ECE352F: Computer Organization

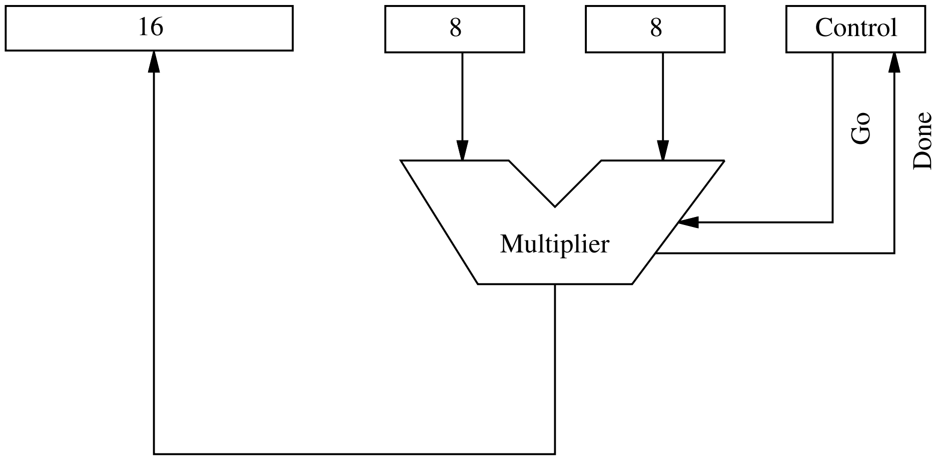
Lab #5: A Multiplier

Fall 1997

In this lab you will implement a shift-and-add Booth bit-pair recoded multiplier. Recall that this is the multiplier where you look at pairs of Booth-coded bits and reduce the number of adds/subtracts by one half.

The multiplier will take two 8-bit numbers as inputs and generate a 32-bit result.

You should use your circuit and program from Lab 4 as the way to connect to your circuit. The figure below shows a possible configuration.



The general procedure would be to write to two registers and read the result back in a third register. You should have a control register that has a **Go** bit and a **Done** bit to tell the computation to start and indicate when you are done.

Preparation

You should have fully simulated VHDL code. Example waveforms would be useful.