# Java Basics – Algorithms

The goal of this lab is to practice **creation of algorithms**. Your task is to write your interpretation of the algorithm (without rewriting the entire code).

## Selection Sort

Write a sorting algorithm of type **Selection sort**. It should iterate through a list of integers and sort them. The way selection sort algorithm works is:

* Find the smallest number in the list.
* At the end of the iteration swap the positions of the smallest number with the first element of the list.
* Then start iterating from the next element.

More information about the selection sorting algorithm could be found [here](http://visualgo.net/sorting.html).

After you get the expected output, uncomment the comments in the pseudo code to see how long does it take for your algorithm to execute. Test it with a lot of elements to see the difference.

### Output

You should print out the sorted list in the format described below.

### Constraints

* The input list will hold integers in the range [−2147483648 … 2147483647].
* The size of the list could be [10…50000].
* There could be elements in the list that hold the same values.
* **You are forbidden to use .sort() methods**

### Tests

|  |  |
| --- | --- |
| **Input** | **Expected Output** |
| [13, 93, 37, 74, 61, 65, 5, 55, 17, 96, 52, 70, 17, 7, 89, 65, 16, 38, 42, 15, 86, 21, 93, 10, 31, 28, 36, 14, 65, 7, 68, 86, 97, 34, 27, 32, 86, 44, 51, 75, 29, 64, 0, 36, 33, 54, 20, 40, 60, 56, 51, 51, 25, 77, 75, 46, 47, 57, 18, 12, 27, 28, 29, 21, 22, 37, 74, 78, 34, 15, 71, 75, 20, 19, 76, 48, 98, 36, 76, 49, 83, 21, 44, 12, 85, 68, 24, 9, 80, 41, 66, 1, 54, 31, 55, 33, 88, 35, 32, 43] | [0, 1, 5, 7, 7, 9, 10, 12, 12, 13, 14, 15, 15, 16, 17, 17, 18, 19, 20, 20, 21, 21, 21, 22, 24, 25, 27, 27, 28, 28, 29, 29, 31, 31, 32, 32, 33, 33, 34, 34, 35, 36, 36, 36, 37, 37, 38, 40, 41, 42, 43, 44, 44, 46, 47, 48, 49, 51, 51, 51, 52, 54, 54, 55, 55, 56, 57, 60, 61, 64, 65, 65, 65, 66, 68, 68, 70, 71, 74, 74, 75, 75, 75, 76, 76, 77, 78, 80, 83, 85, 86, 86, 86, 88, 89, 93, 93, 96, 97, 98] |