Project 2: Pulse-Width Modulation
Questions?
Project 1

• Finish today
• Catme surveys are due on Tuesday
  • Everyone should have received email already
  • Without the survey, you will not receive a grade
Project 1

What are the lessons?
Project 1

What are the lessons?
• LED direction matters
• A resistance must be in series with an LED
• Follow the specification
Project 1

What are the lessons?

• Code modularity
  • Small bite-sized chunk easier to code, test and communicate
  • If designed right, a function will be useful in other contexts

• Functional modularity
  • One function responsible for manipulating the pins for one display (and no more)
Project 2: Pulse-Width Modulation

• This week: LED control
• Next week (project 3): fan control
Component 1: Circuit

• Identify a timer to use (x=1,3,4 or 5)
• Wire in 3 temporary LEDs to OCxA, OCxB ad OCxC (through resistors)
Component 2: Interface Functions

int16_t clip(int16_t value, int16_t min_value, int16_t max_value)

void set_led0_magnitude(int16_t magnitude)
void set_led1_magnitude(int16_t magnitude)
void set_led2_magnitude(int16_t magnitude)
Component 3: Test Function

main():

• Ramp the LED magnitudes up and down slowly
• The LED patterns must not be completely synchronized
Notes

• Make sure that each function that you implement does exactly what the specification says & no more

• Subversion server should be up soon
Next Time

Project 2: Digital-to-Analog conversion