

**EE 308 – LAB 2****ASSEMBLY LANGUAGE PROGRAMMING AND 9S12 PORTS (WEEK 3)****Pre-Lab****Things to do before the lab:**

1. Draw a flow chart for the program. Start with the top-level design, showing how you will use the DIP switches to determine which pattern to display.
2. Write code to read Port H, and mask out all but the two least significant bits.
3. Write the code to implement the binary up-counter. Make sure you read the count to display out of a variable in memory, and update that variable when you update the count, so your program will pick up where it left off after switching back from another pattern.
4. Write the code to implement the Gray code counter. Use another variable in memory to hold the current binary count, and write code to convert the binary count to a Gray code as discussed in the lab.
5. Write the code to implement the Johnson counter. Use a third variable in memory to hold the current count, and use the method discussed in the lab to generate the next count from the current count.
6. Write the code to implement the TBird style turn signal. Put the pattern into a table in memory, and use a fourth variable to hold the index of the pattern to display. Increment this counter, and reset the counter to zero when you reach the end of the table.
7. Integrate the four functions into a single program using the flow chart from Part 1 as a guide.