

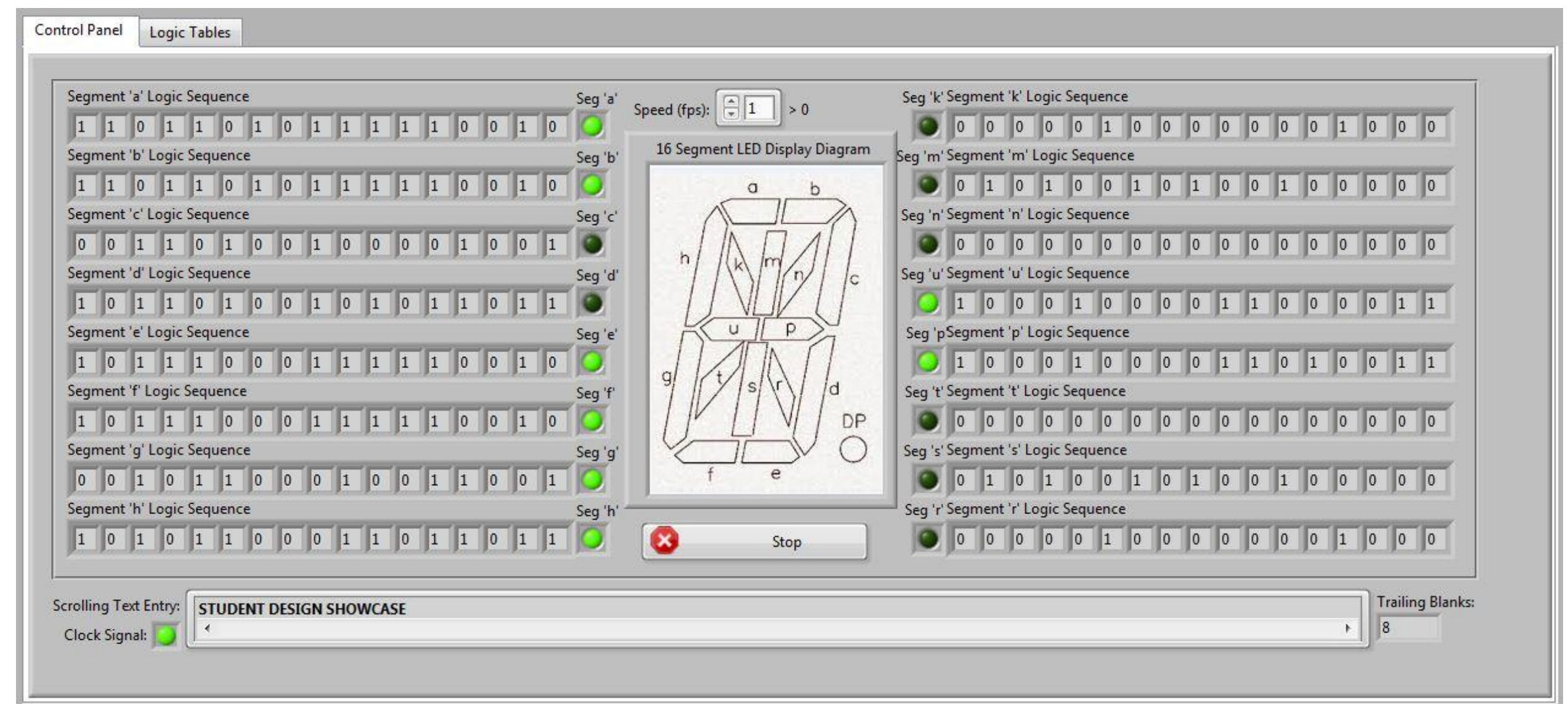
Interactive Scrollbar

Matthew A. LaFredo

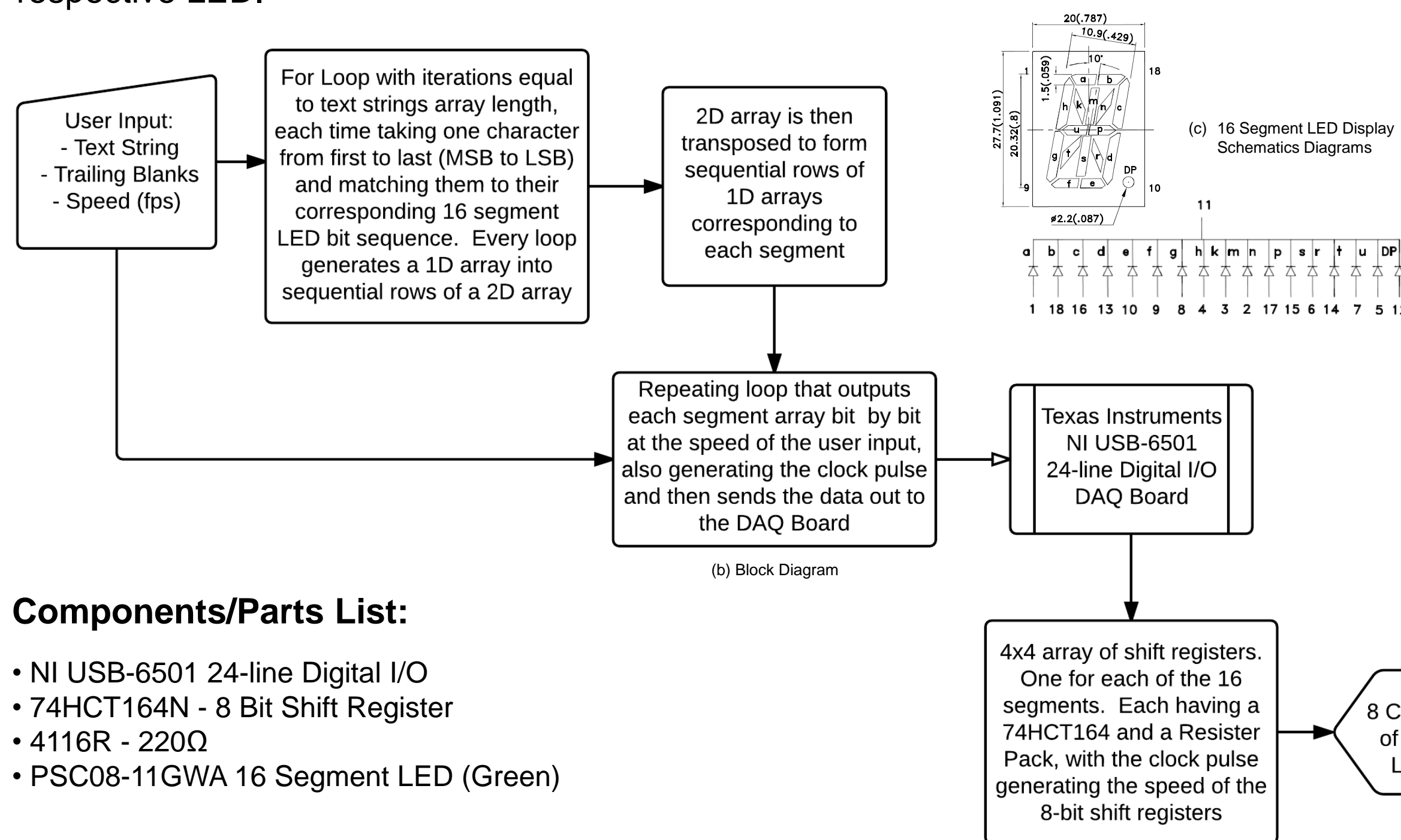
Faculty Advisor: Dr. Brian Lail, Dept of ECE, Florida Institute of Technology

Project Summary:

An array of 16-Segment LEDs are illuminated in a scrolling marquee sequence that is selected by the user. The software portion consists of a user interface in the form of a LabView application which sends digital outputs through a USB DAQ Device. A text string, and a specified number of trailing blank characters can be selected at the start. Once this data is submitted, the application will display the logic sequence of each segment, as well as allow for the speed of the scrolling text to be adjusted. The digital bit sequence for each corresponding segment is sent to a digital output as well as the clock signal to operate the 8 bit shift registers. Every shifted segment output is then sent through a resistor and then to their respective LED.



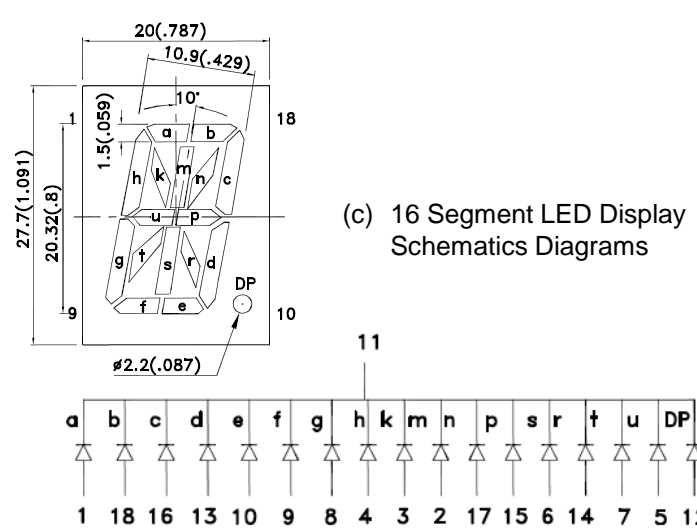
(a) LabView Application Front Panel



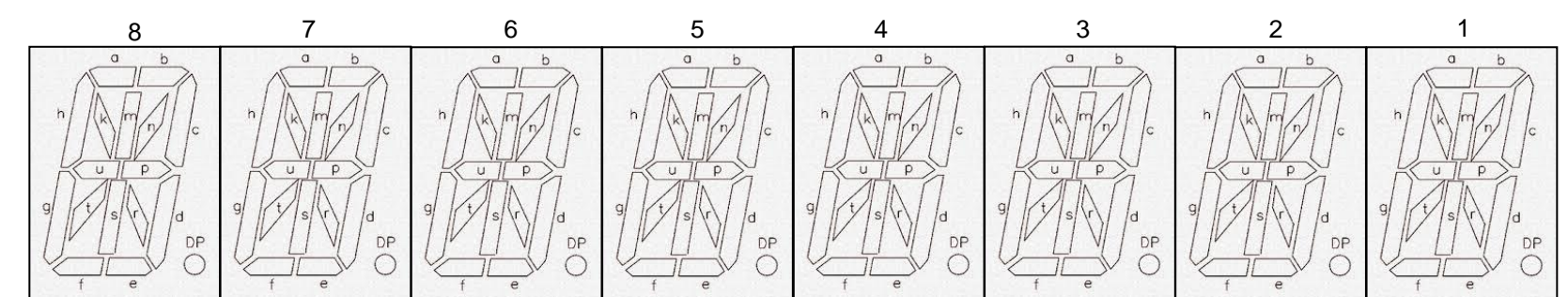
(b) Block Diagram

Components/Parts List:

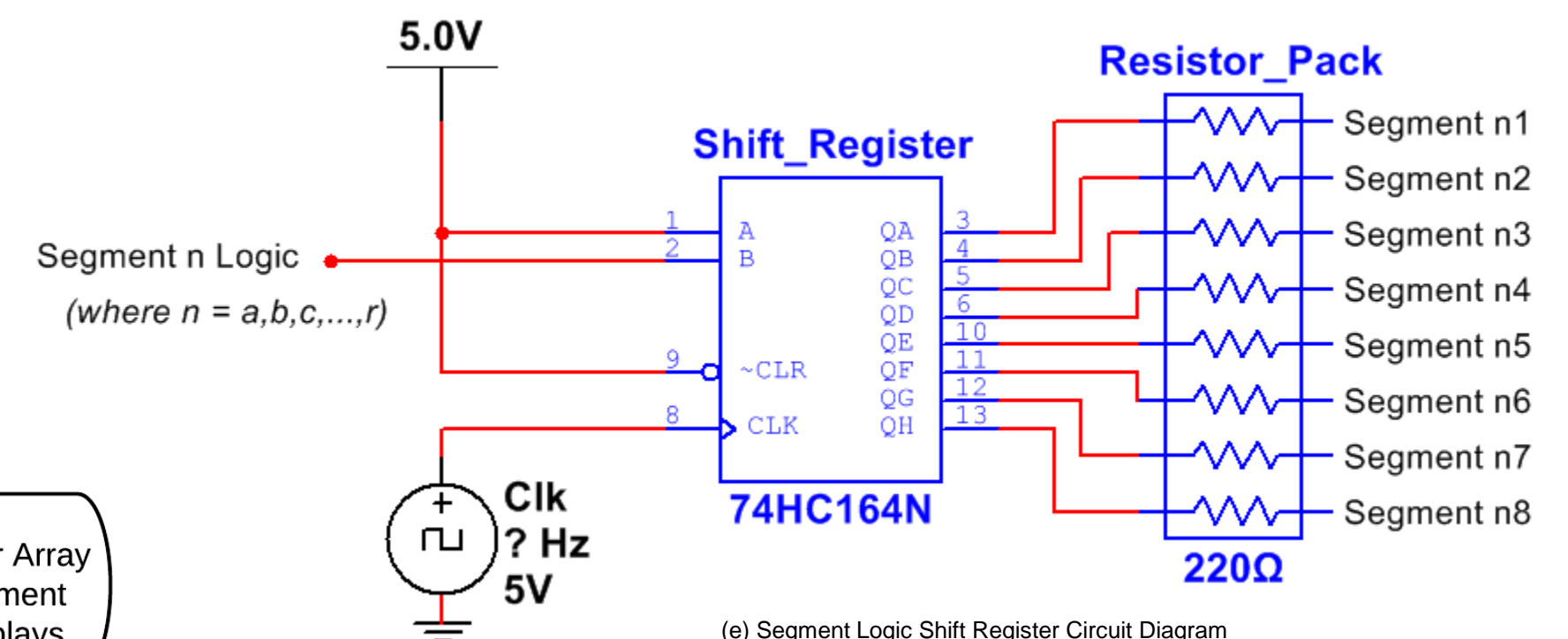
- NI USB-6501 24-line Digital I/O
- 74HCT164N - 8 Bit Shift Register
- 4116R - 220Ω
- PSC08-11GWA 16 Segment LED (Green)



(c) 16 Segment LED Display Schematics Diagrams



(d) 8 bit LED Character Array



(e) Segment Logic Shift Register Circuit Diagram

NORTHROP GRUMMAN



Engineering & Science
Student Design Showcase
at Florida Institute of Technology

