 # Submission 1
This submission is the completion of 3 given assignments: 3a, 3b and 3c. Where we implement Lists, Sorting, Exception handling, Java Collections and tied together by the UI built on JavaFX GUI Toolkit.

Implements:
ArrayList
An array implementation of the interface 'List'. This is based on Java arrays, which we dynamically adapted in size when needed. We also implemented various functions which adds an element at a specific index, adds an element at the end of the list, returns the element at a specific index, returns the index of a specific element, setting the element at a specific index, as well as two remove functions, that remove an element at a specific index/ at the end of the list.

BubbleSort
We implemented the BubbleSort algorithm for our sorting of arrays. Our sort method, within the BubbleSort class, takes our array List and our generic comparator. The generic comparator determines how to sort objects within the array.

GenericComparator
Comparator that uses the compareTo method implemented in the Person class.

SortedArrayList
SortedArrayList implements the SortedList interface and extends ArrayList. We override some methods of ArrayList to make sure the contract of the sorted list is upheld.
Those methods are: sort and add(pos, person), which are illegal operations since the list has to be always sorted.

We override the following methods from the superclass ArrayList: add(person), since in order to use this method we have to implement a findIndexToInsert, to find the right index at which a new person is added.

uses
Person
We implemented/overridden a *compareTo, equals* and a *hashCode*

function to accommodate our Person class, which extends the Comparable class.

PersonsGUI
We implemented a GUI with JavaFX, which uses the logic from our implementations on the Person class.
Here we also made an updateStatistics function, which shows the most common name and average weight of the person list.

Ekstra
Exception field in PersonsGUI
We added a window where exceptions are shown to the user, instead of in the terminal. We were inspired by the solution to assignment 2.