# LABORATORY 9

## REQUIREMENT

Create a Python module that contains an iterable data structure, a sort method and a filter method, together with comprehensive PyUnit unit tests. The module must be reusable in other projects. Update your Lab5-8 program to use the data structure and both functions from this module.

What you will need to do:

- Implement an iterable data structure. Study the *__setItem__*, *__delItem__*, *__next__* and *__iter__* Python methods.
- Implement a sorting algorithm that is not studied during the lecture or seminar (no bubble sort, cocktail sort, merge sort, insert sort, quicksort). You can use one of shell sort, comb sort, bingo sort, gnome sort, or other sorting method. Determine the time complexity of the selected algorithm and prove that you understand it. The sort function will accept two parameters: the list to be sorted as well as a comparison function used to determine the order between two elements.
- Implement a filter function that can be used to filter the elements from a list. The function will use 2 parameters: the list to be filtered, and an acceptance function that decided whether a given value passes the filter.

Observations:

1. Use your data structure in the program's repository classes.
2. The sort / filter functions will replace the current implementation within the repository and controller layers.