COSC 1410, Spring 2016
Assignment 10: File I/O

[1] **Objective:** This assignment will provide practice on the following concepts:

- Accessing a sequential ASCII file (no random access file in this assignment),
- File Processing (input and output).
- C++ Classes,

[2] **Description:** Your program should open an ASCII file prog10in.txt for input, sort the data and write the data to a file prog10out.txt. The two file names must be passed to the program. You should use the "employeeList" example discussed in class as a model for this assignment.

The data contained in the input file consists of final grade information of student. Each student record is stored in a line with blank(s) separating the fields. There are six fields in the record (an ID, Last Name, First Name, and 3 Grades). ID is an integer number and grades are double. See a sample file below.

Your program should

- Open the input file,
- Read all records into an StudentList class (with an array of size up to 100, and other variables).
- Sort the students in decrease order based on their grade
- Write the sorted records out to a file and to your monitor (the good old cout).
- Add a column for a letter grade where
  - 90 and above is an A
  - 80 and above is a B
  - 70 and above is a C
  - 60 and above is a D
  - Below that is an F

[3] **Input**: You will be reading from the data file *prog10in.txt* in this assignment. No interactive input. A sample file will be provided for you to test the program. Keep in mind this is just a sample file.

```
30125 Davy Jones 96.00 90.00 80.00
10033 Jaspal Subhlok 100.00 96.00 98.00
10011 Yuriy Fofanov 50.00 86.00 77.00
20045 Ding Wei 70.00 70.00 80.00
20048 Harris Cyril 75.00 75.00 75.00
10022 Huang Stephen 80.00 90.00 70.00
10089 Johnson Olin 92.00 93.00 94.00
10096 Datskova Olga 87.00 86.00 66.00
30030 Brown Nancy 66.00 76.00 86.00
20055 Dunn Stacey 22.00 46.00 74.00
20035 Jonney Carr 88.00 80.00 82.00
30035 Anthony Li 83.00 84.00 89.00
```

[4] **Output** You will be reading from the data file *prog10out.txt* in this assignment.

```
10033  Jaspal    Subhlok        100.00  96.00  98.00     98.00         A
10089  Johnson   Olin            92.00  93.00  94.00     93.00         A
30125  Davy      Jones           96.00  90.00  80.00     88.67         B
30035  Anthony   Li              83.00  84.00  89.00     85.33         B
20035  Jonney    Carr            88.00  80.00  82.00     83.33         B
10022  Huang     Stephen         80.00  90.00  70.00     80.00         B
10096  Datskova  Olga            87.00  86.00  66.00     79.67         B
30030  Brown     Nancy           66.00  76.00  86.00     76.00         C
20048  Harris    Cyril           75.00  75.00  75.00     75.00         C
```

```
20045  Ding      Wei             70.00  70.00  80.00     73.33         C
10011  Yuriy     Fofanov         50.00  86.00  77.00     71.00         C
20055  Dunn      Stacey          22.00  46.00  74.00     47.33         F
```

[5] **Output** You will be reading from the data file *prog10out.txt* in this assignment.

[6] Special requirements and help:

- You must use a class definition described above and its associated member functions.
- You must use program arguments (argv). This will be your first use of the argv.
- The demo program is about 110 lines.

[7] **Due date**: Monday, April 25, 2016.