CS 202 - Computer Science II

Project 1

Due date (FIXED): Wednesday, 2/1/2017, 11:59 pm

Objectives: The two main objectives of this project is to test your ability to: a) use C++ I/O (console and file), and b) design, implement and test a solution to a given problem. In addition, a light review of your knowledge of C-style strings and multi-dimensional arrays will be necessary. This project will also test your ability to create, compile and run a program in a Linux environment and establish your ability to upload your program and supporting documentation to WebCampus.

Description:
For this project you will write a program to **read-in** the **10 first names** from a **file** into a **two-dimensional character array**, **output** the names **to the terminal**, **sort** the list of names, and then **output the sorted** names both **to the terminal and to a file**. Although an example input file is provided, for grading purposes your project will be tested against a file that we will supply but will not be provided to you beforehand. Our test file will be in the same format as the example input file.

The following minimum functionality and structure is required:

- **Read in** the list of names from an **input file**.
- Print out the **unsorted** list of names to the terminal.
- **Sort** the list of names alphabetically.
- **Print** the list of **sorted** named to the **terminal.**
- **Write** the list of **sorted** names to an **output file.**
- Ask the user for the input and output file names.
- The list of names must be stored in a two-dimensional character array.
- Use character arrays (i.e., C-style) to hold your strings.
- Write multiple functions.
- Write your own string copy, string compare (or other) functions as needed.

The following are a list of restrictions:

- No string data types or the string library are allowed.
- No libraries except iostream and fstream are allowed.
- No global variables or constants except number of names and/or string size.
- Do not use pointers or dynamic memory.

Example Output:

```
Unsorted Names
==============
Milda
Dan
Dale
Letha
Kurt
Daniel
Kandy
Tammy
Malisa
Corey

Sorted Names
============
Corey
Dale
Dan
Daniel
Kandy
Kurt
Letha
Malisa
Milda
Tammy
```

The completed project should have the following properties:

- Written, compiled and tested using Linux.
- It must compile successfully using the g++ compiler on department machines.
  Instructions how to remotely connect to department machines are included in the Projects folder in WebCampus.
- The code must be commented and indented properly.
  Header comments are required on all files and recommended for the rest of the program.
  Descriptions of functions commented properly.
- A one page (minimum) typed sheet documenting your code. This should include the overall purpose of the program, your design, problems (if any), and any changes you would make given more time.

Turn in: Compressed .cpp file and project documentation.

Submission Instructions:

- You will submit your work via WebCampus
- Name your code file proj1.cpp
- If you have header file, name it proj1.h
- Compress your:
  1. Source code
  2. Documentation

  Do not include executable
- Name the compressed folder:
  PA#_Lastname_Firstname.zip
  Ex: PA1_Smith_John.zip

Late Submission:

A project submission is "late" if any of the submitted files are time-stamped after the due date and time. Projects will be accepted up to 24 hours late, with 20% penalty.