PWM-Drawer

By Mohamed Ali Obaya

Outline

- PWM
- Simulation
- Code

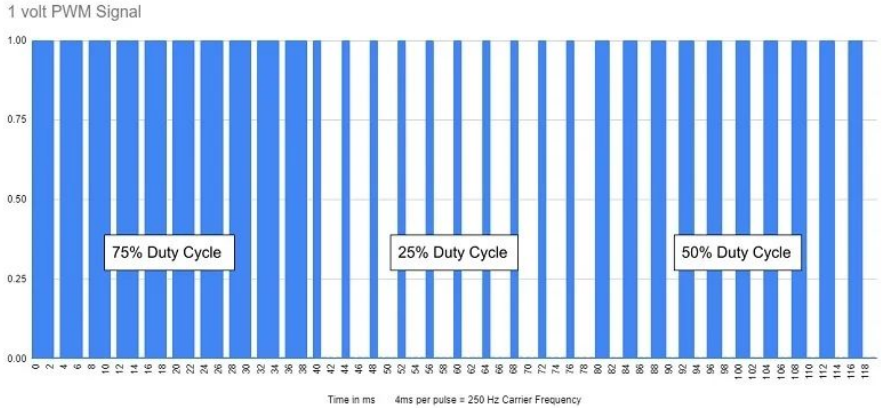
PWM

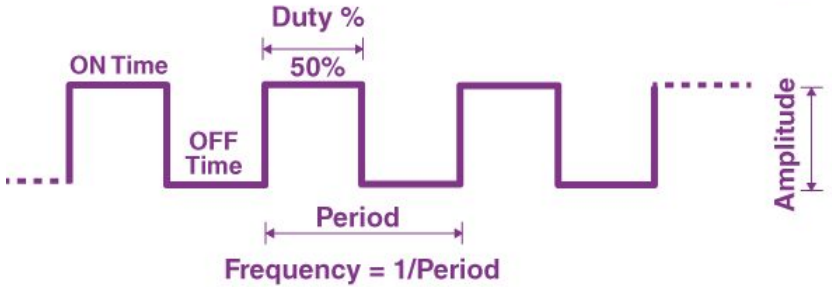
PWM

- What's PWM ?
- Problem Statement
- Reduction of electrical power supply
- Carrier Frequency
- Duty Cycle

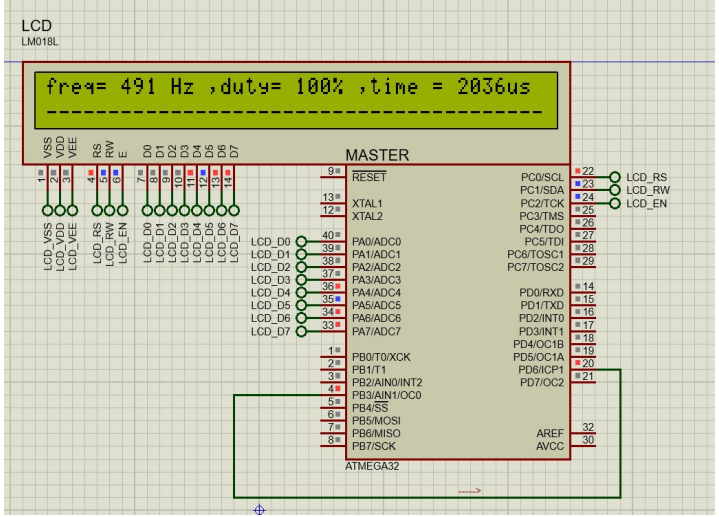
$$Duty\ Cycle = \frac{Time_{on}}{Periodic\ Time} \times 100$$

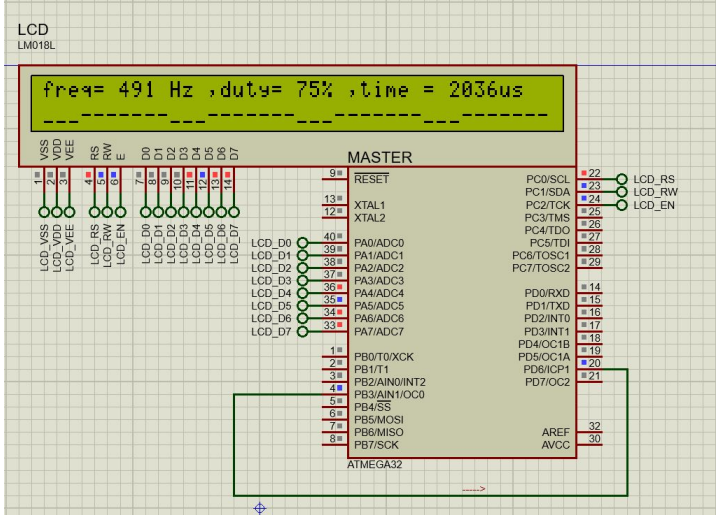
$$Voltage_{equivalent} = Duty\ Cycle * Voltage_{actual}$$

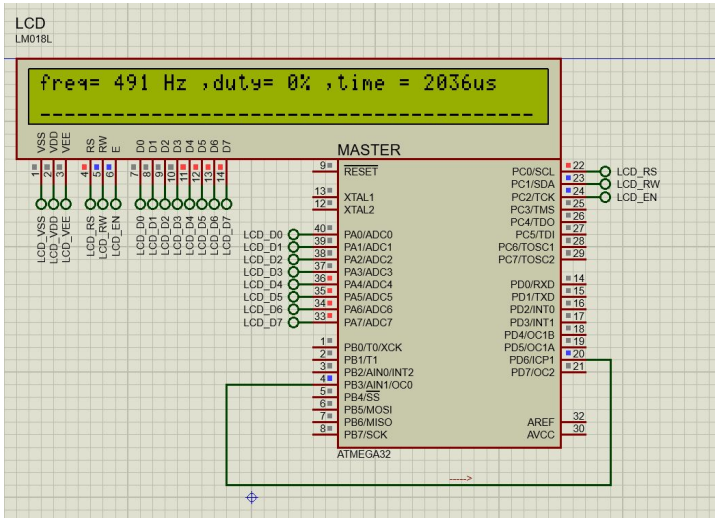


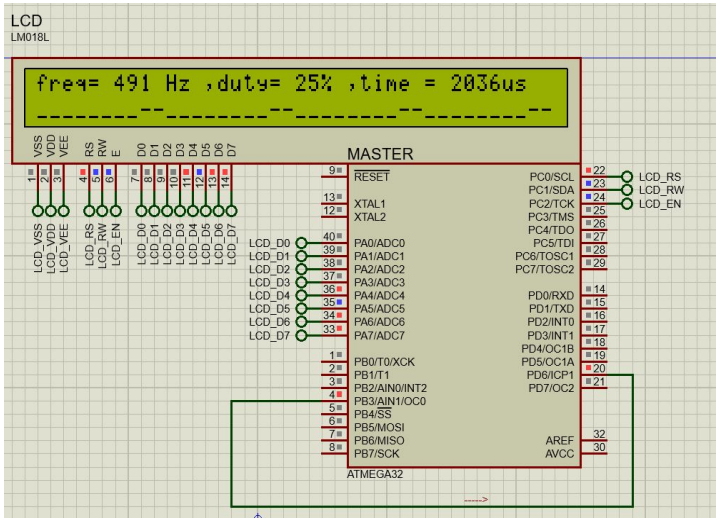


Simulation

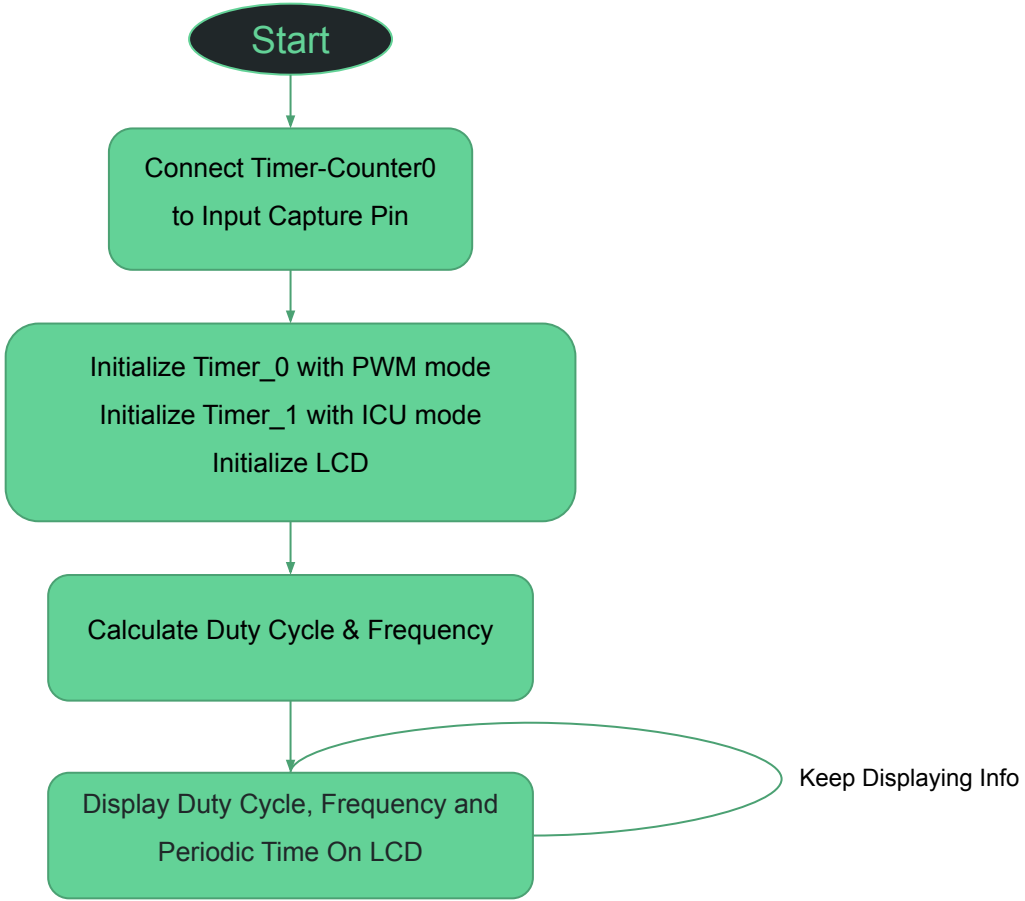

LCD
LM018L
freq= 491 Hz ,duty= 100% ,time = 2036us
MASTER
ATMEGA32


LCD
LM018L
freq= 491 Hz ,duty= 75% ,time = 2036us
MASTER
ATMEGA32


LCD
LM018L
freq= 491 Hz ,duty= 0% ,time = 2036us
MASTER
ATMEGA32


LCD
LM018L
freq= 491 Hz ,duty= 25% ,time = 2036us
MASTER
ATMEGA32

Code


Start
Connect Timer-Counter0
to Input Capture Pin
Initialize Timer_0 with PWM mode
Initialize Timer_1 with ICU mode
Initialize LCD
Calculate Duty Cycle & Frequency
Display Duty Cycle, Frequency and
Periodic Time On LCD
Keep Displaying Info

Thank You