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//assignment 6 programming
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#include <iostream>
#include <string>

using namespace std;
string user_text = " ";
string find_text = " ";
string replaced = " ";
char print_menu(char);
int GetNumOfNonWSCharacters(string);
int GetNumOfWords(string);
int FindText(string, string);
string ReplaceExclamation(string);
string ShortenSpace(string);
int main()
{

	char choice = ' ';

	cout << "Enter a sample text: ";
	getline(cin, user_text);

	choice = print_menu(choice);
	while (!(choice == 'q'))
	{
		switch (choice)
		{
		case 'c': //number of non-whitespace characters
			int not_space;
			not_space = GetNumOfNonWSCharacters(user_text);
			cout << "Number of non white space charactesr: " << not_space <<
endl;
			choice = print_menu(choice);
			break;
		case 'w': //number of words
			int words;
			words = GetNumOfWords(user_text);
			cout << "Number of words: " << words << endl;
			choice = print_menu(choice);
			break;
		case 'f': //find text
			int occurences;
			cout << "Enter a word or phrase to be found: ";
			cin.ignore();
			getline(cin, find_text);
			occurences = FindText(find_text, user_text);
			cout << find_text << " instances: " << occurences << endl;
			choice = print_menu(choice);
			break;
		case 'r': //replace all !'s
			replaced = ReplaceExclamation(user_text);
			cout << replaced << endl;
			choice = print_menu(choice);

			break;
		case 's': //shorten spaces
			replaced = ShortenSpace(user_text);
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                        cout << replaced << endl;
                        choice == print_menu(choice);

                        break;
                case 'q': //quit
                        exit(0);
                        break;
                default:
                        cout << "Invalid choice please try again";
                        choice = print_menu(choice);
                }
        }
        system("pause");
        return 0;
}
char print_menu(char choice)
{
        cout << "MENU" << endl;
        cout << "     c - Number of non - whitespace characters" << endl;
        cout << "     w - Number of words" << endl;
        cout << "     f - Find text" << endl;
        cout << "     r - Replace all !'s" << endl;
        cout << "     s - Shorten spaces" << endl;
        cout << "     q - Quit" << endl;
        cout << "     Choose an option ";

        cin >> choice;
        return choice;
}
int GetNumOfNonWSCharacters(string text)
{
        int spaces = 0;
        int not_spaces = text.length();
        for (int i = 0; i < text.length(); i++)
        {
                if (isspace(text.at(i)) != false)
                {
                        spaces += 1;
                }
        }
        not_spaces = not_spaces - spaces;
        return not_spaces;
}
int GetNumOfWords(string text)
{
        int words = 0;
        for (int i = 0; i < text.length(); i++)
        {
                if (text.at(i) == ' ')
                {
                        words++;
                }
        }
        return words + 1;
}
int FindText(string find, string text)
{
                int count = 0;
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		string::size_type start = 0;
		while ((start = text.find(find, start)) != string::npos) {
			++count;
			start += find.length();
		}
		return count;

}
string ReplaceExclamation(string text)
{
	for (int i = 0; i < text.length(); i++)
	{
		if (text.at(i) == '!')
		{
			text.at(i) = '.';
		}
	}
	return text;
}
string ShortenSpace(string text)
{
	for (int i = 0; i < text.length(); i++)
	{
		if (text.at(i) == ' ' && text.at(i + 1) == ' ')
		{
			text.erase(text.begin() + i);
		}
	}
	return text;
}
```