Lab 5

Task 19

Write a program to read one line of characters and output t he number of the character *'a'* in this line. The line ends wit h ENTER key (i.e., '\n'). There is no limit to the number of c haracters in this line.

Requirements:

- The line is read character by character (i.e., use `%c` in `scanf` statement to read one character and looping t o repeat reading character until the end of the line)

For example, if the input is

ab#c da1ea

then the output will be 3.

Task 20

Read a string using “%s” in a *scanf* statement and count the number of character ‘*a*’ in that string. Assume that th e total number of characters in the string will not exceed 49 and the string has no spaces.

Requirements:

No string functions (e.g., *strlen*) are allowed.

For example, if the input is

ab#cda1ea

then the output will be 3.

Task 21

Write a program to read a sequence of positive integers an d sort them in ascending order and then in descending ord er. You can use -1 to indicate the end of input sequence. A ssume that the length of input sequence is less that 20.

For example, if the input is

12 20 2 5 -1

then the output is

ascending order: 2 5 12 20

descending order: 20 12 5 2

Task 22

Read a line of sentence which has only English letters and spaces. This sentence ends with the word “End” (case s entsitive). Please write a program to count the number of w ords in this sentence (not include “End”). Use `scanf` and `%s` to read a word. Assume that the length of each word in t he sentence is less that 20.

For example, if the input is

amf def and ok kind End

then the output is 5.

Add info about a program

At the top of each program, add the information (comments in GREEN). It is also required for EACH lab program in this semester.

```
// Programmer: ……
// Student ID: ……
// Date:….
// Task no: Week_#_Task_#
// Requirements: ……
#include<stdio.h>
int main()
{
   …….
}
```

Submission

- Compressed *.cpp into one file with file name in the format *Lab5_#######.zip* and submit it into iSpace.
- All .cpp files must be able to run under Visual 2010 C++ Express. The outputs will be checked against the outputs under Visual 2010 C++ Express