ECE352F: Computer Organization

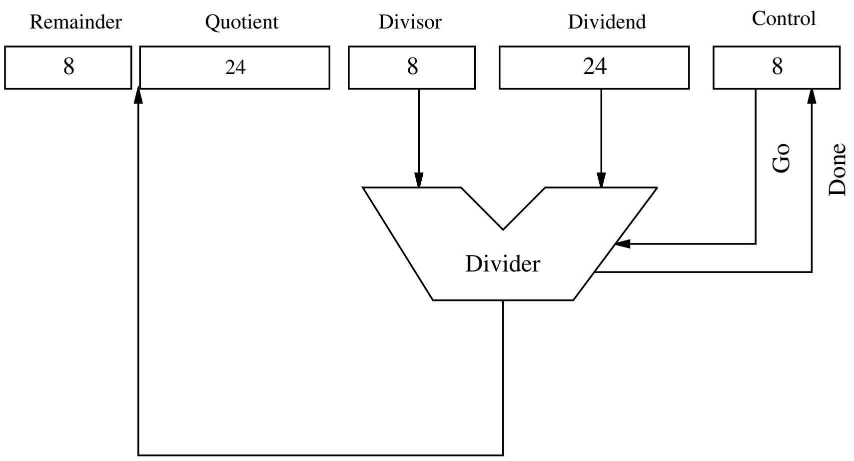
Lab #5: A Divider

Fall 1998

In this lab you will implement a non-restoring integer divider.

The divider should have an 8-bit divisor and a 24-bit dividend. The result will be a 24-bit quotient and an 8-bit remainder. Assume that all operands are positive numbers and that you do not have to preserve the original values of the operands.

You should try to use your circuit and program from Lab 4 as the basis for building an interface to your circuit. You may extend your design to add other registers, if you want. You may also devise a simpler interface circuit, if your Lab 4 circuit did not work. The figure below shows a possible configuration.



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.
- You will need a C program to input the numbers and display the results.
- Describe the registers that you require and how they are used.