1. Prepare a VI featuring 2 switch controls. Connect a LED indicator to them in a way that the LED lights up only if one of the switches is ON (TRUE) and the other is OFF (FALSE). No need to use a loop.
2. Prepare a VI which calculates and displays the discriminant value of a quadratic function, and using a LED indicator signals if it is larger than zero. A seconf LED indicator should light up only if the value is smaller than zero.

   Quadratic function: $f(x) = ax^2 + bx + c$

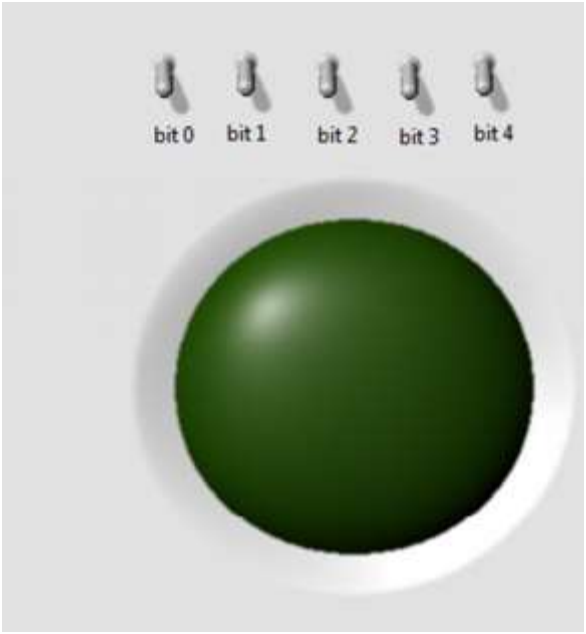
   Inputs: 3 numeric controls representing the a, b and c coefficients

   Outputs: 1 numeric indicatorfor the result

   2 LED indicators

   Discriminant is calculated as $D = b^2 - 4ac$

3. Prepare a VI which uses 5 switches representing the bits of a binary number. The VI checks if the user input number is equal to the binary representation set using tthe switches.



Hint – checkout the *Highlight execution* option when running the program

4. Prepare a VI which calculates and displays the roots of a quadratic function only if those roots are complex conjugates. The initial parameters are same as in the 2. assignment. You have to calculate the roots using:

$$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

,

and provide 4 numeric indicators for the real and imaginary parts of the equation roots. If the roots don't meet the previous criteria they are not displayed.