CSCD 240 Lab 9

Sorting an array of strings

**Rules:** Your code must use C Language. If your program shows a compilation error, you get a zero credit for this assignment. You have to use gcc compiler. If you turned in a corrupted file, not readable, you get a zero. If you get a segmentation fault error, you get a zero.

**Problem Description:**

I have provide a c file named **lab9\_student.c,** wherea main() function has been set up. Basically, the program asks the user to input **N** names (represented by strings) from the standard input, then sorts these names. The number **N** is supposed to be scanned in from stdin also. You are prompted to input **N** names, implemented in a for loop. These names in string format will be saved into the memories that can be accessed by using a pointer to pointers **names**, which can be considered as a dynamic 2D array. You can print the strings out to verify each string after you finish all the inputs. All these input functionalities have been implemented and provided in main().

**What to do?**

1, Read through the main() function, understand it and read the comments I made.

2, Implement the sort() function at the end of the source file, which will sort all the names that you have inputted from the stdin in an dictionary order. You choose your own sorting method.

3, Hint: you probably need strcpy() function to copy a string to another place, and need strcmp() function to compare two strings. Their help infomation are provided here:

<http://www.tutorialspoint.com/c_standard_library/c_function_strcmp.htm>

<http://www.tutorialspoint.com/c_standard_library/c_function_strcpy.htm>

4, Please do not change the function signatures.

5, Understand how free() works in this case.

6, Thinking in the main(), why the statement **\*(names + x) = (char \*)malloc( (strlen(temp) + 1) \* sizeof(char) )** has to allocate memory for (strlen(temp) + 1) characters**?** That is**,** cannot we allocate memory for (strlen(temp)) character?

**Submission:** Name your c file as lab9.c and wrap up your c file into a single zip file. Name your zip file as *last + firstinitial + lab9.zip*. For example, if your legal name is Will Smith, you should name your zip file as smithwlab9.zip.

**Please submit your single zip file on EWU Canvas by following CSCD240-01 Course 🡪Assignments🡪lab9🡪 Submit Assignment to upload your single zip file.**