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Homework 3
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Aim of this homework is coding a program that processes strings via pointers. The program consists of 6 functions; main, user_menu, set_ccs, sub_string, remove_string and insert_string.

Development environment of this homework consists of Dev C++ IDE and TDM-GCC 5.1.0 Compiler on Windows 10 Home 64-Bit Operating System, and Geany IDE and GCC Compiler on Ubuntu 16.04 64-Bit Operating System.

In user_menu function, it prints selections on screen and expects an integer from user as selection. Then returns this value to main function.

In main function, selection is defined as 1 at the beginning of function, after that in a while loop, as long as selection is not equal to 0, it prints user menu and assigns returned value to “selection” variable. Then in a switch case it decides what to do. If selection is 1, it executes set_ccs function. If selection is 2, it asks for begin and end indexes, executes sub_string function, prints result of sub_string function and frees memory. If selection is 3, it asks for begin and end indexes, executes remove_string, prints result of remove_string and frees memory. If selection is 4, it asks for begin index for inserting string, executes insert_string function and prints result of insert_string function. If selection is 0, it breaks loop and exits program. If selection is anything other than 1, 2, 3, 4 and 0, it prints “You Entered an Invalid Function” and ask for selection again. At the end of main function, it prints “Goodbye!” and finishes executing program.

In set_ccs function, it allocates maximum memory for temporary string. If it cannot allocate memory, it returns value -1. If ccs is not empty, it frees memory for new string. After that it asks for CCS and assigns it to temporary string. After that it makes last element of temporary string null character and reallocates memory. Then it assigns contents of temporary string to CCS and returns length of temporary string.

In sub_string function, it finds length of substring via begin and end indexes. Then it allocates memory for sub string. After that it assigns wanted values to sub string and makes last character null character. Then it returns sub string.

In remove_string function, it allocates memory for removed and temporary strings and assigns contents of CCS to temporary string. After that, it assigns wanted elements to removed string then removes element from CCS. Then, it reassigns values to CCS without removed values. After that it returns removed string.

In `insert_string` function, it allocates memory for temporary string, gets new string for insertion from user and reallocates memory for temporary string. After that it removes contents of CCS to insert string, after that it assigns values of temporary string to CCS. Then it assigns contents of temporary string to inserted string and return length of temporary string.

The hardest thing in this homework is figuring out how to get CCS from user. After that removing contents of CCS was hard and I couldn't do that. Therefore `remove_string` doesn't work properly and `replace_string` is not included in .c file.