Homework 3: Dynamically resizing an array of char pointers

Specification:

In this assignment, as you'll read a number of string inputs from keyboard, you'll keep on dynamically resizing an array of char pointers. Lastly, you'll sort all the string inputs. I'll talk about the **sortString** function in the class.

In the attached test file **StringArrangement_test.c**, 's' is a pointer to a char pointer, initially 's' is allocated storage for one char pointer.

```
char** s= malloc(sizeof(char*));
```

But 's' will be able to grow dynamically to an unlimited size as the user keeps on typing a number of strings from the keyboard until the EOF (Ctrl +D) is reached.

At first, you need to complete the following three steps inside the for loop:

```
for (count = 0; fgets(buff, sizeof(buff), stdin); count++){
```

- **Step 1: allocate sufficient storage for s[count] to store the content in buff plus one byte for '\0'; 4 pts**
- **Step 2: copy the contents of 'buff' to 's[count]' 2 pts**
- **Step 3: resize the array of pointers pointed to by 's' to increase its size for the next pointer; 5 pts**

}

As EOF is reached, you'll be able to know the number of strings read from 'count'.

Step 4: Next, you have to sort the string inputs You need to implement the sortString function. sortString takes as argument an array of pointers to char and the number of strings read, i.e., count.

4 pts

Step 5: Print the list of sorted names. You can write a function for this. 2 pts

Step 6: Free the allocated memory. 3 pts

After you implement all the steps, you'll see the following output for a number of names typed by the user:

```
syasmin@cscd-linux01:~/CSCD204/HW2$ ./StringArrangement
Here is the list of unsorted names:

Tom Hanks
Tom Cruise
Richard Gere
Daniel Craig
Harrison Ford

Count is 5

Here is the list of sorted names:

Daniel Craig
Harrison Ford
Richard Gere
Tom Cruise
Tom Hanks
syasmin@cscd-linux01:~/CSCD204/HW2$
```

Submission:

A zip file containing:

- Your C code named StringArrangementHW3.c
- Output capture named StringArrangementHW3out.pdf – containing at least 3 different runs.

Name your zip file with your last name first letter of your first name HW3.zip (ex: YasminSHW3.zip)

Submission deadline is: 11:59 pm, Thursday, November 18. No late submission will be considered.