Lab 6 – SPI & 7-Segment Display

CSE 479 – Advanced Embedded Systems
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Program Overview:

Description:

The 7-segment display on the Alice EduBase Board can be controlled via the Tiva C-Series's Serial Peripheral Interface (SPI). 16-bit data packets are sent to 2 daisy chained HCT595 shift registers that select which segments are being display. By rapidly strobing between segments, the *SPI_7_Seg* routine can take a 4-digit input and uses the SPI to display the appropriate segments. The strobing is achieved by a general-purpose timer that goes off every 10,000 clock ticks. This gives each segment enough time to properly light up while also allowing all segments to strobe quickly enough that it appears as though all segments are being displayed at the same time. The routine is described by the following flow chart: