BANNER ON A SEVEN SEGMENT DISPLAY
WITH VARIOUS SCROLLING SPEEDS

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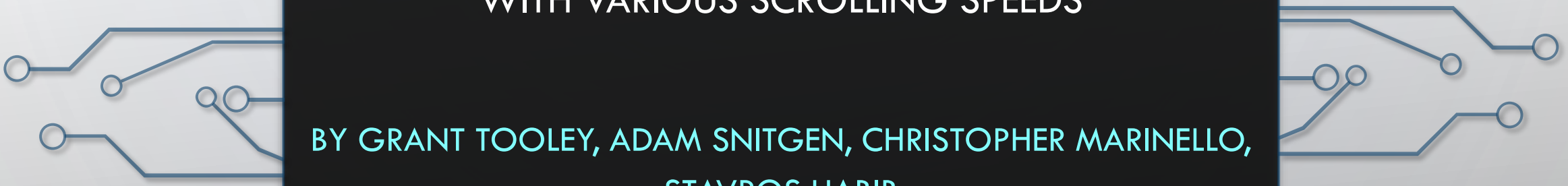


PROJECT DESCRIPTION

- Using VHDL code on the Nexys A7-50T FPGA Trainer Board to display a pre-coded message onto eight seven segment displays.
- We will show the message “ECE2700” on the seven segment displays with various scrolling speeds, shifting the letters from right to the left.

USES IN THE REAL WORLD

- Digital Clocks, Clock Radios, Basic Calculators
- Odometers, Gas Pumps, and Electronic Billboard
- Alarm Clocks

COMPONENTS

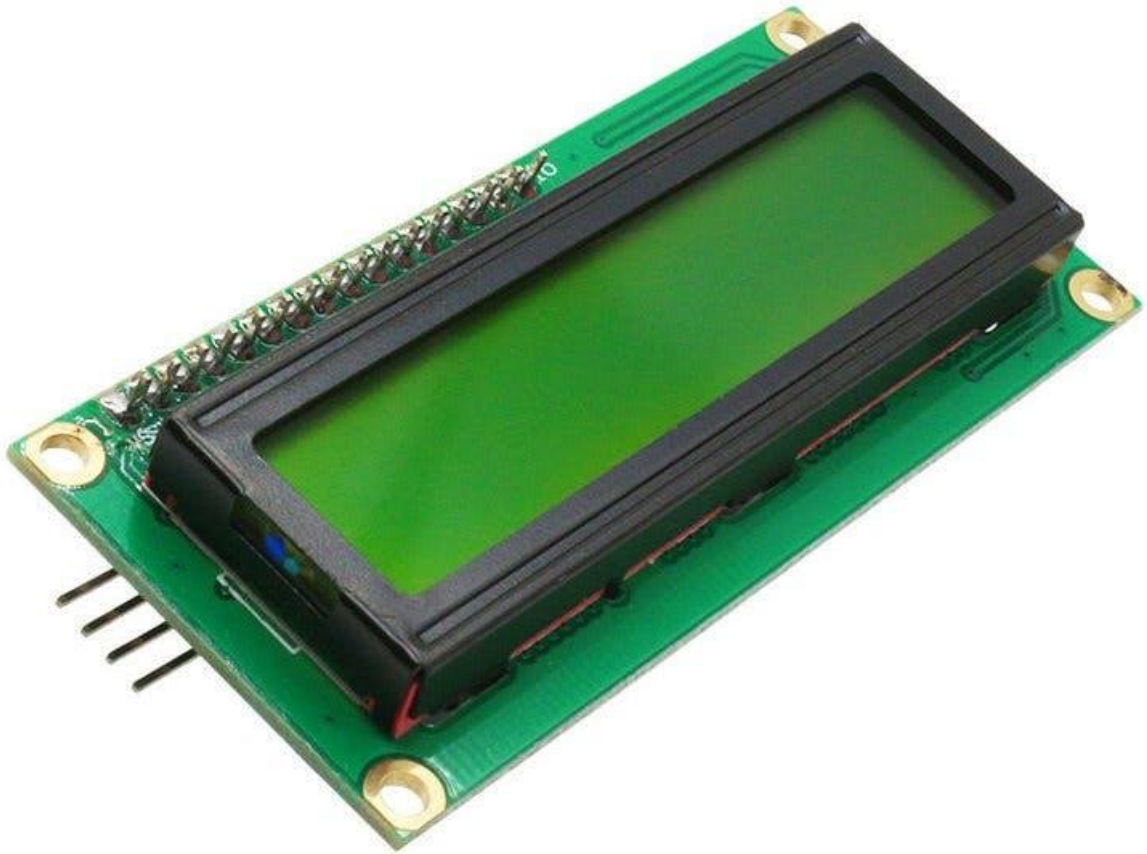
Four counters

4-to-1 multiplexor

Shift Reg Finite State Machine

RAM shift register

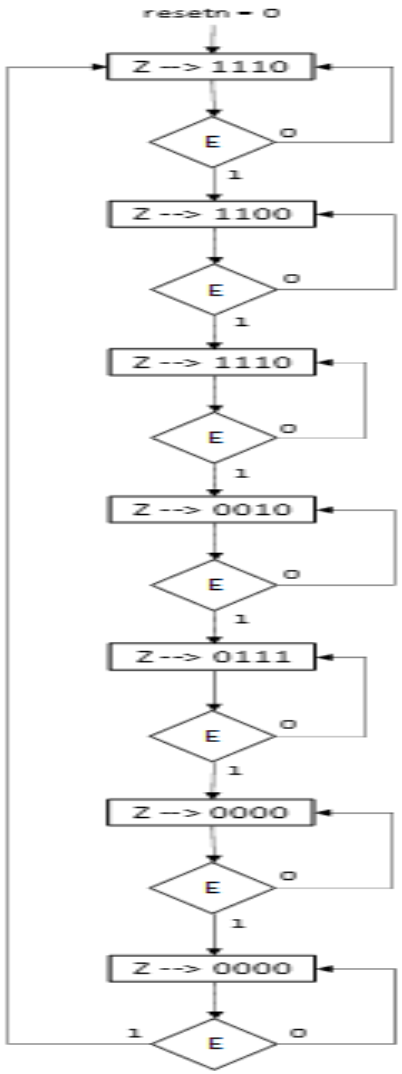
7-segment serializer



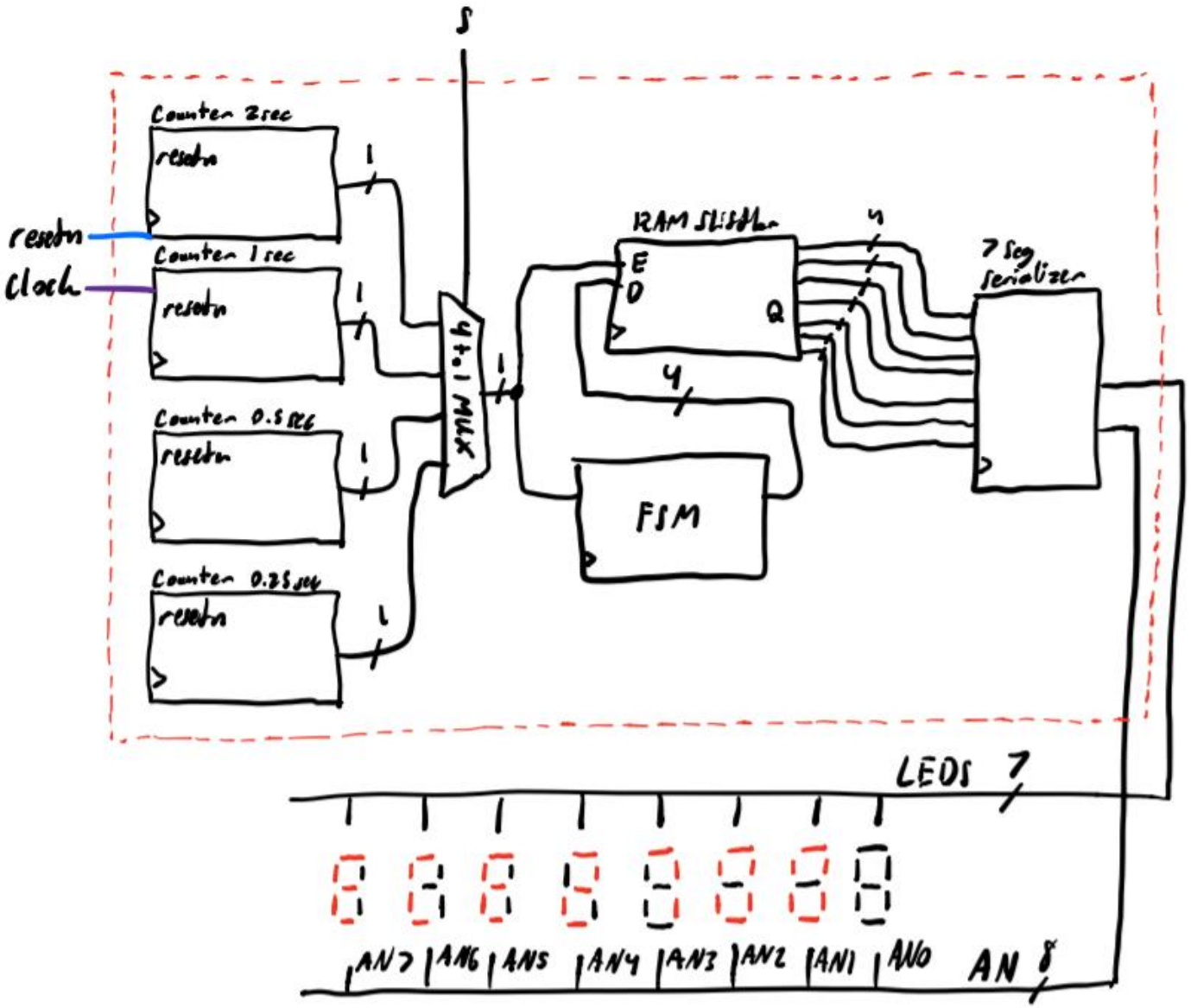
IMPROVEMENTS FOR OUR PROJECT

- Code could have included a longer message using more displays
- Use an LCD display for a more modern day approach

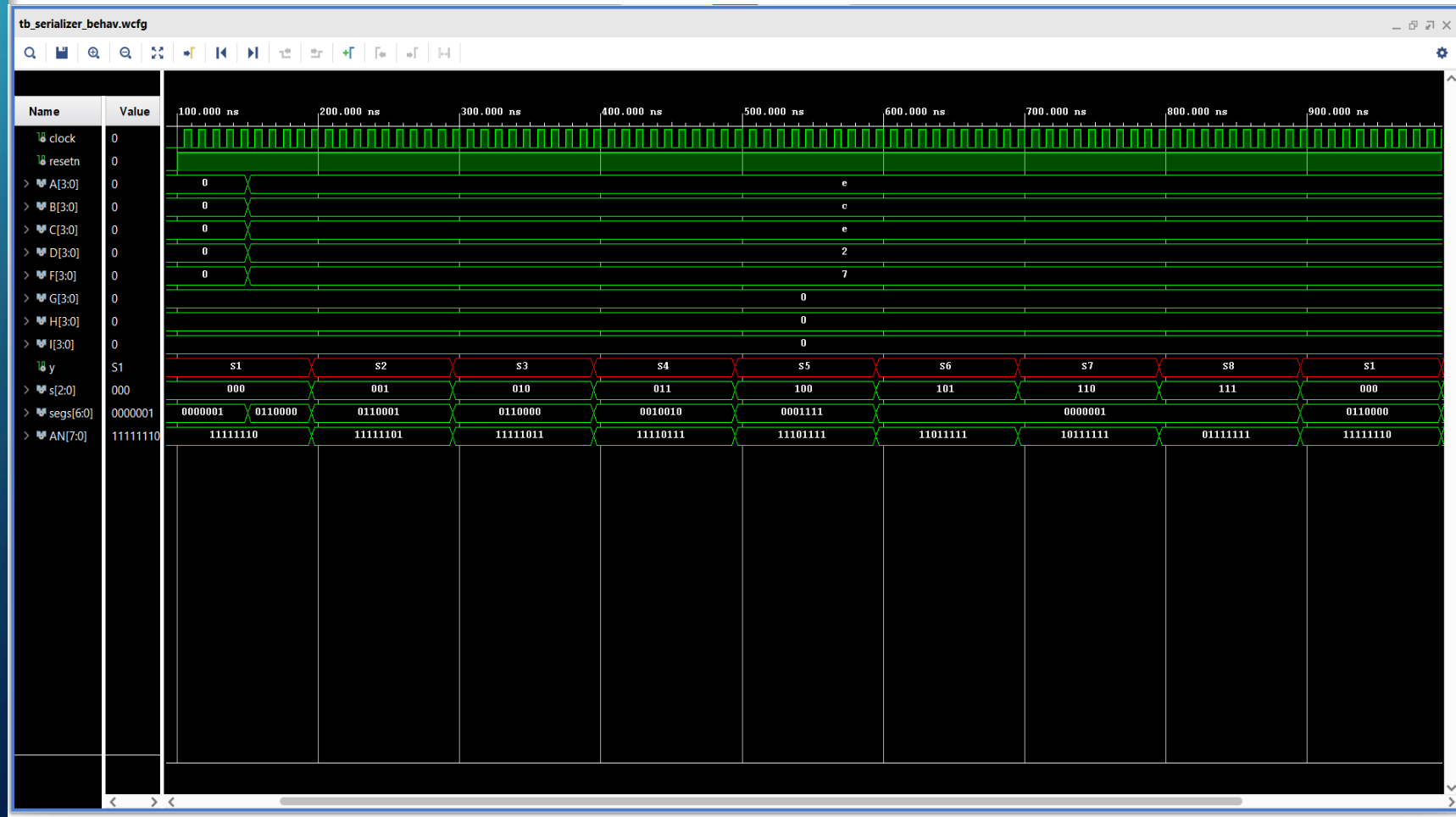
FSM DIAGRAM


resetn = 0
Z --> 1110
E
0
1
Z --> 1100
E
0
1
Z --> 1110
E
0
1
Z --> 0010
E
0
1
Z --> 0111
E
0
1
Z --> 0000
E
0
1
Z --> 0000
1
E
0

TOP BLOCK DIAGRAM



SEVEN SEGMENT SERIALIZER SIMULATION



DEMONSTRATION

- https://drive.google.com/file/d/12f6Shp4s4T_r0BuIWSHDLQ8QxJRTbm-G/view?ts=607245b1