CSC 102 – Assignment #4

Assigned: Thursday, March 11, 2010
Due: Tuesday, March 23, 2010 at beginning of class

Source Code: Please include a header section at the top of your source code with your name, date, purpose, and pseudocode. All submitted source code must compile as-is on orca and the executable must be able to run on orca.

Email submission: Send source code as an attachment to Preetam.Ghosh@usm.edu. The subject line of your email should have the following form:
CSS 102, name, hw #

Purpose of this assignment:
1. Work with arrays.
2. Learn to use pointers.
3. Gain more practice with functions.

Assignment:
Write a program that can find the maximum even and odd numbers from each row of the following 2-D array:

\[
\begin{array}{cccccc}
4 & 9 & 2 & 8 & 7 & 13 \\
14 & 19 & 3 & 12 & 20 & 8 \\
17 & 9 & 6 & 10 & 17 & 12 \\
\end{array}
\]

Additional requirements:
- Note that a 2-D array is an array of arrays. You need to pass each row of the 2-D array to the function that calculates the maximum even and odd values.
- In main(), you will also declare six variables of type int for storing the maximum even and odd values for each of the 3 rows.
- Write a single function for determining the maximum even and odd values of a 1D array. The function declaration will be

\[
\text{void largest(int *data, int size, int* ptrEven, int* ptrOdd);}\]

where size is the size of the array to be processed (equal to the number of columns), ptrEven is the pointer to the variable in main() for storing the maximum even value, and ptrOdd is the pointer to the variable in main() for storing the maximum odd value for that specific row.
- Don’t hard-code values in your function specific to either array. Instead, the function should be able to process any other 1D array of ints.
- In main(), call largest() for the first row and after largest() has completed its work, from main() print the maximum even and odd values from the sequence. Repeat this process for the second and third rows.
- You can assume that the array values will be greater than or equal to zero.
Use pointer notation (no subscript notation allowed) to work with the arrays.