**C/C++ STRING REVERSAL LAB REPORT**

**1) Enter your name, student ID, platform (Mac or PC) and date**

Name and Student ID: Samuel Indurkar, 0888068

Class: CIS054 C/C++ Programming

Platform (Mac or PC): g++ and eclipse on MAC  
Date: 7/11/2017

**DESCRIPTION:**

The project is described in the textbook, Chapter 9 PROGRAMMING PROJECTS #4.

Write a function that uses two pointers, *front* and *rear*. Reverse the string by swapping characters pointed to by *front* and *rear*. Increment the *front* pointer and decrement the *rear* pointer until the entire string has been reversed. Your program will need to determine when the string has been fully reversed and stop swapping characters. IMPORTANT: Your program must use pointer notation to reverse the string, not array notation.  
  
Do not submit a program that uses an already available routine that reverses characters in a string.

**LAB REPORT:  
2) Determine the Inputs, Processing and Outputs before creating the program**

|  |  |  |
| --- | --- | --- |
| **INPUTS** | **PROCESSING** | **OUTPUTS** |
| Prompt the user for a string | Reverse the string by swapping characters pointed to by *front* and *rear by i*ncrementing the *front* pointer and decrementing the *rear* pointer until the entire string has been reversed | print the reversed string |

**3) Fill in the EXPECTED & ACTUAL RESULTS**

|  |  |  |
| --- | --- | --- |
| **TEST DATA VALUES**  Provide examples of a string with an even number of characters and a string with an odd number of characters. | **EXPECTED RESULT**  Computed values before the program is run | **ACTUAL RESULT**  Fill in the output displayed  by the program |
| even characters = what  odd characters = few | tahw  wef | tahw  wef |

**DISCUSSION:**

**4) Complete the DISCUSSION section. It does not need to be long, but it needs to be complete.**4a) What did you do to develop the program? ("Followed the Directions" is not a complete description)

Prompt the user for a string. then reverse the string by swapping characters pointed to by *front* and *rear by i*ncrementing the *front* pointer and decrementing the *rear* pointer until the entire string has been reversed

4b) What problems did you have and how did you overcome the problems?

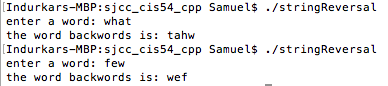
initially I had a logic problem in my program which was causing some weird unprintable funny characters to be displayed. I overcame this problem by adding print (cout) statements though out my program, but it was still not displaying correct reversed string. I realized the following two mistakes.

1. First, I was looping for i =0 till end of array(100). I realized that I don't have to reverse the 100th element. I overcame it by looping till string-length.
2. Second. Even after looping till string-length, I realized I don't have to reverse all of it, I only have to stop half-way.

**PROGRAM OUTPUT:**

**5) Show screen shots for at least TWO strings that have been reversed. One string must have an EVEN number of characters and the other string must have an ODD number of characters.**

Refer to previous lab assignments for instructions on how to capture a screen or portions of a screen for either the PC or a Mac

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**PROGRAM LISTING:**

**6) Copy and paste the code that YOU typed to make the program work. Your program should include a comment block at the top that shows the name of the program, date, version and your name.**

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\* stringReversal.cpp

\*

\* Created on: Jul 11, 2017

\* Author: Samuel

\*/

#include <iostream>

#include <cstdio>

using namespace std;

int main()

{

char string[100];

char\* front;

char \* rear;

cout << "enter a word: ";

cin >> string;

front = string;

int i, temp ;

int stringLength = strlen(string);

rear = &string[ stringLength-1 ];

for (i = 0; i<stringLength/2 ; i++)

{

temp = \*front;

\*front= \*rear;

\*rear = temp;

front++;

rear--;

}

cout<<"the word backwords is: " << string << endl;

}