# CPE 301: Homework #9

Due on April 12, 2019 at 9:00am

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# Problem 1

Description of Purpose:
Homework 5 has us working with interupts and how they work. Only after being to identify an interupts function, we can see how it works on the ATmega2560. Turning the interupt on and off is most likley one of the important features learn in this homework as I'm sure it lines up with a lab.

What is the purpose of an interrupt?

**Solution**
Interrupt is defined as it's a signal which is generated from devices joined to a pc or from a program inside the PC that requires the working framework to interrupt it and make sense of what to do next.

# Problem 2

Describe the flow of events when an interrupt occurs.

**Solution**

# Problem 3

Describe the interrupt features available with the Atmega328P.

**Solution**

# Problem 4

What is interrupt priority? How is it determined?

**Solution**

beginhomeworkProblem

What steps are required by the system designer to properly configure an interrupt?

**Solution**

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How is the interrupt system turned "on" and "off"?

**Solution**

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Write a program to set up timer1 using NORMAL mode so that it generates an interrupt in exactly 1/8 of a second. Write an interrupt service routine (ISR), triggered by the timer interrupt TOV1 that stops, resets, and restarts the timer and toggles the Arduino Mega LED each time it is called. This will produce a light that blinks 4 times/sec.

**Solution**

# Problem 8

Write a program to set up timer1 using NORMAL mode so that it generates an interrupt in exactly 1/8 of a second. Write an interrupt service routine (ISR), triggered by the timer interrupt TOV1 that stops, resets, and restarts the timer and toggles the Arduino Mega LED each time it is called. This will produce a light that blinks 4 times/sec.

**Solution** Interrupt is defined as it's a signal which is generated from devices joined to a pc or from a program inside the PC that requires the working framework to interrupt it and make sense of what to do next.

**Solution**