Arduino Programming I

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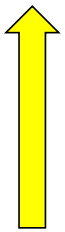
Design architecture of an embedded system

- We have to consider 6 components but not limited to these

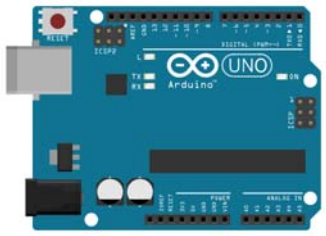
Products

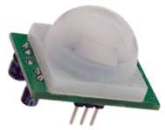


Description	Choices in this course
Abstract idea of project (Define the functionality of the system)	Many
Data format / representation	Many
Programming Language	Many
Communication Protocol	Many
Physical connection (Pins assignment)	Many
Hardware devices (Microcontroller, Peripherals)	Microcontroller: Arduino Board Peripherals: Many

This is the part we have to fill up.

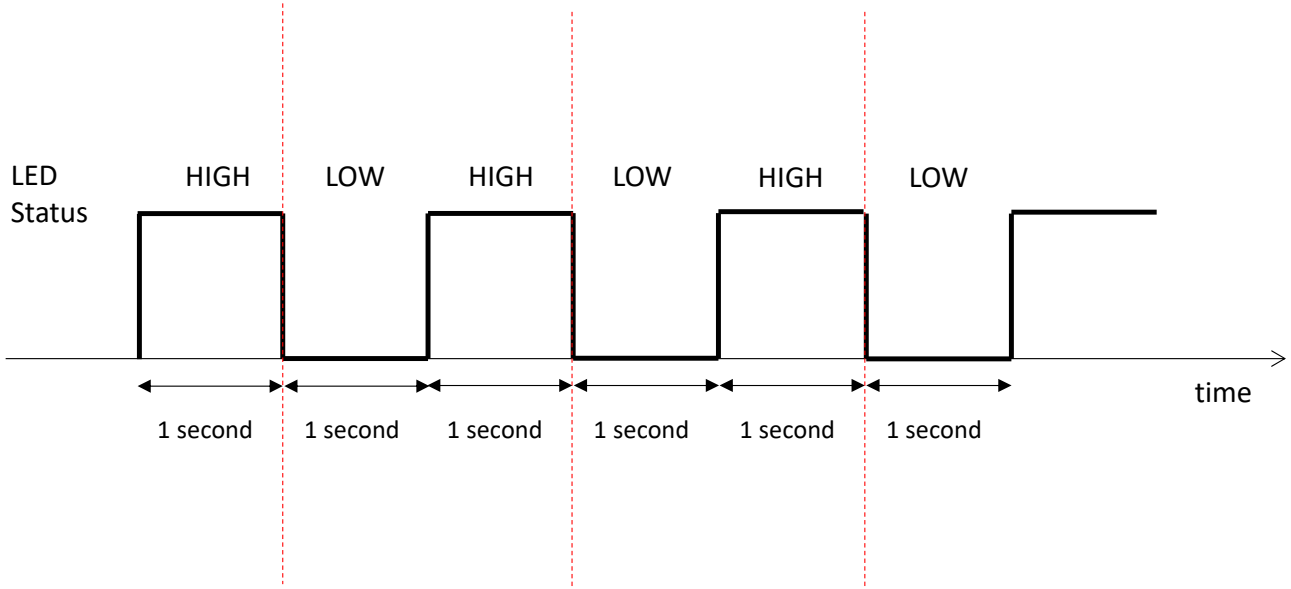
Components



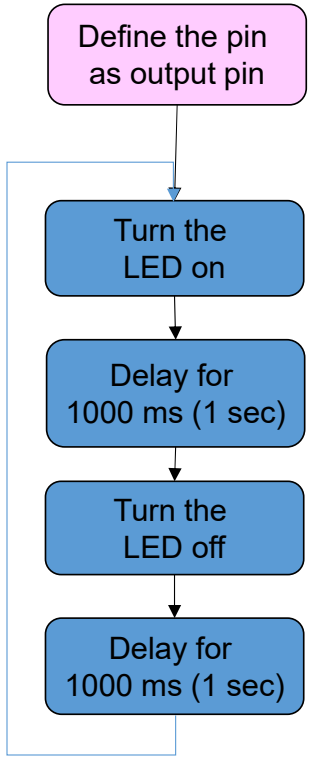


Timing diagram in the modified blinking LED sketch

Its timing diagram is shown as below.

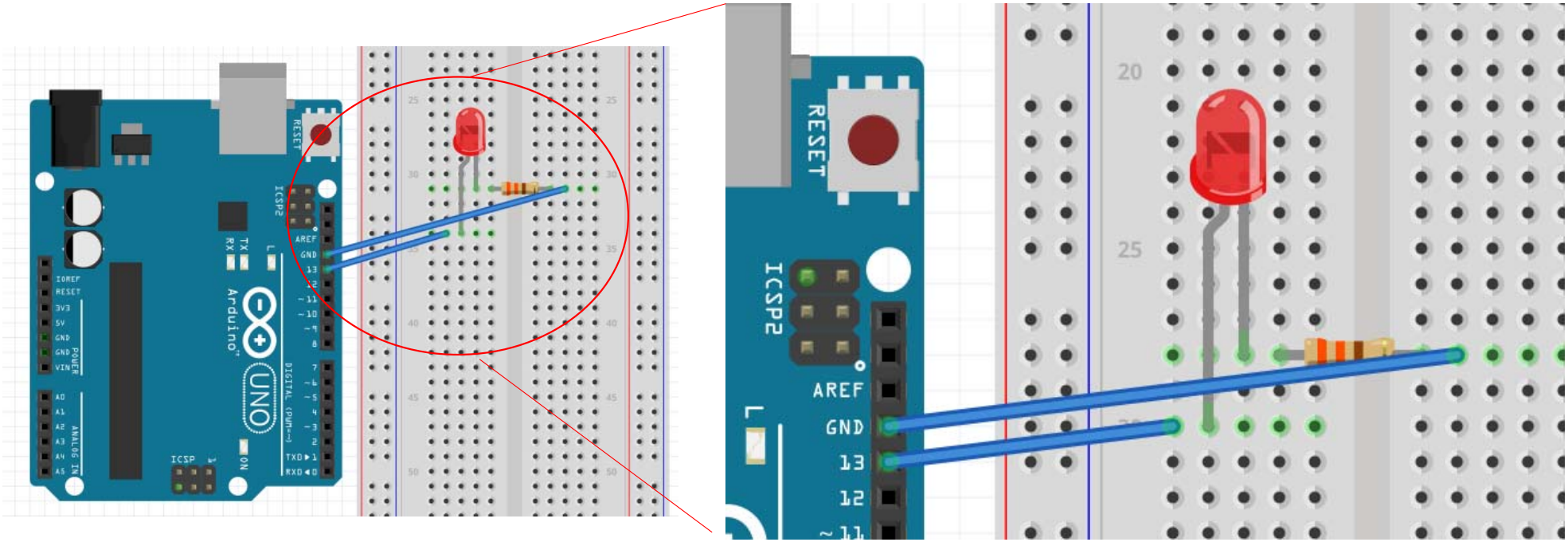


Can you sketch the graph for the average value?



Arduino board with the external devices.

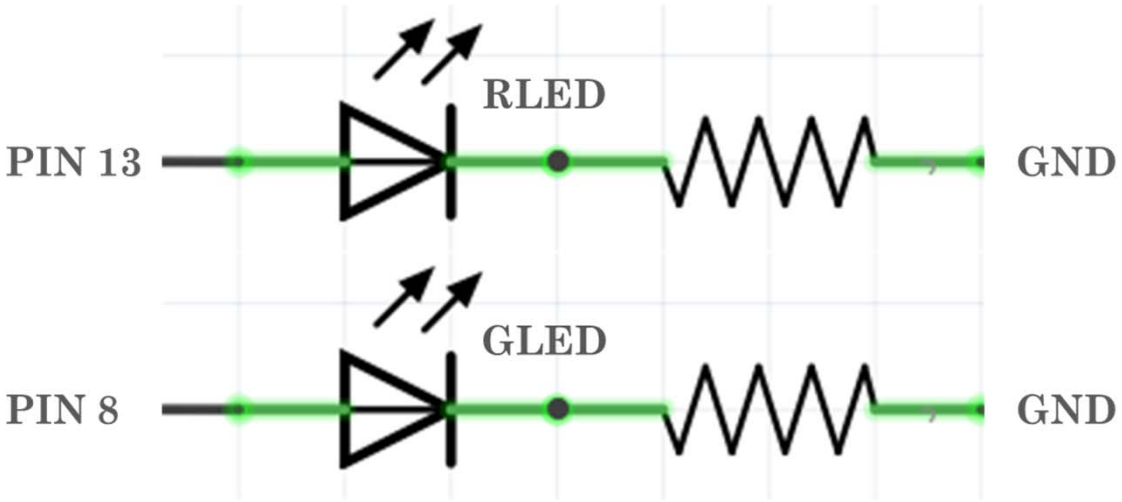
Step 1: Connect the following circuit

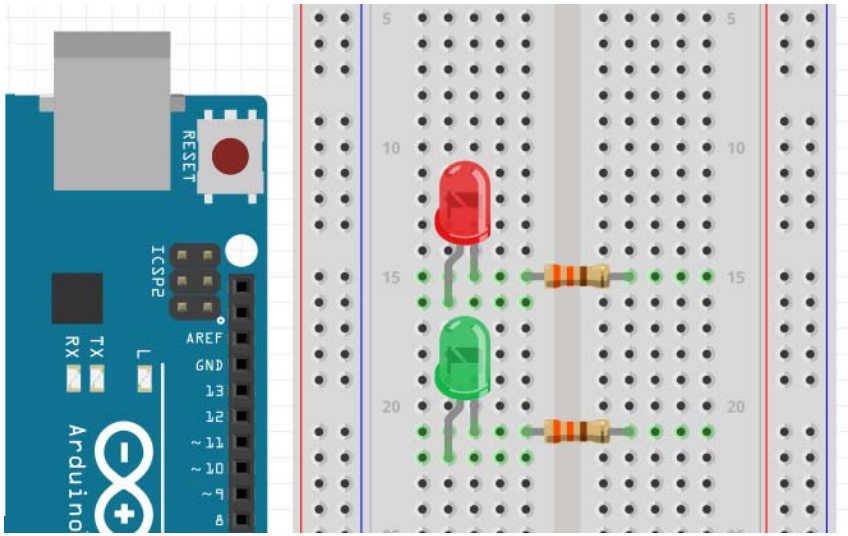


Circuit with two LEDs

If we want to add one more LED, say, pin 8.

What you need to do ?





Pedestrian Light Exercise

You will see pedestrian light everyday.

Can you modify your previous LED sketch to simulate Pedestrian Light ?

Traffic Light Exercise

You will see traffic light everyday.

It consists of Red, Yellow and Green Lights

What is the sequence of lighting ?