Write a complete Nios II program to control a 'screen saver' for your DE1.

- Initially, turn ON all red LEDs. Have the DE1 count down from some large number (say, 500,000,000). You do not need to use the precise hardware counter, just counting in a loop is fine.
- If the count reaches 0, activate the screen saver by turning OFF all red LEDs.
- Any time the user moves *any* switch from its previous setting, disable the screen saver by turning ON all red LEDs, and reset the count to 500,000,000.

Write a complete Nios II program to control a safe combination lock with your DE1.

- Initially, all LEDs should be off and the safe should be locked.
- The user enters the combination (initially: 0x3ff) using the switches (SW9 to SW0). As soon as they match, unlock the safe by turning ON all green LEDs.
- The lock should remain open, even if the user changes the switches.
- When KEY3 is pressed (goes to 0), lock the safe by turning OFF all green LEDs, and **remember the new combination** on SW9 to SW0. Do not allow the user to unlock the safe until at least one of the switches have changed away from the new combination.