

Quiz #1

LabVIEW

Dr. Pogo

Assignment is due “in class” on Thursday, September 7, 2023.

Quiz #1: Colors and Property Nodes. Teams of 1 or 2 are permitted.

- Inputs:** One “Active” button.
One “Stop” Button
Three knobs with digital displays.
- Outputs:** One “colorbox” *indicator*.

Your final program may not use any Color Box *Constants*, nor any “Select” nodes. But, you might add these in as temporary place-holders while you figure everything else out.

The “Active” button should enable/disable the three knobs. The knobs should each control a “component” of the color displayed in the Color Box Indicator (red, green, and blue). The knobs should have appropriately shaded ramps. The knobs should change color according to their individual outputs (e.g., the red knob should become more red as its value increases; the blue knob should become more blue, etc.). The knobs should accept only integer values between 0 and 255, but their visible limits should be 0 to 300. Hint: some colors are best controlled by using the property *menu* for the object, some are best controlled by property *nodes*, and others are best controlled by the old-fashioned paintbrush.

The Color Box Indicator should show the composite of all 3 color components. The Boolean Text of the “active” button should be red when it is “disabled”, and green when it is “active” (this will be hard because of the first sentence, above). This button should always initialize to “disabled” when the program is run, and the three knobs should all initialize to zero.

If the output of the three knobs are R , G , and B , and the final output color is C , determine an equation for C in terms of R , G , and B . Write that equation in a note on your wiring diagram. You will need to use science (that is, perform some experiments where you record R , G , B and C , and look for patterns).

Your name must appear on your front panel.

My solution does not use a single CASE structure, but you are permitted to use one.

Your front panel might look like this:

