**CST 231 PLTL Week 9**

**Exercise 1:**

Practice with a simple Course struct, which simulates the characteristics of a course. Here is the struct definition:

struct Course {

char courseName[100];

char instructorName[100];

char semester[100];

char prerequisite[100];

int section;

int numberOfSeats;

bool isFull;

}; // End of struct

A. Which of the lines below have valid syntax? Why or why not?

Course math; // 1

Course english, history; // 2

courseName = "CST-370"; // 3

math.section = 3; // 4

math.prerequisite = "MATH-395"; // 5

math.prerequisite[0] = "MATH-42"; // 6

history.isFull() = true; // 7

**Exercise 2:**

Create a function that creates a random number for a specific range. This function will take in 2 variables a minimum and maximum for our range. The function will then return a random number within that specific range. In the main ask the user to enter the range then call the function and print the returned number in main.

**Exercise 3:**

Using the random number function we created in the previous exercise fill an array with a 100 random numbers. Then create a function that will take an array and a number chosen by the user as arguments. This function will then search through the array for the user picked number and return the first index it finds the number at. If it can’t find the number, have the function return -1.

**Challenge:** Have the function print all the indexes where the number is found.

**Exercise 4:**

Let’s practice opening files and count what’s in the file. Open a text file, you can use any text file you want or download the Shakespeare.txt from ilearn.

Count the following:

* Number of lines in the file
* Number of words in the file
* Number of characters in the file
* Count how many e’s are in the file

**Super Challenge:** Count the frequency of all letters and store this into an array then print the array.