**ECE 374. Lab work 9**

**Instructions**

1. Solve the problem(s). Design the requested algorithm(s) and write the demo program(s) using **Python**
2. Prepare the lab report

* Mark the top of each sheet with your name, the course number, the problem number, your recitation section, the date, and the names of any students with whom you collaborated.
* You will be called to “give an algorithm” to solve a specific problem. Your write-up should take the form of a short essay. A topic paragraph should summarize the problem you are solving and what your results are.

The body of the essay should provide the following:

* A brief description of the algorithm in pseudo-code. ***Don’t forget to comment on essential steps!***
* Example of your program’s input and output (a screenshot of console output)
* Unless you use a greedy algorithm, a proof (or indication) of the correctness of the algorithm. (Necessary if we tell you to provide evidence).
* To receive full credit, you must provide an analysis of the running time of the algorithm (if it was not done in the lecture)

Note: The full credit will be given only to correct solutions which are described clearly. Convoluted and obtuse descriptions will receive low marks.

1. Submit your **lab report** together with your **program’s file** (\*.py).

**Problem 1:** Write the program implementing a Self-Organizing List. Demonstrate, how the list changes after a) Multiple random selections b) Several sequential selections of specific keys (or use non-uniform random selections).