Algorithm & complexity

Lab: sort stability 1

# Checking the stability of algorithms (implementation without changes)

Check the stability of the algorithms (and their implementation from the SortStability1 task on GitHub): **buble sort**, **insertion sort**, **selection sort**.

Modify the test data in the SortStabilityApp application so that after sorting it it is possible to determine whether the given sorting algorithm is stable.

**Enter the test data in the field below (copy from the source code):**

|  |
| --- |
| items.add(new Item(10, 0)); items.add(new Item(5, 1)); items.add(new Item(7, 2)); items.add(new Item(7, 3)); items.add(new Item(3, 4)); items.add(new Item(1, 5)); |

Complete the table below with the test results for the unchanged implementation of the algorithms.

|  |  |
| --- | --- |
| **Algorith** | **Stable (Yes/No)** |
| Buble sort | YES |
| Insertion sort | NO |
| Selection sort | NO |

# Modification of the implementation of algorithms

Modify the implementation of unstable algorithms (only those for which it is possible) to make them stable. Make changes to the SimpleSort code repository on GitHub (this will be assessed).

# Checking the stability of algorithms (implementation after changes)

Check the stability of the sorting algorithms after the changes made and fill in the table below.

|  |  |
| --- | --- |
| **Algorith** | **Stable (Yes/No)** |
| Buble sort | NO change,STABLE |
| Insertion sort | UNSTABLE CHANGED TO STABLE |
| Selection sort | CAN NOT BE CURED.NOT STABLE |

# Description of the introduced changes

Describe the changes made in the source code:

* Changing the implementation of which algorithm made it stable?
* What was this change about?
* What logical operation was changed (eg select an item, replace items …)?

|  |
| --- |
| I have made change on logical operator which is greater than(>) i replace with greater and equal (>=) |