ECE 376 - Homework #10

Timer1 Capture & Compare - Due Monday, April 14th

Timer1 Compare

1) Write a C program to output

- 220.000Hz on RC1 and
- 222.000Hz on RC2

Connect each pin to a speaker and see if you can tell the difference in frequency.

2) Write a C program to output

- 220.000Hz on RC1 and
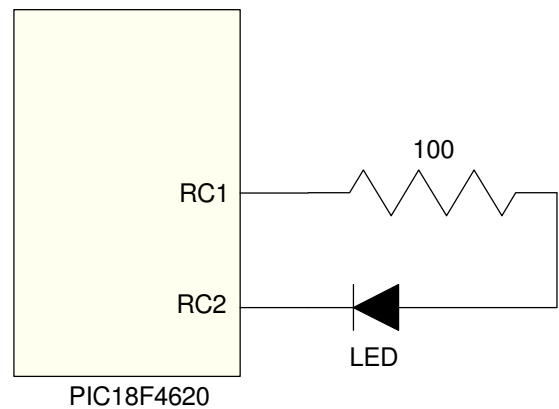- 220.100Hz on RC2

Connect each pin to a speaker and see if you can tell the difference in frequency.

3) Connect an LED between RC1 and RC2 along with a 100 Ohm resistor.

- Describe what you see
- Explain why this is happening

4) Flip the direction of the LED

- Describe what you see
- Explain why this is happening

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Timer1 Capture

5) Write a C program to measure the period of a square wave with a resolution of 100ns

Give the resulting C code and resulting code size

6) With your C program, measure the period (or frequency) of

- A 220.000Hz square wave, and a
- A 220.100Hz square wave

generated using Timer1 Compare interrupts (problem #1).

Can you tell the difference using Timer1 Capture?