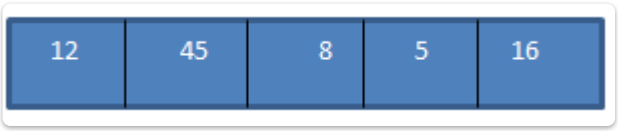
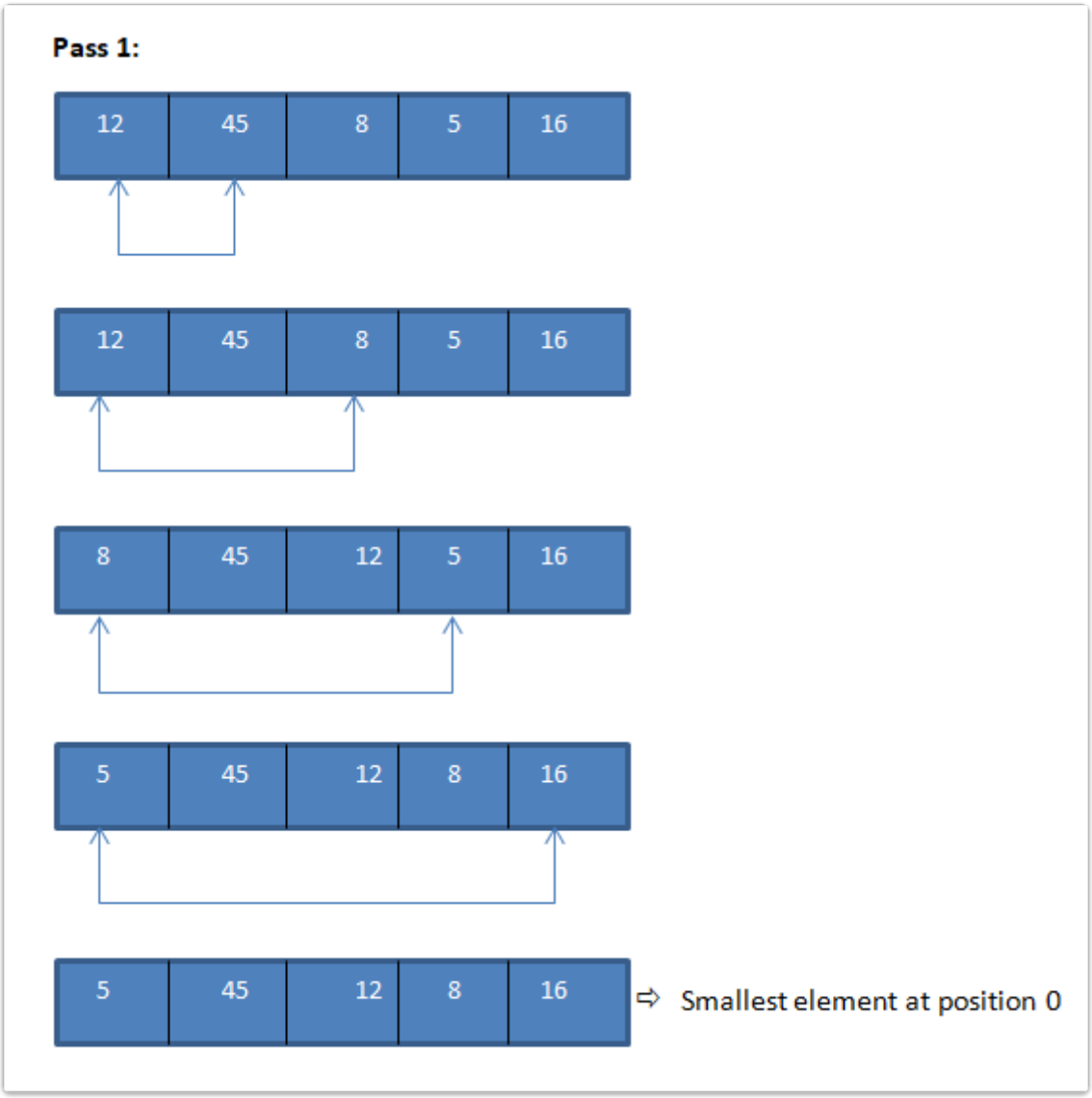
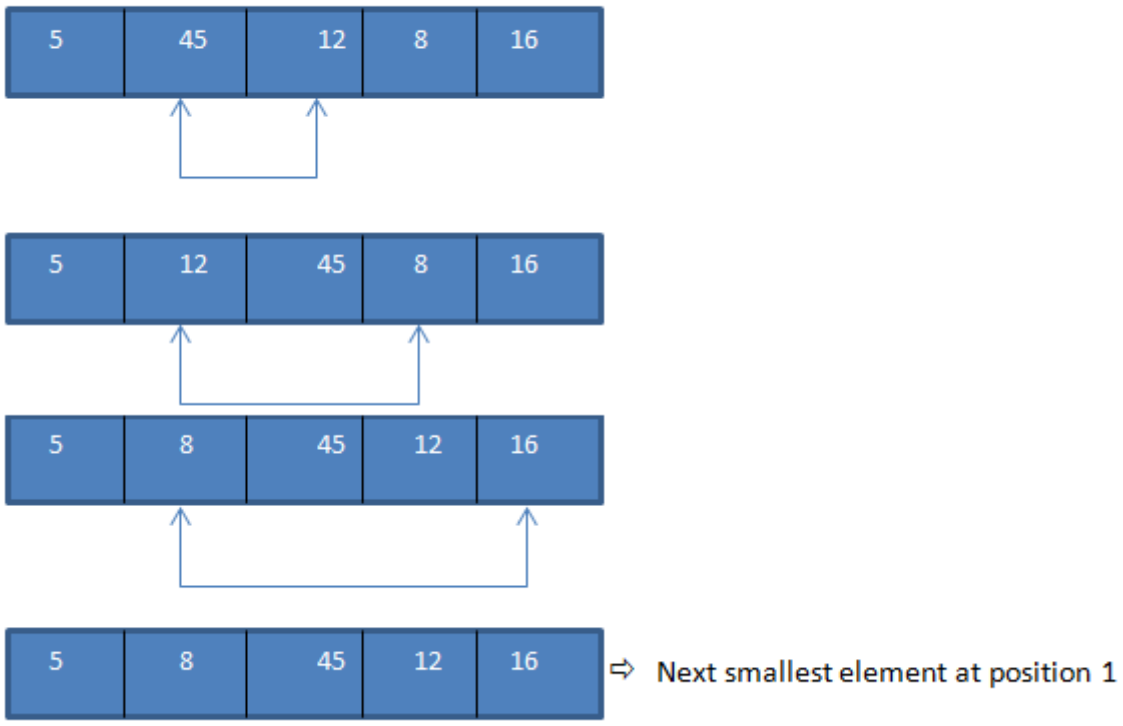
Selection sort

we find the smallest element in the list and *put it in its proper place*. At each pass, the next smallest element is selected and placed in its proper position.

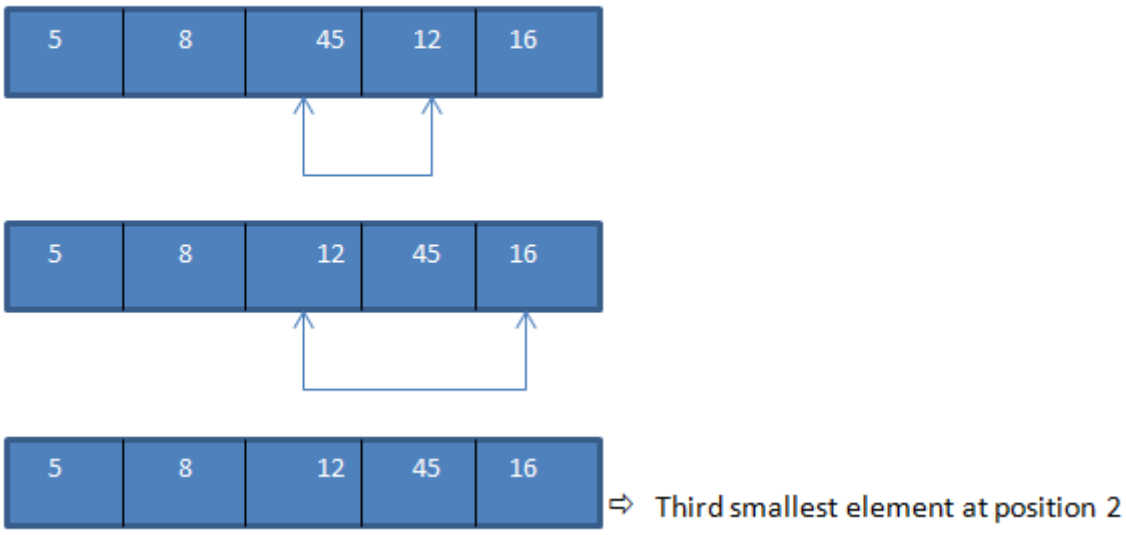




Pass 2:



Pass 3:




```
for (i = 0; i < n-1; i++) {
     min_idx = i;
     for (j = i+1; j < n; j++) {
             if (arr[j] < arr[min_idx])
                 min_idx = j;
     }
     if (min_idx≠i)
         swap(&arr[min_idx], &arr[i]);
 }
```

Time Complexity: $O(N^2)$
Auxiliary Space: $O(1)$