**Data Structures**

Lab Project: 01

Points Possible: 100

Due Date: Feb. 01, 2013 (11:59pm)

**Objective:** Demonstrate knowledge of the classic array data structure by creating and compiling a simple command line program. C or C++ may be used for this assignment.

**Grade Table:**

Programming Guidelines are followed 10

Program compiles without error 10

Program makes use of the argv array 20

Program displays a welcome message when run 20

Program calculates the average of command line arguments 20

Program gracefully handles the case of no arguments 20

TOTAL ( Points Possible ) 100

**Instructions:** Create a simple command line program to calculate the average of a variable quantity of integers that are passed as an argument when the program is called. This uses the **argv** array from main - you should not use "scanf" or "cin" functions to complete this project. When the program is launched, have it display a welcome message. Also make sure to have the program display a help message if the user forgets to give any integers as the argument. The below examples demonstrate the program on a Windows system. If you use a Mac or Linux your program very likely will not have the “.exe” extension which is fine.

Example of calling the program with arguments:

average.exe 1 2 3 4 5 6

The result of the above should be something similar to:

Welcome to the Average Program. It is very average really.

The average is: 3.5

Example of calling the program without arguments:

average.exe

The result might be:

Welcome to the Average Program. It is very average really.

Usage: average X ( X is 1 or more integers )

**Note:** You do not need to deal with invalid input. For example if the user enters:

average.exe kiwi 12.3 the\_color\_blue

...it is acceptable for the program to crash and burn.

**Turn In:**

1. Create a folder or directory named “project01\_lastname”
2. Place **ONLY** your source code for the project in this folder ( many email systems do not allow the transmission of .exe files for security reasons )
3. Compress the folder into a ZIP file
4. Attach the resulting compressed file to an email with the subject line of: “TCC-Project 1 Your Lastname” By doing so GMAIL should send you an automated response if and only if your email has a subject line that contains the exact phrase “TCC-Project” AND has an attachment.
5. Send the email to me at:

gpatterson4tcc@gmail.com

*If you have any questions email me early and often at the above address!*