Exercise: Smallest element

Write a program that

a) reads 10 integers from keyboard and stores them into an array called `x`
b) prints out all 10 elements in one line (in another loop)
c) makes yet another loop to find the index of the smallest element
d) prints out both the index of the smallest element and its value

Example Output (b+c+d):

```
5  2  3  4  1  4  2  4  6  4
The smallest element is at index 4 with the value 1
```

Exercise: Element swop

Modify the previous exercise such that you reuse a), b) and c) and change d) to swop the smallest element with the element on index 0 and print out the list again.

Example output (colouring is not part of output)

```
5  2  3  4  1  4  2  4  6  4
1  2  3  4  5  4  2  4  6  4
```

Exercise: Generalized element swop

Modify the previous exercise such that you declare and initialise an integer variable `start` to 0, change c) the loop finding the index of smallest element to start from the value of the variable `start` instead of 0 and d) to swop the smallest element with the element on index `start` and print out the list again. The output should be exactly as in the previous exercise.

Exercise: Selection Sort

Modify the previous exercise such that instead of declaring an integer variable `start` you create a loop of the form

```
for (int start = 0; start < x.length - 1; start++)
{
    //insert code for swapping the smallest element with the element on index  start
}
```

End with a print out of the list again and observe that the elements now are sorted in ascending order. This algorithm is known as “Selection Sort”

Example output

```
5  2  3  4  1  4  2  4  6  4
1  2  2  3  4  4  4  4  5  6
```