

MAT 2440

Prof. Ghezzi

Algorithm Assignment 2 (20 points)

It is due on **Monday, October 23, 2017** at the beginning of class. **No late homework will be accepted.**

Note: I am not considering incomplete and/or disorganized papers for credit.

- 1) **Finding the Maximum Element in a Finite Sequence.** List all the steps used by Algorithm 1 to find the maximum of the list 14, 5, 17, 17, 8, 27, 3. [List all values of i and max].
- 2) The **Linear Search Algorithm** and the **Binary Search Algorithm.** Homework # 14 page 202. [For linear search list all values of i and the location; for binary search list all values of i, j, m and the location].
- 3) The **Bubble Sort.** Homework # 36 page 203. [Show the lists obtained at each pass].
- 4) The **Insertion Sort.** Homework # 40 page 203. [Show the lists obtained at each step].
- 5) Homework # 16 page 202. [Write a pseudocode].
- 6) Extra-credit (3 points). Write a program (in any language you like) that gives the smallest number in a finite sequence of natural numbers. Make sure you try your program on a list of your choice. Print out your work.

Note: If you want to use MATLAB the code for finding the largest number in a finite sequence of natural numbers is posted on the OpenLab:

https://openlab.citytech.cuny.edu?get_group_doc=21052/1507824786-MATLABcodeformax.pdf