1. Count the number of times switch #5 goes from "0" to "1" in r2 and display this on the red LEDs.

2. a) Given a value in *r6* between 0 and 9, compute the associated 8-bit pattern for the 7-segment display in *r2*.
   b) Write subroutine **digit2seg7**(**Xin**,**Yin**) to return **Xout**, **Yout**. The **X** values are numbers, and the **Y** values are 32-bit patterns intended the 7-segment display. Compute **Xout = Xin ÷ 10** with remainder **R**. For **Yout**, shift the current display (**Yin**) right by 1 "display position" and put the pattern for **R** in the HEX3 position.