



■ Activity:

- Make a program that populates two vectors with the values 1 – 5 by using the “for” loop, multiplies them and the result is put in a third vector. Print out the result.

56



Basic ordering of arrays using: selection sort, bubble sort

57



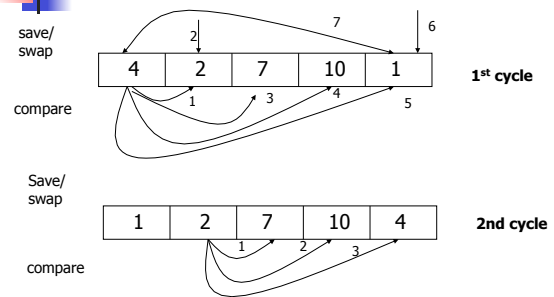
Selection Direct

- A node is compared with all the nodes ahead him, and swapped if lesser
- The same operation is done with the next node

57



Selection Direct



57

Selection Direct

```
int a[] = {4, 2, 7, 10, 1};
int k; // tiene el indice de la localidad con el menor num
int menor; // tiene el menor num
int i; // recorre el arreglo
int j; // recorre el arreglo a partir de i+1
int n = a.length; // size of the array
for(i=0; i < n-1; i++) { // menor: a[i]
    k = i;
    menor = a[i];
    for(j=i+1; j<n; j++) //comparamos menor con a[j]
        if(a[j] < menor){
            k = j;
            menor = a[k];
        }
    a[k] = a[i]; // donde esta el menor ponemos a[i]
    a[i] = menor; // ponemos en a[i] el menor
}
```

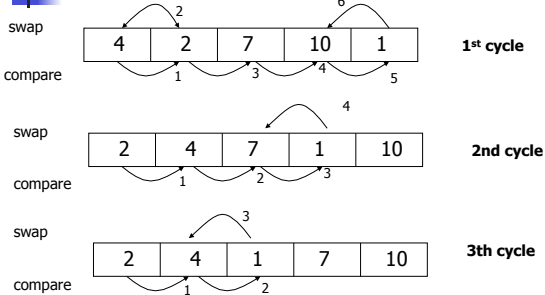
s7

Bubble

- Every node is compared with its neighbour and swapped if lesser
- The number of pairs compared are reduced in 1
 - Reduction from the right to left

s8

Bubble



s8

Bubble

```
int a[] = {4, 2, 7, 10, 1};
int i;
int j;
int tmp;
int n = a.length;

for (i=0; i<n-1; i++) {
    for (j=0; j<n-1-i; j++)
        if (a[j+1] < a[j]) { /* compare the two neighbours */
            tmp = a[j]; /* swap a[j] and a[j+1] */
            a[j] = a[j+1];
            a[j+1] = tmp;
        }
}
```

s8



■ Activity:

- Make a program shows a menu with the following options: sort (ascending), sort (descending), and exit. The user introduce the option and the values of the array. Each sort operation is implemented by a different sort algorithm. The program only exits when the user selects the exit option.

s8



■ Activity:

- Make a program which takes an array of 10 integers as input (the user introduces the values of the array) and prints out 2 arrays. Odd numbers are placed in a second array and even numbers are placed in a third array. Both arrays are sorted in descendent order. Use the selection direct algorithm.

s8