IET Winter 2016
Embedded Systems Design
LAB 8

Objective:

At completion of the lab, student will be able to:

1. Get basic understanding of 7 segment display.
2. Understand 7 segment interfacing with Atmega32.

Components Required for the Lab:

1. EasyAvr7 from MikroElectronika
2. USB cable for programming Atmega 32

LAB -8 Resources:

1. Atmega 32 Datasheet *
2. EasyAvr7 manual
3. Basics of 7 segment
4. Example Programs

Some useful Registers for this lab:

Use as required.

Lab Assignment:

Write and test following programs:

1. Write a program to display hexadecimal values (0-F) in loop with 1 second of delay at single 7 Segment. Once 'F' is reached the display will roll back to 0.

(To differentiate 8 & B and 0 & D you may use decimal point of seven segment display or use 'b' and 'd' respectively.)

2. 4- Digit Counter Display

Write a program that counts and display the number of visitors at IET through 4- Seven Segment display. The doorkeeper presses the push button every time a new visitor enters. The count value is displayed at the dean's office in Seven Segments.

3. 4 – Digit Fibonacci Series Display

Write a program that calculates and displays the Fibonacci series at 0.5second interval.

4. **Digital Clock**

Write a program that displays HH.MM of a digital clock. The last digit's decimal point (dp) will be blinking and thus indicating seconds. You may initialize clock in your program.

Since we are very particular about our timings, we will be using Military Timings (24 hour clock). ☺