EECS 2032

LAB 5
Winter 2020

In this lab, you will write programs using loops and strings

Problem 1

Write a program to read a string of non-white characters and an integer *n*, the program checks if there is a sub-string of length *n* of alphabetically consecutive characters in the string.

Specifications

- The input is a non-white string on a line by itself, followed by an integer in the next line (read from stdin).
- By consecutive, I mean something like "fghi" not "ihgf"
- Assume that the input is made all of small cap letters.
- The output should be either "YES" or "NO" followed by a new line. Any extra output will cost you marks.

Example

If the input is "abcjfghtypqlmn" and 5 ==> NO

If the input is "ampqzijklpasd" and 4 ==> YES

Submit the file as lab5a.c

Problem 2

Redo the last problem assuming the input is a combination of small and large cap letter, where "aB" is considered to be consecutive letters

Submit as lab5b.c

Problem 3

Redo the problem by reading only a string (small cap). Display an integer with the maximum length of consecutive characters in the string.

Specifications

- The integer should be written using the default int followed by na new line"%d\n"
- If there are no consecutive characters, the maximum length is 1

Example

asdfhjk ==> 2

asdf ==> 1

asdfghjklpoiu ==> 3

Submit as lab5c.c

Exercise Problems (Do not submit)

Extra Problem 1

Consider a QWERT keyboard as follows
Q W E R T Y U I O P
A S D F G H J K L
Z X C V B N M

Write a program that reads two characters and calculate the distance between these two characters on the board (for example if you want to check for misspelled words like "rqt" it is more probable to be "rat" than "rot" since the distance between `q` and `a` is 1, while the distance between `q` and `o` is 8.

Extra Problem 2

Redo Problem 3 by displaying the max length and the string associated with that length

Extra Problem 3

Redo problem 3 by considering consecutive to be either ascending or descending abc and cba to be consecutive