From loops to threads

2/3/16
Announcements

• HW 3 due NOW!

• For Monday, read the rest of Chapter 6

• Midterm
  – Topics: Programming using tasks and threads, dependence graphs, reductions (and other patterns), topologies, everything else
  – No class Friday
Linearizing multi-dimensional arrays

• cudaMemcpy only transfers 1D arrays
• need to represent 2D array:

in a 1D form:

cell \( y \times \text{row} \_\text{length} + x \)
What is the 1D index of the cell below the cell with 1D index $i$?

A. $i + 1$
B. $i + 4$
C. $i + \text{row\_length}$
D. $i \times \text{row\_length} - 1$
E. Insufficient information to determine it
What is the 1D index of the cell below the cell with 1D index i?

A. i + 1
B. i + 4
C. i + row_length
D. i * row_length - 1
E. Insufficient information to determine it
Which test will determine if the cell with 1D index i is on the right edge (of the 2D matrix)?

A. \( i \% \text{row\_length} == 0 \)
B. \( i \% \text{col\_length} == 0 \)
C. \( i + \text{row\_length} > \text{row\_length} * \text{col\_length} \)
D. \( i \% \text{row\_length} == \text{row\_length} - 1 \)
E. None of the above
Which test will determine if the cell with 1D index $i$ is on the right edge (of the 2D matrix)?

A. $i \% \text{row\_length} == 0$
B. $i \% \text{col\_length} == 0$
C. $i + \text{row\_length} > \text{row\_length} \times \text{col\_length}$
D. $i \% \text{row\_length} == \text{row\_length} - 1$
E. None of the above