Jeremy Ellison and Stone Montgomery
Final Project Checkoff Checklist

The Commitment

- Ability to display one lead waveform
    - Requires properly functioning Leads, Filter, Amplifier, 12-bit ADC, Recorder – Stone
        - Filter – ensure low frequency waveform output
        - Amplifier – ensure output matches filtered output, but amplified
        - 12-bit ADC – ensure full data resolution of input waveform
            - Requires correct use and implementation of Nexys4's DAC
        - Recorder – displays full 3 seconds on screen
            - Requires writing 3 second blocks of data to Memory
    - Requires properly functioning Waveform Display– Jeremy
        - Check Waveform Display against probed output from Amplifier
            - Requires logic for dynamically changing display
            - Requires reading data from Memory

The Goal

- Ability to display patient's heart rate and all 12 leads, one at a time
    - Requires all functionality from The Commitment Section
    - Requires properly functioning Pulse Logic and Selector – Jeremy
        - Pulse Logic – ensure value is consistent with actual patient heart beat
            - Requires waveform analysis and logic
            - Requires dynamically changing display
            - Requires reading from Memory
        - Selector – change between waveforms when switches are selected, ensures displayed waveforms match respective lead output from Amplifier
            - Requires dynamically changing display and switch logic
            - Requires reading from different locations in Memory
    - Requires properly functioning Polling and Recorder and Analog Mux – Stone
        - Polling and Recording – ensure appropriate lead switching – manual verification
            - Requires writing to different blocks of Memory
            - Requires direct communication between the Backend and Frontend
        - Analog Mux – ensure output wave of the Amplifier changes when switching from lead to lead
            - Requires selecting different waveforms fed to mux
            - Requires functional buffering and appropriate selection logic

Stretch Goal

- Ability to display all 12 leads simultaneously
    - Requires all functionality from The Goal Section
    - Requires properly functioning Split Screen Logic – Jeremy and Stone
        - Split Screen Logic – ensure 1 to 12 Waveforms are displayed simultaneously
            - Requires dynamically changing display
            - Requires complex logic and waveform analysis to partition the display