

MEEM 5990 Design Automation: Theory and Implementation ASSIGNMENT 2 - FALL 2004

Write, compile and document a C++ program to read and sort a list of coordinates, their ID's and temperatures at each coordinate. The information will be given in a file using the following format:

```
<x_coord>, <y_coord>, <z_coord>, <ID_string>, <temp>
```

E.g.,

```
1.0, 2.0, 0.0, "Node 1", 278.0
```

```
1.0, 2.0, 1.0, "Node 2", 274.0
```

```
1.0, 2.0, 3.0, "Node 3", 280.0
```

The sorted list must be printed out on the screen in a more readable format. E.g.,

```
Node 2: (1.0, 2.0, 1.0) Temp: 274.0 C
```

```
Node 1: (1.0, 2.0, 0.0) Temp: 278.0 C
```

Note that there are many established algorithms for sorting. These have names such as Quick-Sort, Bubble Sort, Insertion Sort. If you are not feeling creative, you can lookup how these work (but you can not use any code directly).

You must also determine the performance of your sort algorithm and give the order of it in "Big-Oh" notation, in your report.

The program and documentation must be developed individually. You may discuss how to do something with others, but you may not look at source code or reports from others, and they may not look at yours.

Write up a report with the same sections as in the first assignment. The source code must be fully documented, including the same header information specified in the first assignment.

The maximum length of the report is 3 pages, not including the source code in the appendix. **The report and source code will be evaluated for style, neatness, correctness and efficiency.**

Email the source code to me at bettig@mtu.edu. The report must be handed-in in class. The report and source code are due Sept. 16.