CSC112 Fall 2010
Fundamentals of Computer Science
Lab 4 – Arrays

In this lab we have an abbreviated exercise and will build upon it next week.

Using Arrays in C++ programs

Create a directory named Lab4. Keep all of your source and compiled programs in the directory Lab4.

Write a C++ program that reads in a sequence of integers (up to EOF) and stores them in a dynamically allocated array of type **unsigned short**. You can fix the size of the array (for now) at 100, but be sure to write your program in a way that makes this size easy to change. Be sure that your program detects array overflow. If you detect array overflow, you have two choices:

1. Standard: Print an error message using the **cerr** stream object. and call **exit(1) ;**

2. Bonus Points: Dynamically re-allocate a larger array (say, twice the current size). Copy all elements stored in the current array into the new array. Delete the old array. Set the pointer to the current array to the new array. Continue processing as if there is no error.

Write a function with the following header:

```
void reverse( unsigned short a[], int n )
```

that will reverse the order of the entries in the array.

Print out the reversed sequence of numbers.

To test your program, download a file called "lab4_numbers" from:
                    http://menehune.opt.wfu.edu/CSC112

Your program should read from standard input (using **cin**). Use UNIX redirection to enable your program to take its input from the file "lab4_numbers".

Turn in: Change to the directory containing the sub-directory "Lab4" Create a file named "lab4.tar" using the command:

```
        tar cf lab4.tar Lab4
```

Upload the file "lab4.tar" to your account on telesto.