

Lab assignment 6

Note 1: In each case, you need to use modular decomposition and stepwise refinement. Show the pseudocode and final C code in your lab notebook.

Note 2: You are not allowed to use standard string functions. Implement your own.

- A palindrome is a string which has the same spelling forwards and backwards (for eg. The word 'noon' is a palindrome.) Write a program to accept a string from the user and check if it is a palindrome.
- Write a program to 'increment' and 'decrement' an integer string. For example, if the integer string is '23570', its incremented value is '34681'. You can assume that the characters are circular (ie. '9' is followed by '0', which is followed by '1' and so on. For example, on incrementing '99', you get '00'.) Note that an integer string is different from the integer 23570. The program should accept inputs from the user, check if they are valid integer strings (eg. 'A4c' is not a valid integer string), and make use of the functions:

`char[] IncrementIntStr(char[])` and

`char[] DecrementIntStr(char[])`.

- Write a program to change a phrase into title case. For example if the input is 'Hello how are you doing', the output should be 'Hello How Are You Doing'. The input can be of any length.
- Write a program to accept two strings from the user. Then check if the shorter string is a substring of the longer. (For example, 'mbe' is a substring of 'december', whereas 'mbr' is not.) Also return the index where the the substring begins and ends.