

Lab Exam Computer Systems Organization

April 15, 2018

Problem

Problem statement: Given a 10x10 matrix, implement a circuit in bluespec that calculates the sum of all the elements of the matrix.

Details: The template code provided contains two bsv files namely TestBench.bsv and matAdder.bsv. The logic for the matrix addition is to be written inside the matAdder.bsv file. The TestBench.bsv file instantiates the matAdder module. The interface to the matAdder circuit comprises of two methods namely

- `put(Bit#(16) data, Int#(16) r, Int#(16) c)` - places data in the r^{th} row and c^{th} column of the matrix.
- `Bit#(16) receive()` - Returns the result of the element wise addition.

The TestBench calls the receive method after 120 cycles, which is when it expects the receive method to return the correct sum.

COMMAND LINE : Use `make mat` to compile the code and then `_run` to run the code. If your code is correct you will get a PASS message else you will get a FAIL message.

HINT: The first 100 cycles is for the matrix initialization and another 20 is for performing the addition.