CptS 121 – Program Design and Development October 26, 2020

Your Name: \_\_\_\_\_\_\_Jake Darrow\_\_\_\_\_\_\_\_\_ TA’s Name: Andrew\_Fritz\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ ID#: \_\_\_\_\_\_\_\_\_\_\_011588556\_\_\_\_\_\_\_ Section #: \_\_\_\_7101\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

# Take-Home Quiz 7 (15 pts) – Arrays and Strings

Using Blackboard Learn<https://learn.wsu.edu/webapps/login/>submit your quiz. You will submit your assignment in the ***lab*** Blackboard space. Under the "Content" link navigate to the "Quiz Submissions" folder and upload your solution to the appropriate “Quiz” space. You must upload your solution, through an attachment, as <your last name>\_quiz7.pdf by the due date and time.

1. (5 pts) Write a fragment of C code that declares a two-dimensional array of integers called matrix. The array should consist of 10 rows and 5 columns. The fragment should then iterate through each row and column and set the *element* to the *difference* of the row index and column index of that element, i.e. row index – column index.

#include <stdio.h>

int main(void)

{

int matrix[10][5];

int x = 0, y = 0;

for (x = 0; x < 10; x++)

{

for (y = 0; y < 5; y++)

{

matrix[x][y] = x - y;

}

}

printf("Matrix elements are: ");

for (x = 0; x < 10; x++)

{

for (y = 0; y < 5; y++)

{

printf("%d ", matrix[x][y]);

}

}

return 0;

}



1. (7 pts) Write a function called find\_min(), which accepts as parameters: a two-dimensional array of integers, the number of rows, and the number of columns in the array. The function searches the entire array for the smallest value and returns it.

int find\_min(int array[][10], int c, int r)

{

int i, j;

int x = 0, y = 0;

int min = 2147483647;

for (x = 0; x < c; x++)

{

for (y = 0; y < r; y++)

{

if (min > array[x][y])

{

min = array[x][y];

}

}

return min;

}

1. (3 pts) What is a C string? Explain.

A String is a sequence of numbers or characters. A one dimensional array with the null character at the end of it. We’ve been using strings for a while without calling them strings. Printf(“Example text”) uses “Example text” as a string. The double quotation marks automatically set the null character to be at the end of the string for you.

Instructor: Andrew S. O’Fallon