

# Arduino Input and Output

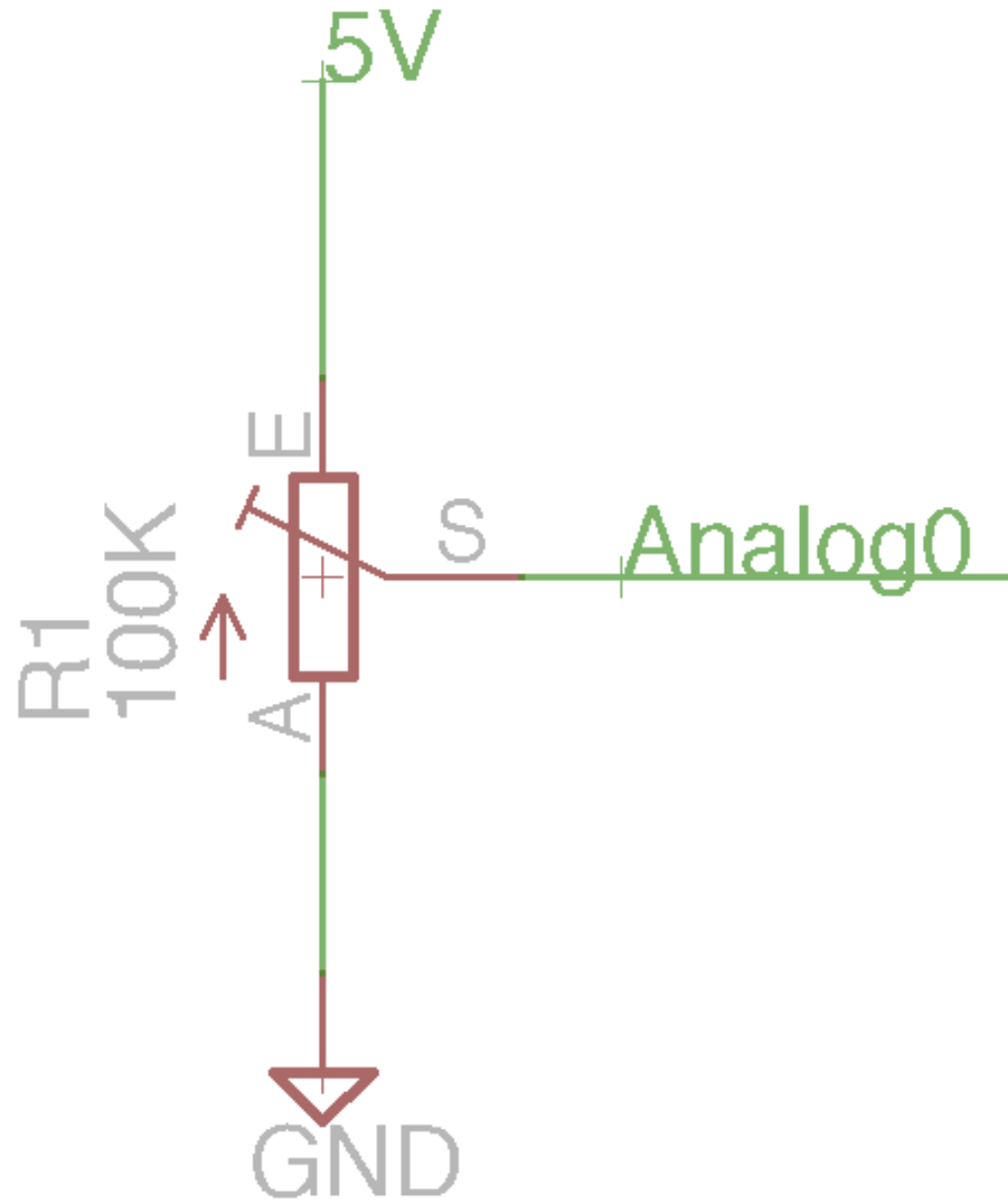


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2010 December 5  
2:00-4:00 PM

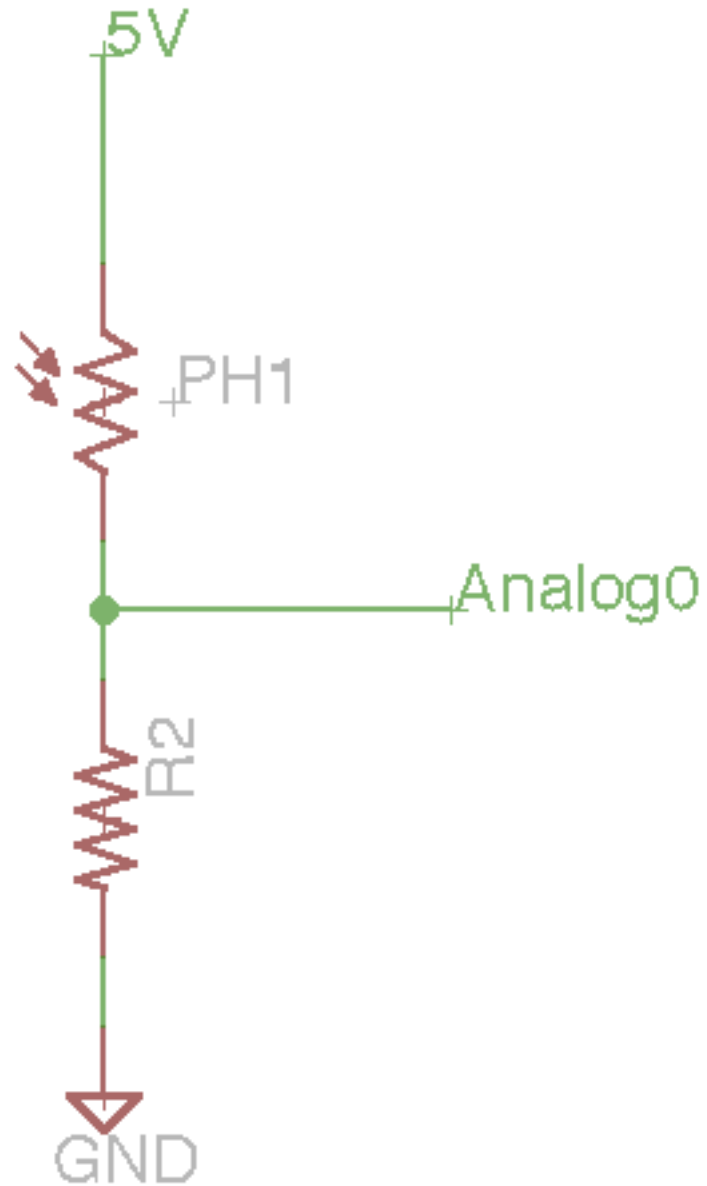
# Today we'll be covering:

- Analog Input
- PWM
- LED brightness
- Servos
- Transistors

# Analog Input



# Simple Sensors



# PWM

Create a time averaged analog value by pulsing a digital value

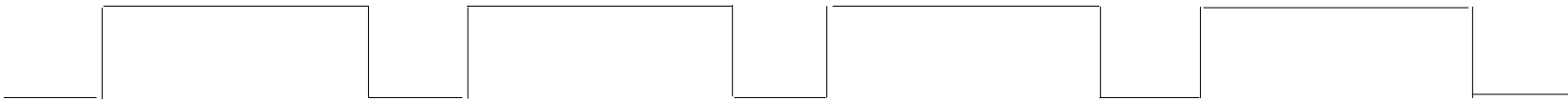
**25% duty cycle: average 1.25V**



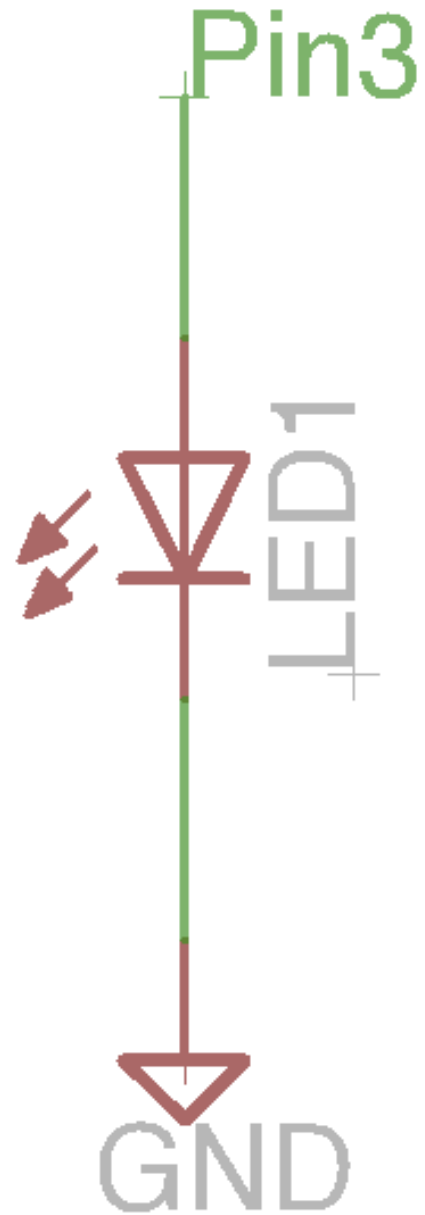
**50% duty cycle: average 2.5V**



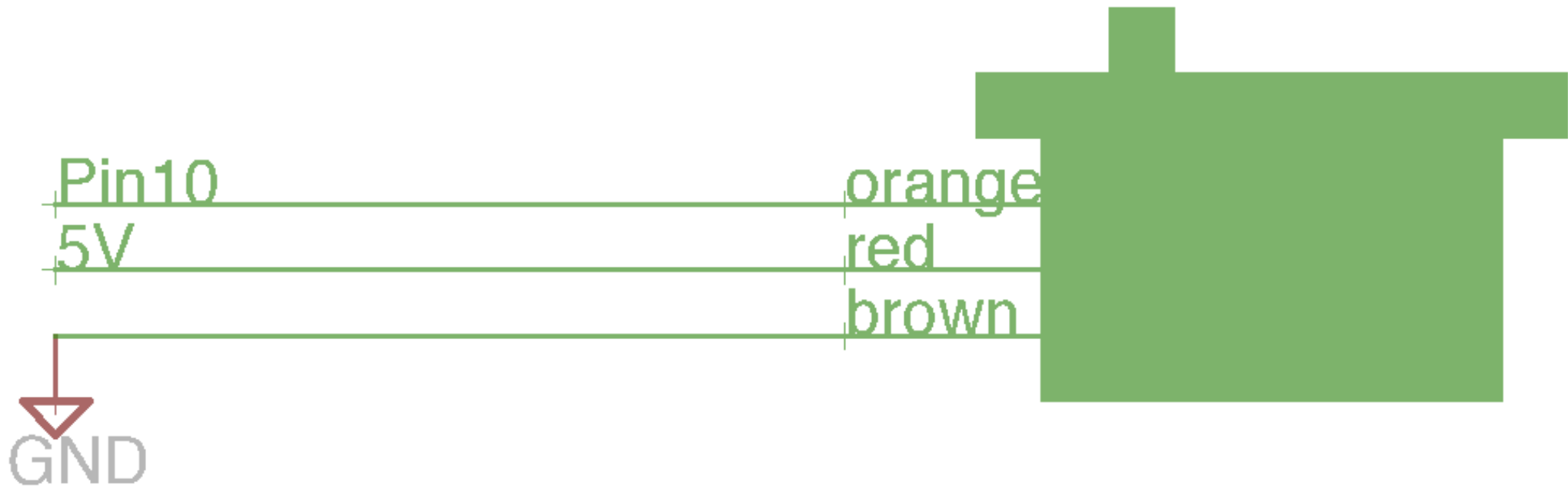
**75% duty cycle: average 3.75V**



# LED brightness



# Servos





# What are transistors?



# NPN Transistor switch

