EECE.2160: ECE Application Programming

Spring 2017

Lecture 21: Key Questions
March 10, 2017

1. Describe how to declare, initialize, and access two-dimensional arrays.

2. **Example:** Complete the following program:

```
#include <stdio.h>
#define NRows 3     // # of rows
#define NCols 4     // # of columns
int main() {
   double x[NRows][NCols] =         // 2-D array
             {  {  10,  2.5,    0,  1.5},
                {-2.3, -1.1, -0.2,    0},
                {10.5, -6.1, 23.4, -9.2} };

   int negCnt[NRows] = {0};    // Initialize entire row
                               // count array to 0
   int i, j;                   // Row and column indices

   /* INSERT CODE HERE--Visit every element in array x and
      count the number of negative values in each row */









   // Now print the row counts
   for (i = 0; i < NRows; i++)
      printf("Row %d has %d negative values.\n",
                i, negCnt[i]);

   return 0;
}
```

3. Explain how to pass arrays to functions.

4. **Example:** Write a function for each of the following:

- Given an array of doubles (`arr`) and the # of elements in the array (`n`), find the average of all array elements

6 (cont.) **Example:** Write a function for each of the following:

- Given an array of ints and the # of elements, find the largest element in the array

- Given an array of test scores (`tests`), the # of elements in the array (`n`), and an amount to scale those scores by (`s`), add `s` to every element in `tests` and print the scaled scores

5. Explain the relationship between pointers and arrays.