Lab 4

Read materials on one-dimensional arrays

1. Read 10 numbers into an array, copy them into another, then display the result. **1pt**
2. Save the 10 numbers loaded from the keyboard into the array, and then display the information about which numbers have repeated themselves. **2pt**
3. Read a positive integer of type long int and check if all the digits are different in its notation. Write out the ones that are repeated. **2pt**
4. Write a program to check whether a number read from the keyboard is a palindrome, i.e., read from the end is the same, e.g., 12321,234432,3445 **3pt.**
5. Read 10 numbers into an array, then sort in order from smallest to largest (use the bubble sort algorithm). **3pt**
6. Read 10 numbers into an array, then sort in order from smallest to largest (use the insertion sort algorithm). **3pt**
7. Read 10 numbers into an array, then sort in order from smallest to largest (use the selection sort algorithm) **3pt.**

Review the char arrays materials

1. Write a program that writes backwards the words given in the input. **2pt**
2. Write a program that encrypts the given string of characters using Caesar's Cipher. The program should be able to both encrypt and decrypt the message. **4pt**

Cipher Description: We convert each letter of the plaintext into a letter shifted 3 places to the right. Thus, we encrypt the letter A as the letter D, the letter B as E, and so on. In the case of the letter Z, we choose the letter C. To decrypt the text, we repeat the operation this time moving the letters 3 positions to the left.