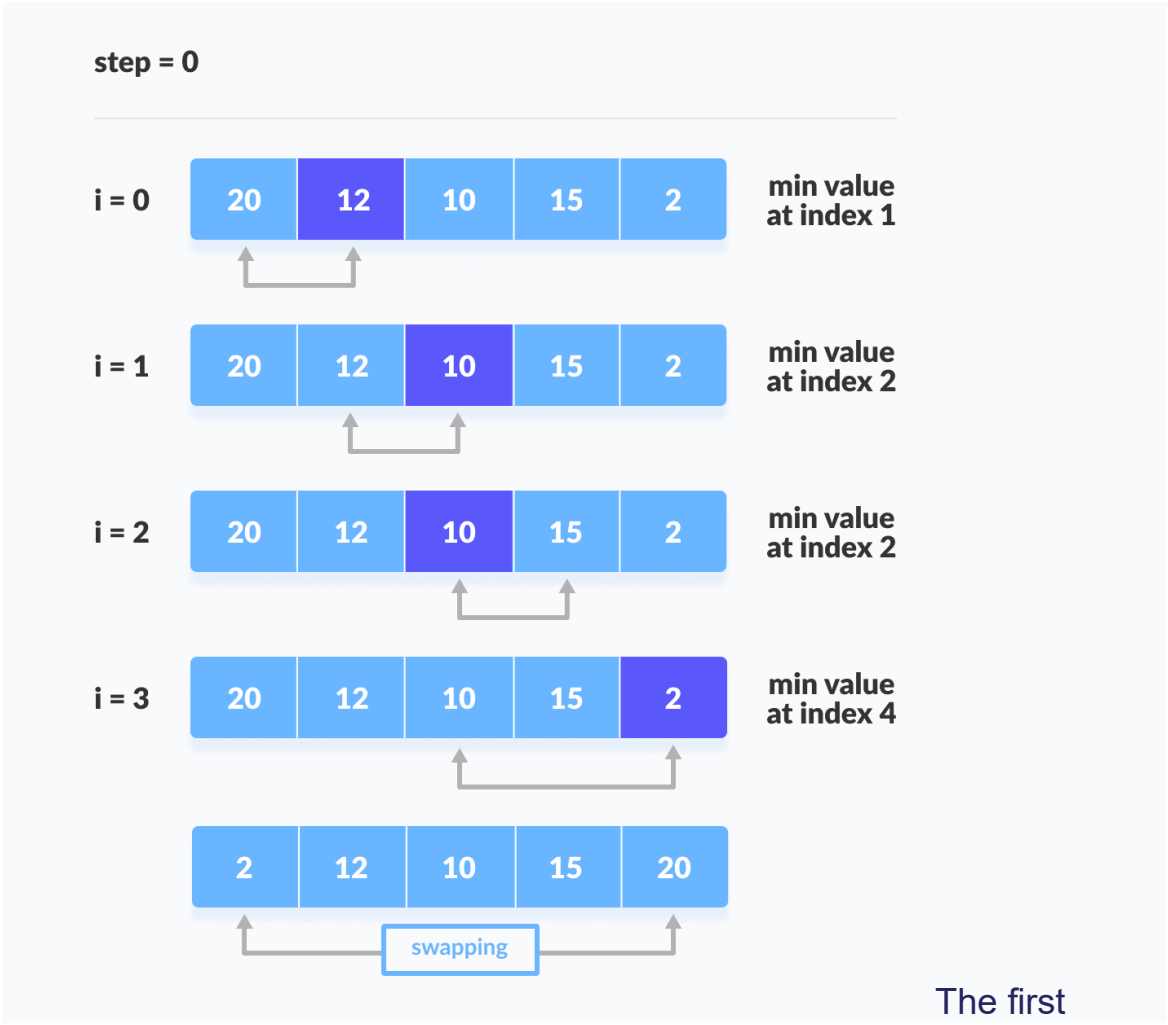


Compare minimum with the remaining elements

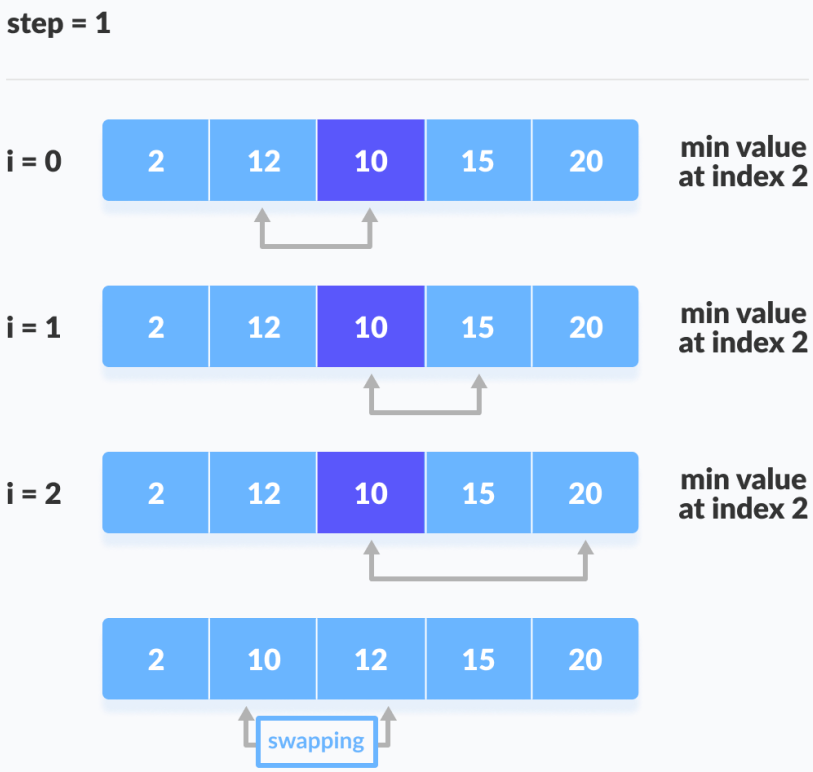
3. After each iteration, `minimum` is placed in the front of the unsorted list.

Swap the first with minimum

4. For each iteration, indexing starts from the first unsorted element. Step 1 to 3 are repeated until all the elements are placed at their correct positions.

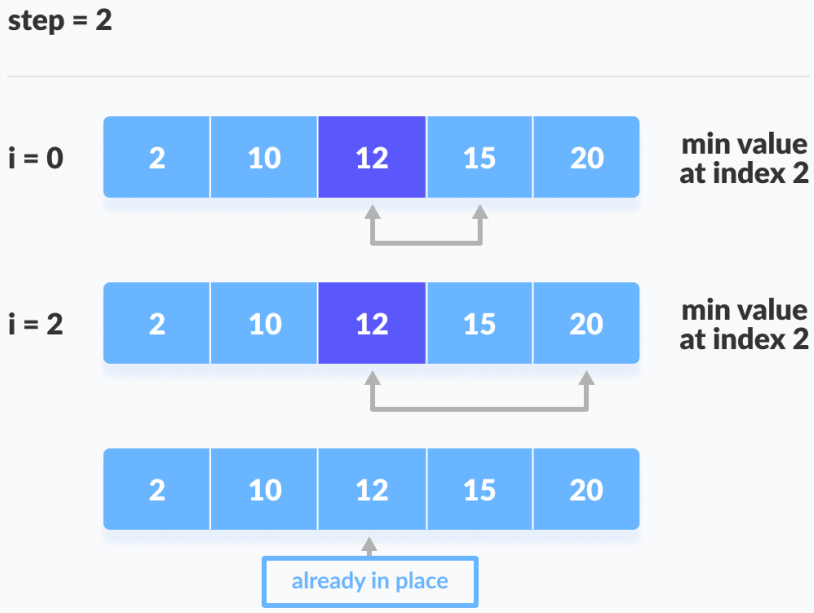

step = 0
i = 0
20
12
10
15
2
min value
at index 1
i = 1
20
12
10
15
2
min value
at index 2
i = 2
20
12
10
15
2
min value
at index 2
i = 3
20
12
10
15
2
min value
at index 4
2
12
10
15
20
swapping

The first

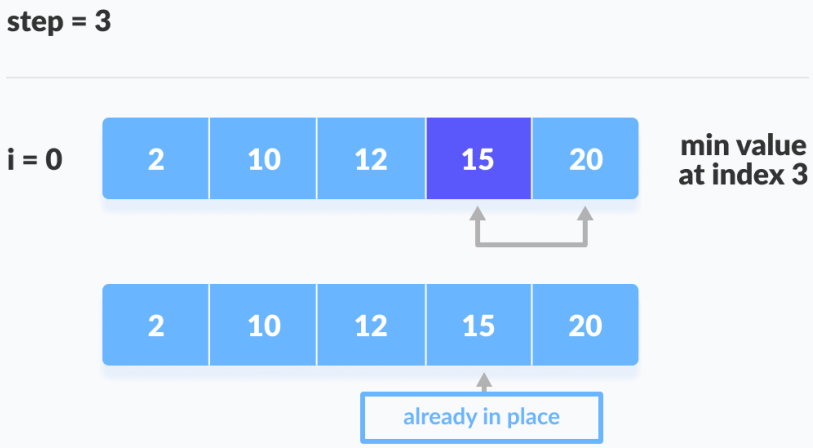


iteration The

second iteration



The third



iteration The

fourth iteration

Selection Sort Algorithm

```
selectionSort(array, size)
  repeat (size - 1) times
  set the first unsorted element as the minimum
  for each of the unsorted elements
    if element < currentMinimum
      set element as new minimum
  swap minimum with first unsorted position
end selectionSort
```
