Introduction to Computers and Programming

Homework 7

2023/11/07

1. Deadline

You have one week to complete the homework. Hand in your homework via E3 before 2023/11/13 23:55. Please finish your homework as soon as possible. In addition, make sure that your code can be executed on Visual Studio Community 2019.

2. Problems

2.1 Two strings comparison

Write a function **int* compare(const char *S, const char *T, int N)** that
- (1) takes 2 strings '**S**' and '**T**' and their length '**N**' as arguments,
- (2) creates an integer array 'cmp' of size '**N**' with dynamic memory allocation,
- (3) compares strings letter by letter,
    - if **S**[i] == **T**[i], then cmp[i] = 1 else cmp[i] = 0
- (4) return 'cmp' to main()

(Note that type of 'cmp' is int *.)

Reminders: The function signature should be exactly the same as

int* compare(const char *S, const char *T, int N)

otherwise, you will get 0 score.

Input

There would be 3 lines in each case:
- First line: an integer **N** ($0 \leqq N$)
    - Represents the length of the following two string.
    - If N is 0, quit the process,
    - else, continue.
- Second line: a string **S**
- Third line: a string **T**

Then continue to get the input of the next case.

Output

Print out the result of the comparison, which is composed of 0 and 1. The length of the output should be **N**.

Example:

Input
```
6
looong
toooog
30
qqaabbccppqqaabbccppqqaabbccpp
qaabbccppqqaabbccppqqaabbccppq
3
abc
ABC
0
```

Output
```
011101
```

1010101010101010101010101010
000

3. Submission format
Your submission should follow the format below, or you might get some penalty for the wrong format.
- xxxxxxxxx_hw_w09.zip
  - xxxxxxxxx_hw_01.cpp

xxxxxxxxx is your student ID