

EGR 2700 Project: 8-Bit Signed Calculator

NuJude Mady, Jayanti Rakshit, Sam Walker

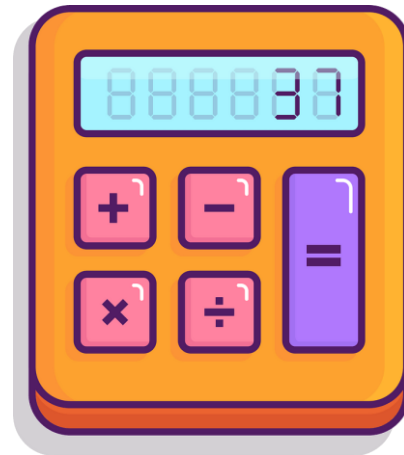




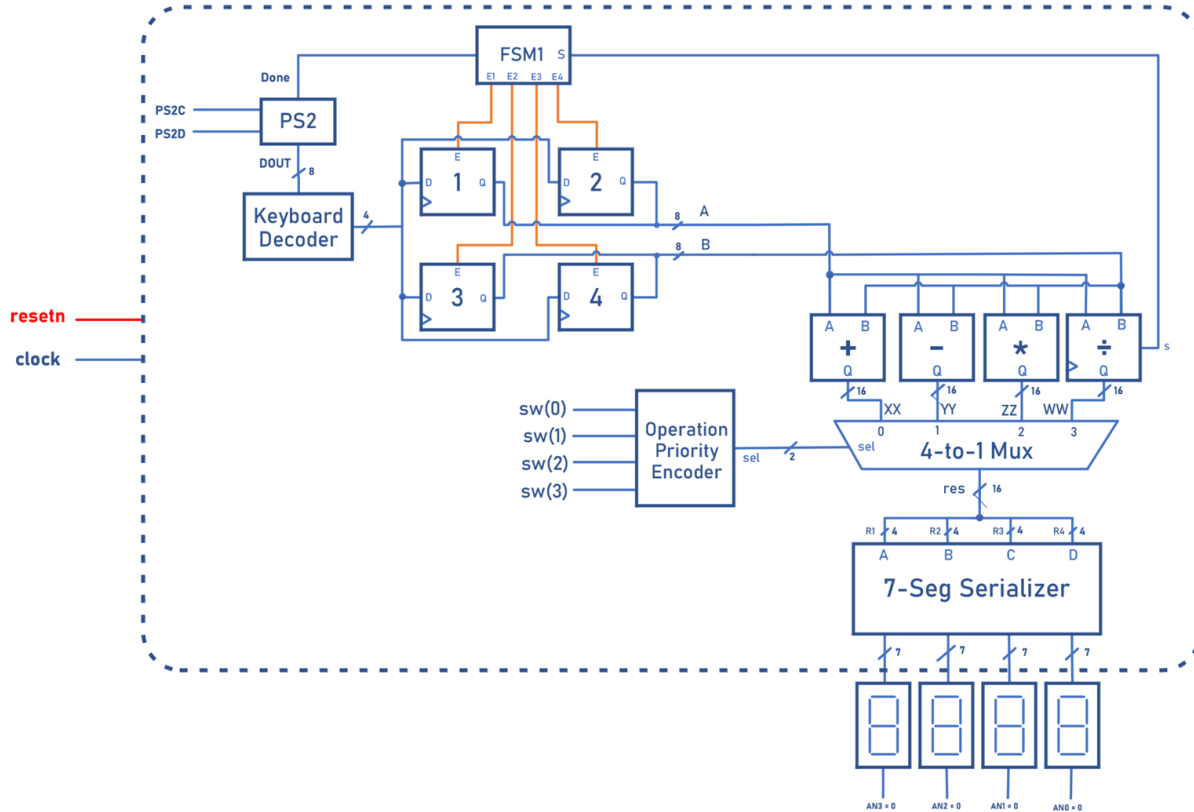
Functionality

The functionality of our calculator includes:

- Entering a two-digit hex number
- Selecting an operator with a switch
- Entering another two-digit hex number
- Outputting the answer with respect to the selected operator



Block Diagram



Reading Keyboard Input:

- FSM
- Four Registers
- Keyboard Decoder
- PS2

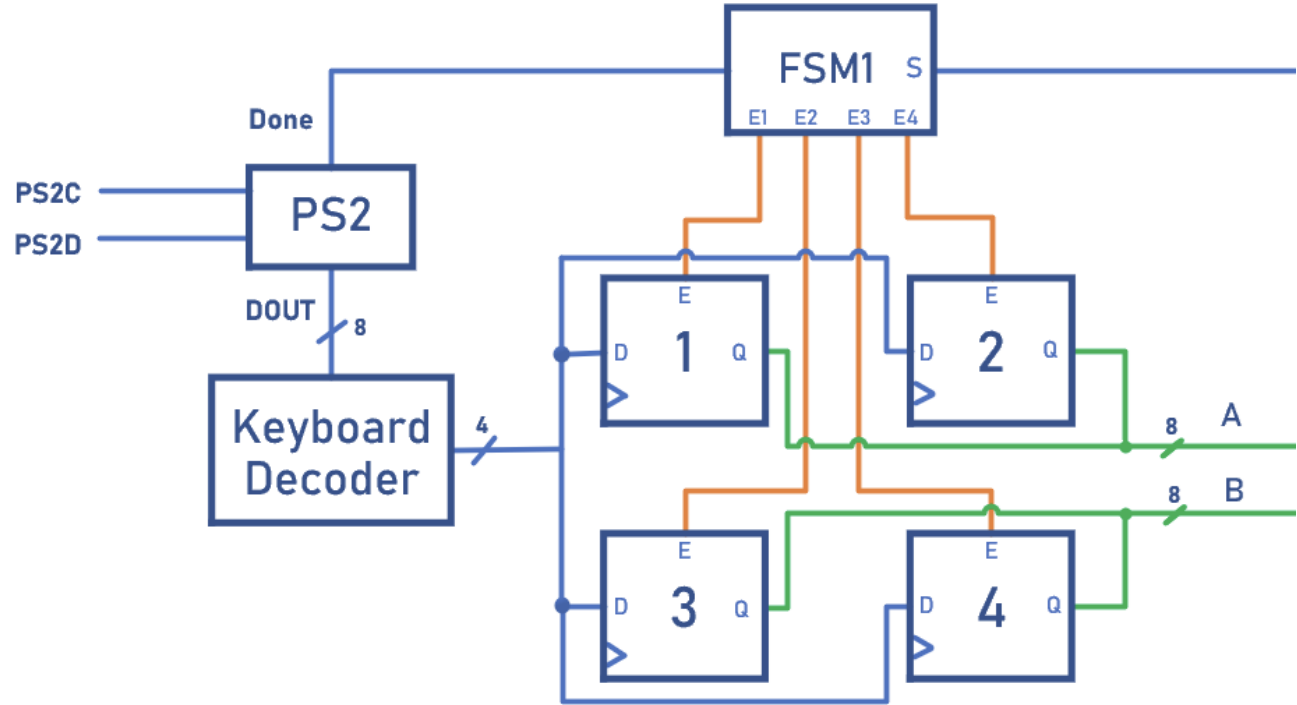
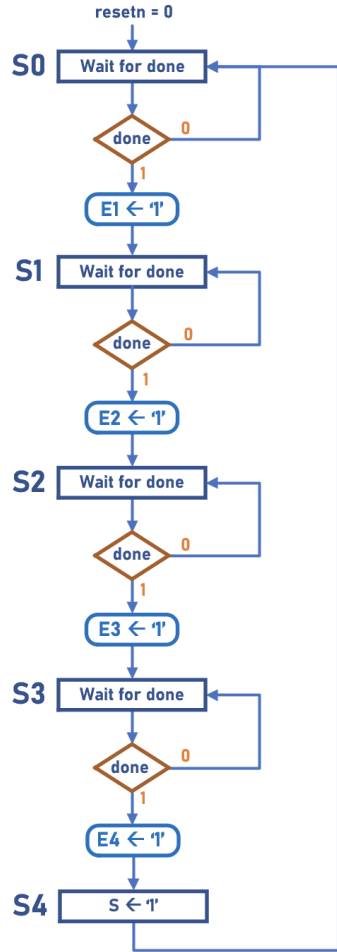
Arithmetic/Switches

- Adder, Subtractor, Multiplier, Divider
- 4-to-1 Mux
- Operation Priority Encoder

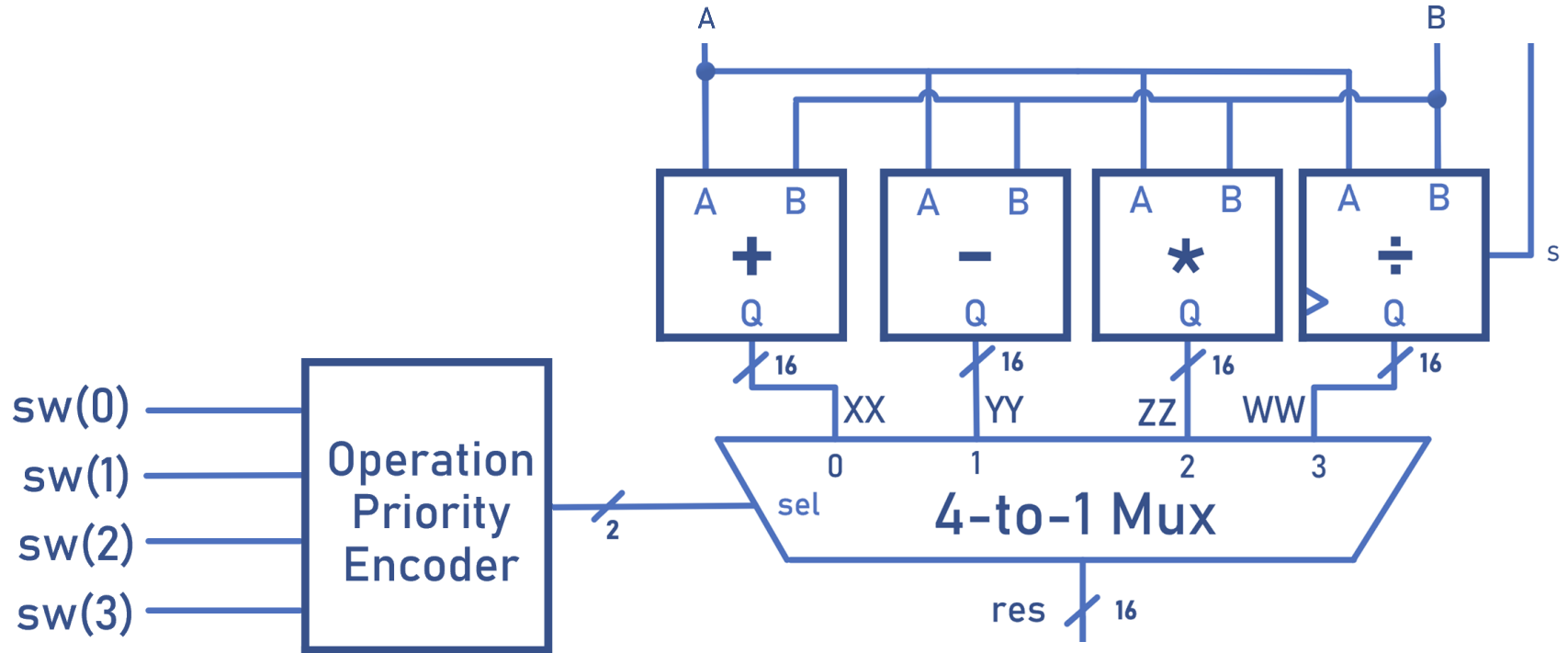
Display:

- 7-Segment Serializer

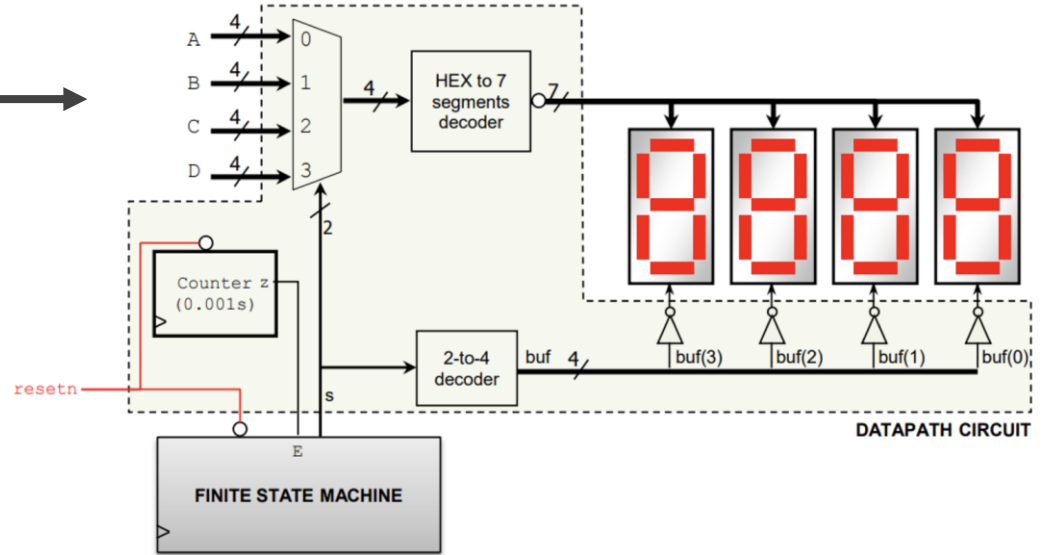
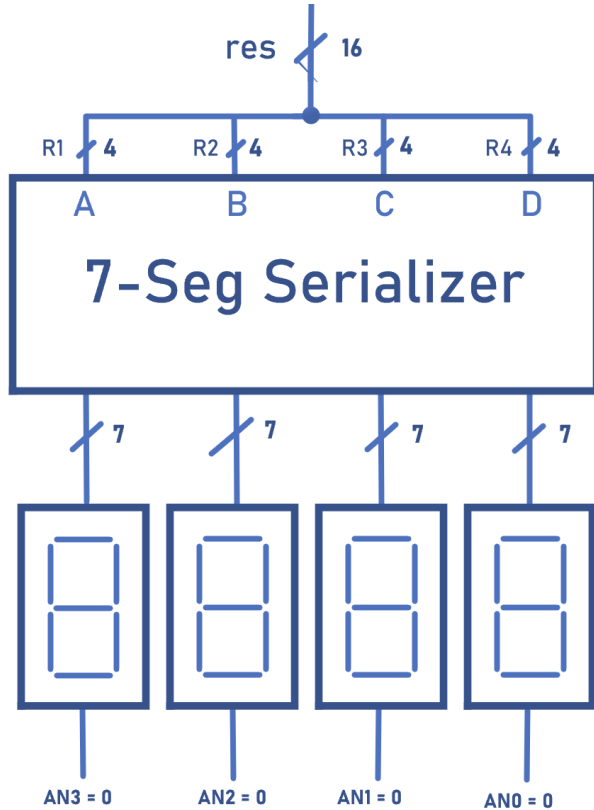
Reading Keyboard Input



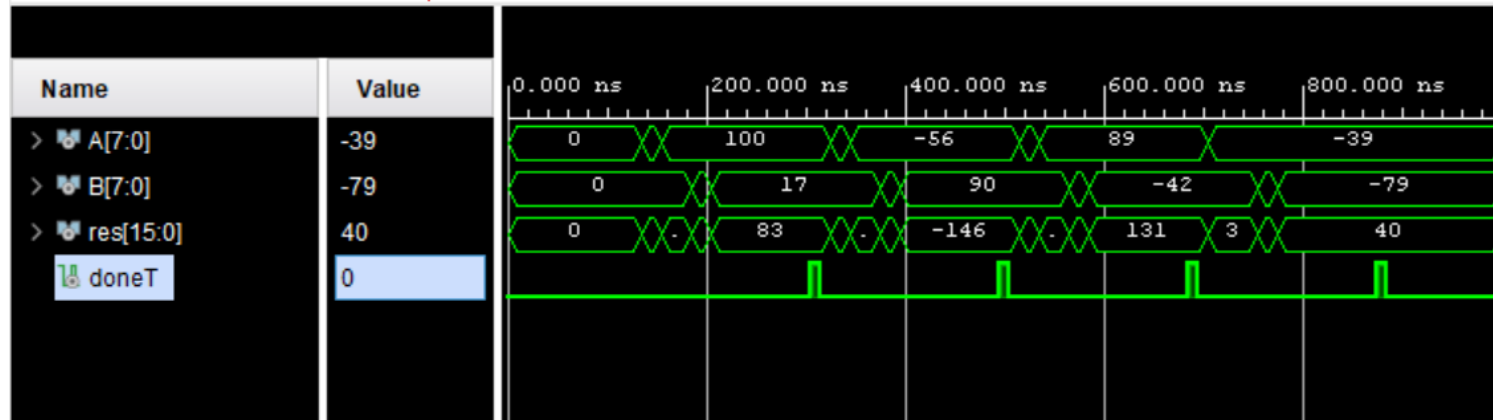
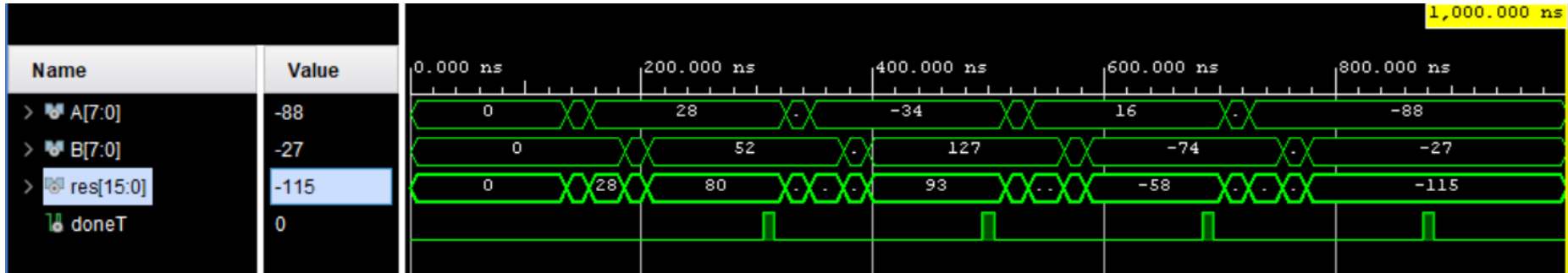
Arithmetic/Switches



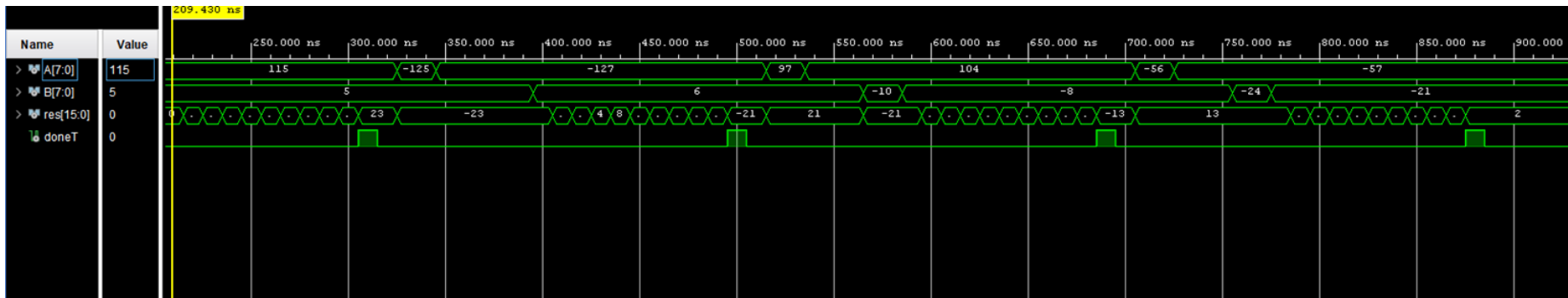
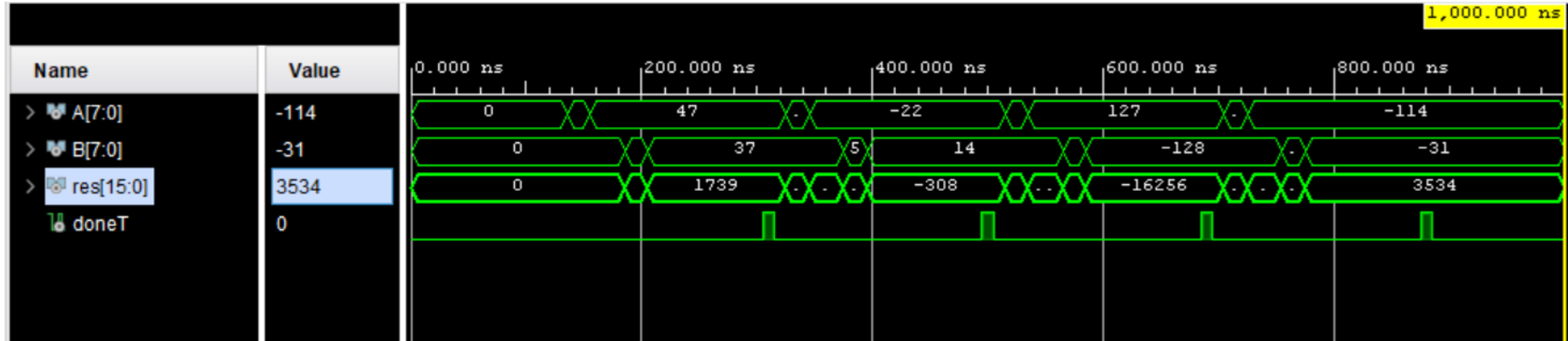
Display



Simulations (Add/Subtract)



Simulations (Multiply/Divide)



Video

<https://www.youtube.com/watch?v=lcjVxKpi5EU>