

CS 12 - Assignment 4

Pointers

Due Thursday, May 7

In this assignment you will be using pointers. If you need to pass a parameter by reference, you must use pointers. You may not use the subscript (`[]`) operator throughout the program, you must use pointers. The subscript operator may only appear when you are performing a dynamic allocation. You may not use any string functions or global variables (global constants are fine however). Be sure to include all necessary information at the top of your program and use good commenting and style throughout.

Write a program that maintains and manipulates a string. You should have a dynamically allocated character array called *str* to hold the string and a integer variable *length* that holds the number of characters (not including the NULL) in the string *str*. You should also have a dynamically allocated character array called *str2*. Write the following functions.

Set Allow the user to enter a string. Store the string the user enters into *str* without wasting any space. Be sure to update *length*.

Palindrome Specify whether *str* contains a palindrome. A palindrome is a string that when reversed is the still the same string. For example, “bob” and “noon” are palindromes, “fred” is not. Your function should return a 1 if the string is a palindrome and return a 0 if it is not a palindrome.

Copy Make a copy of *str* and store it in *str2* without wasting space.

Print Print *str* and specify the number of characters in the string. Also print *str2*.

Search This function should search for a user specified character in the string *str*. It should specify the position of the first occurrence if found.

Write a main program that allows the user to continue choosing from the above options as often as they would like.