

## **LAB Assignment #1 for Hardware/Software Codesign with FPGAs**

Assigned: Mon., Sept 26, 2011

Due: Mon., Sept 28, 2011

### **Description: Implement a simple serial data transfer between LABVIEW and the microblaze.**

Write a labview VI to read an array of integers from from a file and send them over the serial port. The integer array is as follows:

4

12

23

36

14

The first number read (and sent over the serial port) is the number of integers in the file. Once sent, send each of the integers in the array over the serial port.

Modify the HelloWorld xps project to read the number of integers, and then the integer array, from the serial port using scanf. Store the integers in an array. Once read, send the number of integers, followed by each of the integers in the array, over the serial port using printf.

Your labview code, after writing the array to the serial port, should wait and then read them back. Display the values read in an indicator array.

NOTE: You need to set the 'code' segment to use the external memory (default is to use the internal BRAM). This can be changed when you 'Generate Linker Script'. Control over where the code segment is placed in memory is in the upper left corner of the dialog. You also need to increase the size of the stack and heap to 0x800.

### **Laboratory Report Requirements:**

1) Be prepared to demonstrate your project in class.

Grading:

LABVIEW coding style: 20%

Proper operation: 80%