ASCENDAS SYSTEMS

Arduino and Simulink Workshop

- Phitcha Phitchayanon
- Application Engineer

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Agenda

- Getting start with Arduino hardware
- Example programme Arduino on MATLAB
- Example programme Arduino on Simulink
- Tutorial – Traffic light

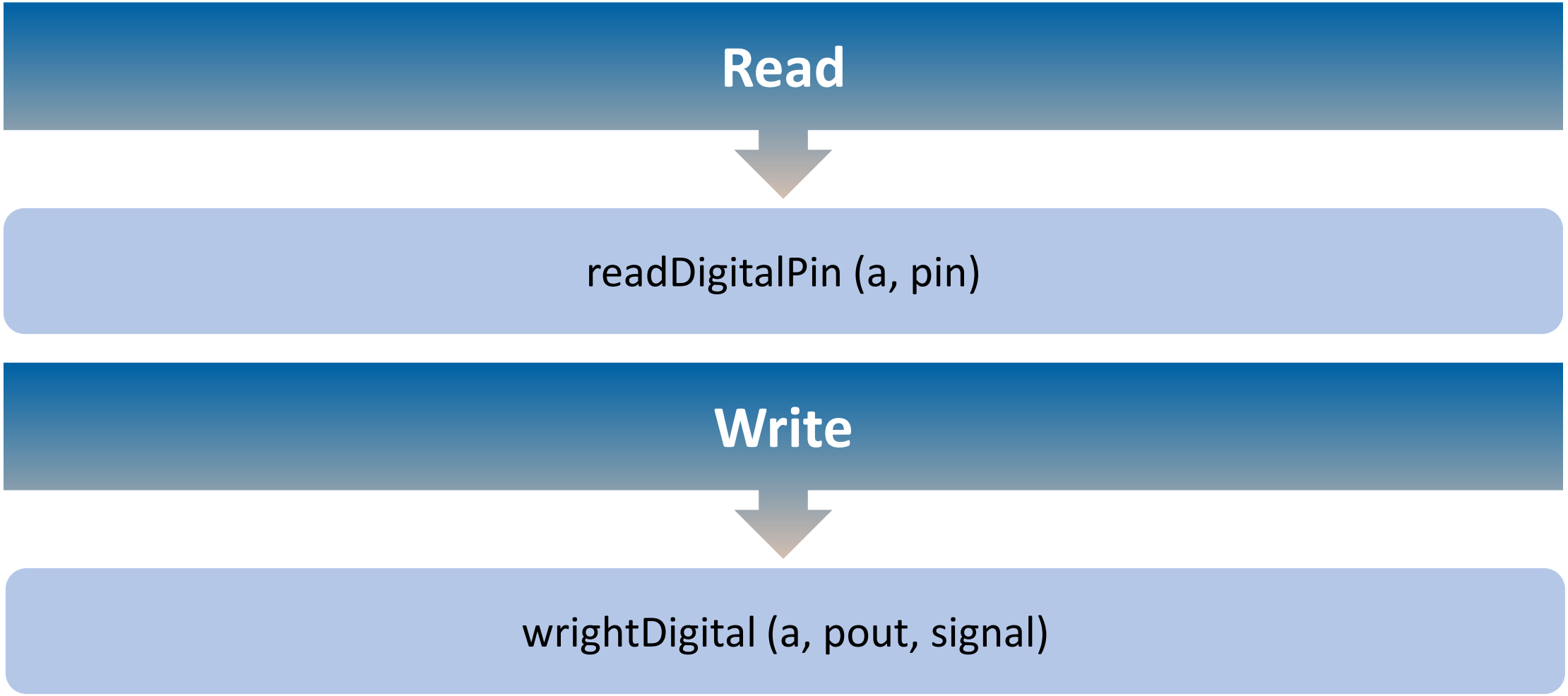
Getting started

List of Components

To run this example you will need the following hardware:

- Supported Arduino board
- USB cable
- LED
- 220 Ohm resistor
- Breadboard wires
- Small breadboard (recommended)

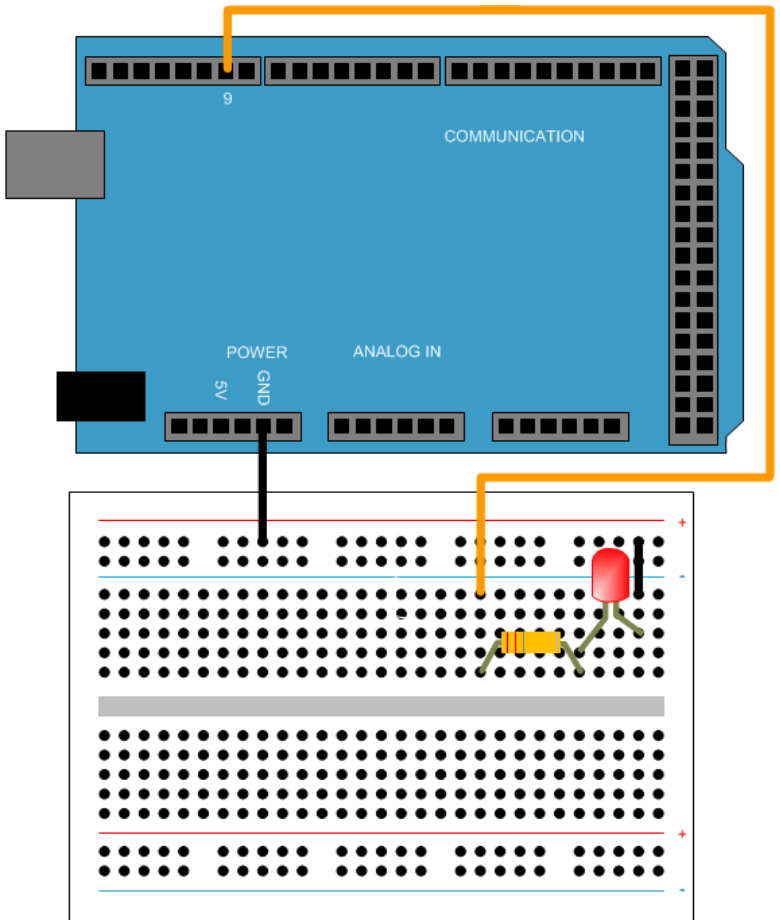
Blink the light on Arduino Uno

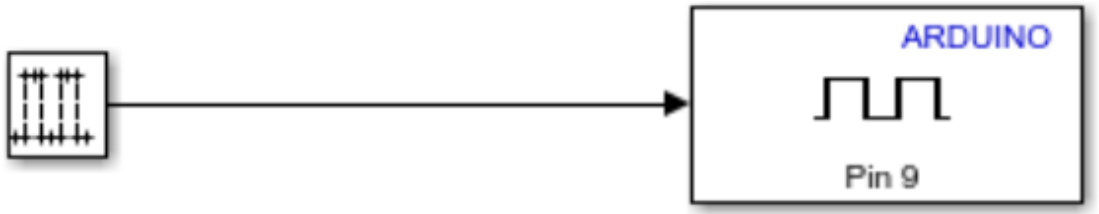


Play a tone on a piezo speaker

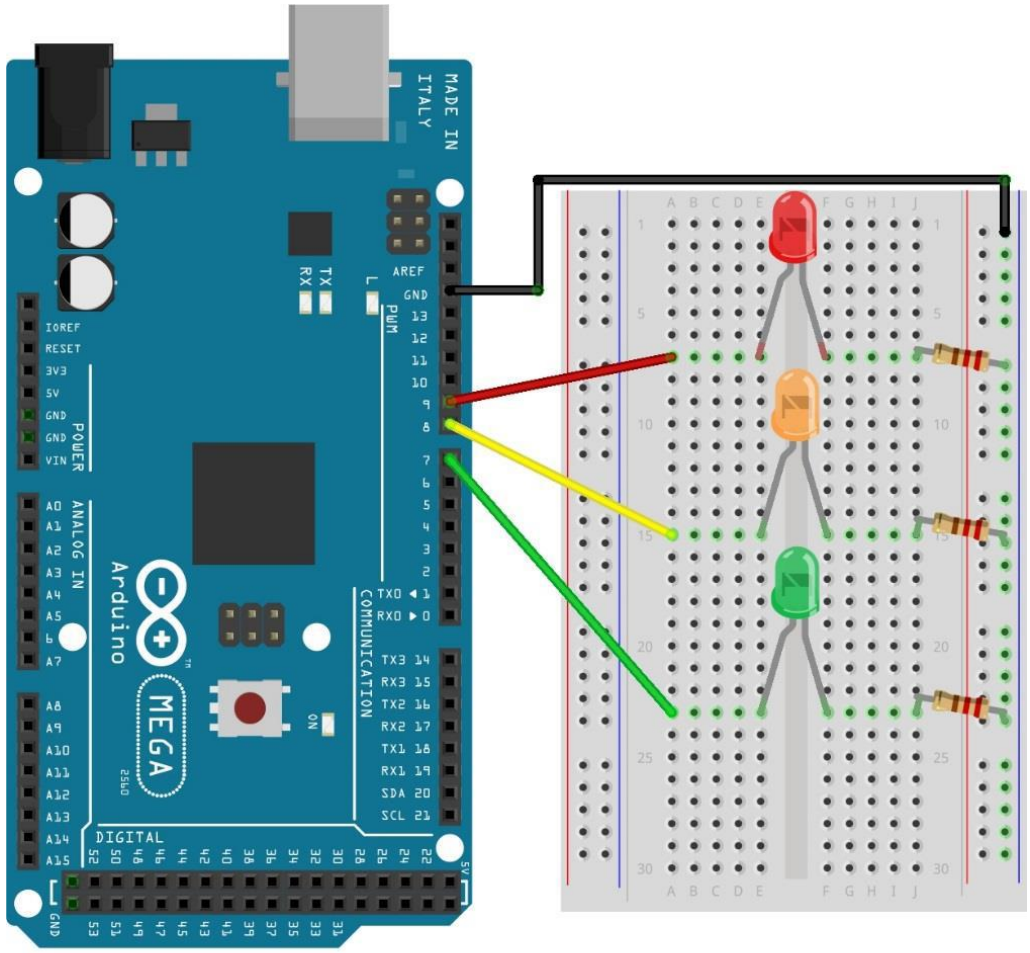
```
% PlayTone
pin = 9;
tune = 'eefggedccdee dd';
beats = [1 1 1 1 1 1 1 1 1 1 1 1 0.5 0.5 2];
notes = {'c','d','e','f','g',''};
freqs = [262 294 330 349 392 0];
for ii = 1:length(tune)
    playTone(a,'D9',freqs(strcmp(tune(ii),notes)),0.2*beats(ii))
    pause(0.2*beats(ii))
end
```

Blink an LED using Simulink blocks





Traffic Light on Arduino using Stateflow



This project models a traffic light switching sequence, which automated as follows:

Red (5 sec)

Yellow (2 sec)

Green (5 sec)

The code initializes first by blinking all three LEDs three times, and then proceeds with the traffic light sequence.

Q&A
WHAT?
WHERE?
WHEN?
HOW?
WHO?
Why?
When?
How?
What?
Where?

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Thank you

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