

Introduction to C Programming (Week 5)

The following tasks are designed to provide practice and gain an understanding in the use both numeric and character arrays.

Task 1 - Using a simple integer array (numbers.c)

Write a program that will allow you to input 5 number and the print them on the screen, once in the order they were entered and then in reverse order.

Task 2 - Using two character arrays and stepping through (vwlcnt.c)

Write a program that prompts for a string to be entered , e.g a short sentence. When <Enter> is pressed, the string is analysed counts the number of vowels in it. The program should continue to prompt for a string until the word 'end' is entered.

HINT: Create an array of 5 character to hold the vowels. You will need to look up in the help file and use 'strcmp' and include the appropriate header file.

Task 3 - Manipulating character arrays (password.c)

Write a program that will accept a single word of up to 12 characters. Take each character in turn and add 3 to its ASCII value and stores the new character in an array to be printed at the end.

Your program should keep asking for new words until the word QUIT is entered in upper-case. You will need to look up 'strcmp' in the 'string.h' header file under the Turbo C help system.

Remember to flowchart your program first.

Task 4 - Using a two dimensional integer array (magic.c)

Write a program to output the elements of the table of a magic square and sum (calculate) the rows and columns. This will require you to use a 2 dimensional array in which the number of the magic square are stored. To manipulate the rows and columns of the magic square and variables that hold the row and column totals, use a nested loop (two loops, one inside the other). The array should be initialised to the value of the magic square given below when you declare it. Your output should look like this:

```
8 1 6 = 15
3 5 7 = 15
4 9 2 = 15
= = =
15 15 15
```