Timers related exercises

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Toggle a pin at *exactly* 100us using TMR1 polling

- Algo
  - Configure output pin
  - Configure T1CON
  - Load TMR1 with aprox. 65535 – 400 (assuming a 4 MHz clock + PLL)
  - In a loop, test for overflow (TMR1IF = 1)
    - No: go back and wait
    - Yes: clear TMR1IF; reinitialize the TMR1 with aprox. 65535 – 400; pin toggle
  - Keep on looping

Toggle a pin at *exactly* 100us using TMR1 and interrupts

- Algo
  - Configure interrupts (INTCON + TMR1 related registers)
  - Configure output pin
  - Configure T1CON
  - Load TMR1 with aprox. 65535 – 400 (assuming a 4 MHz clock + PLL)
  - In a loop, do whatever you like

  - In the ISR,
    - test for overflow (TMR1IF = 1)
    - clear TMR1IF; reinitialize the TMR1 with aprox. 65535 – 400; pin toggle

Generate 1 second ticks with TMR1 and polling

- A 2nd XTAL is used, 32768 Hz = 2^15 Hz
- Configure TMR1 via T1CON
- Load TMR1 with 0x8000 (1/2)
- In a loop test for TMR1IF = 1 (overflow)
  - No: loop back
  - Yes: Clear TMR1IF, Load TMR1 with 0x8000 (1/2), toggle pin

- A stimulus must be configured!

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- ISR:
  - test for TMR1IF = 1 (overflow)
  - Clear TMR1IF, Load TMR1 with 0x8000 (1/2), toggle pin

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