

Ardublock

A Graphical Programming Language for Arduino

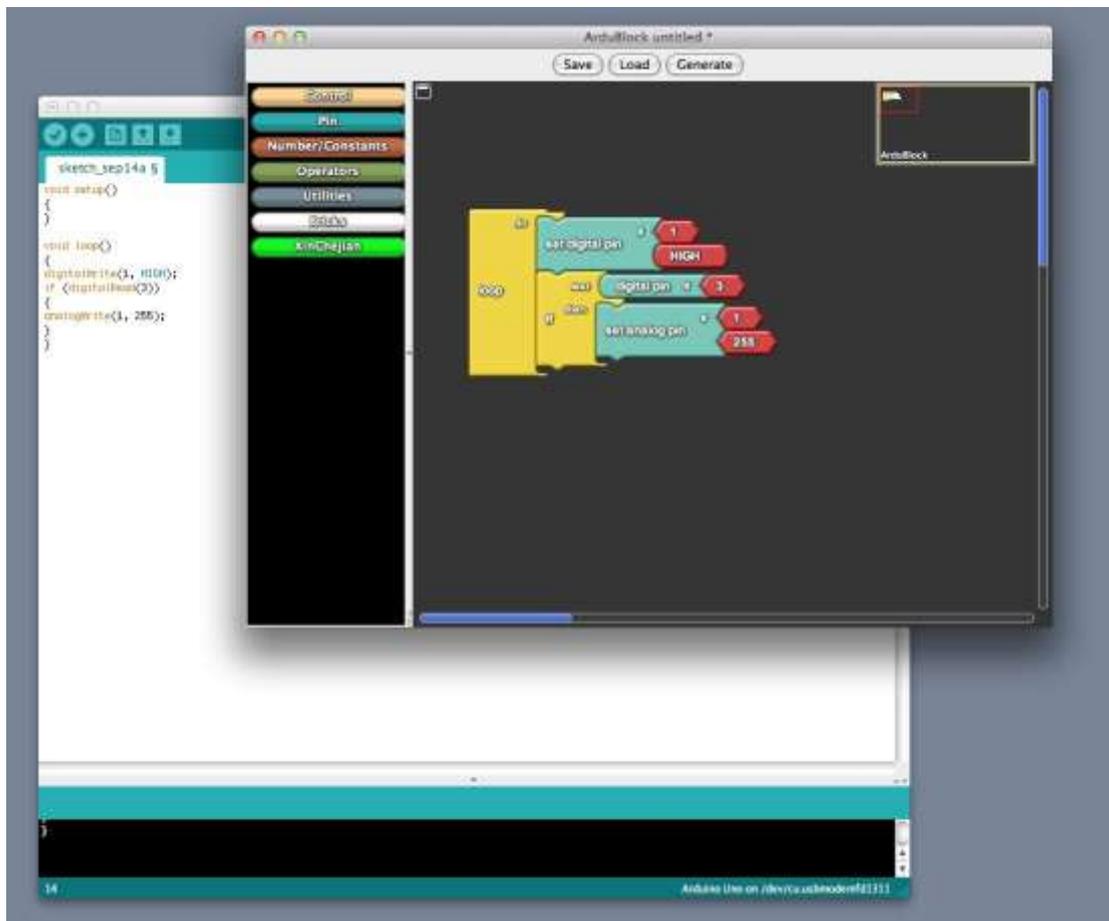
Tutorial for Ardublock Kit

Ver 1.0



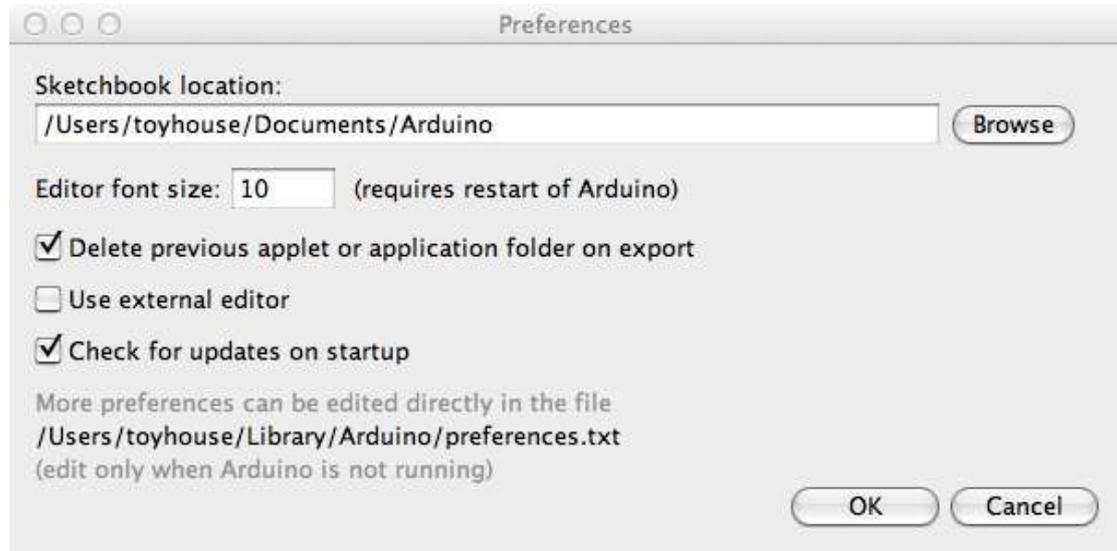
What is Ardublock

Ardublock is a graphical programming language for non-programmers easily using Arduino.



How to install

- 1 Download ardublock-all.jar from [ArduBlock](#)
- 2 Open “Arduino IDE/Menu /Arduino/ Preferences”, then you can get the “Sketchbook location”

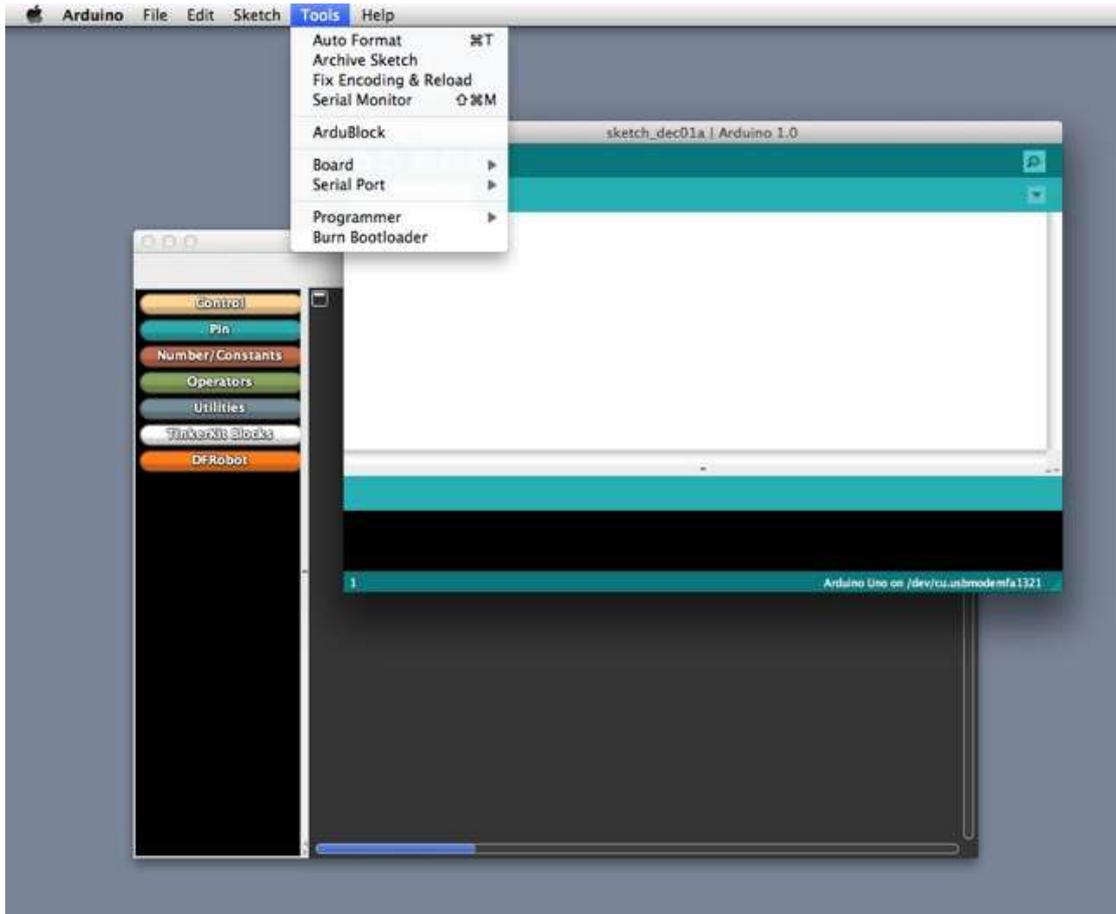


- 3 Create a file path of “tools/ArduBlockTool/tool ” under “Arduino” folder in your “Sketch location” and put “ardublock-all.jar” in “tool” folder.

Assume the user is “abu,”

- In Mac, /Users/abu/Documents/Arduino/tools/ArduBlockTool/tool/ardublock-all.jar
 - In Linux, /home/abu/sketchbook/tools/ArduBlockTool/tool/ardublock-all.jar
 - In Windows, C:\Users\abu\Documents\Arduino
- 4 Restart Arduino IDE and you can find “ArduBlock” in “Tool ”.

Note: Pay attention to captals and small letters of fold names

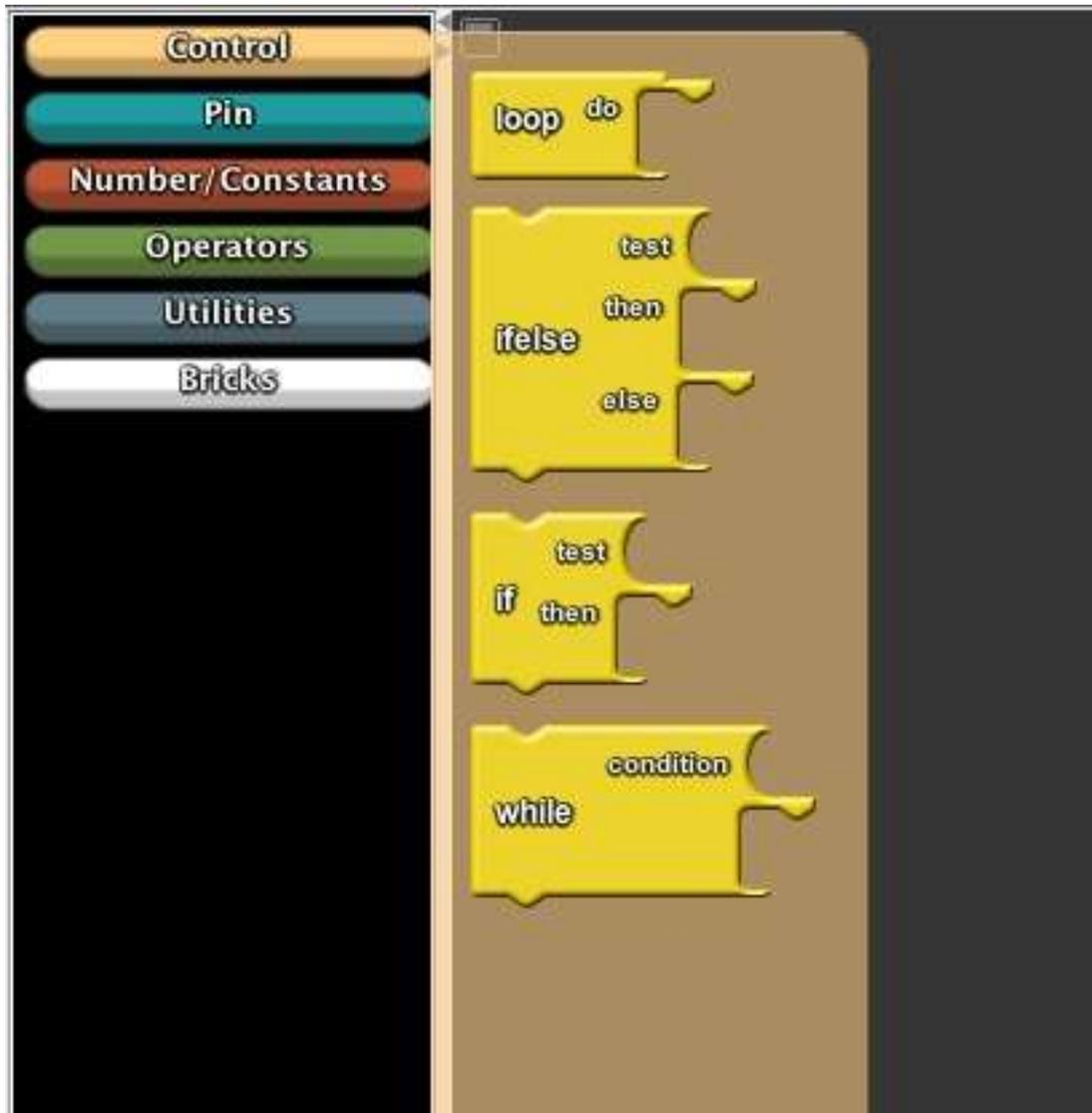


How to use

The drawers of ArduBlock are divided into different categories.

Control

Blocks in “Control” are control structures.



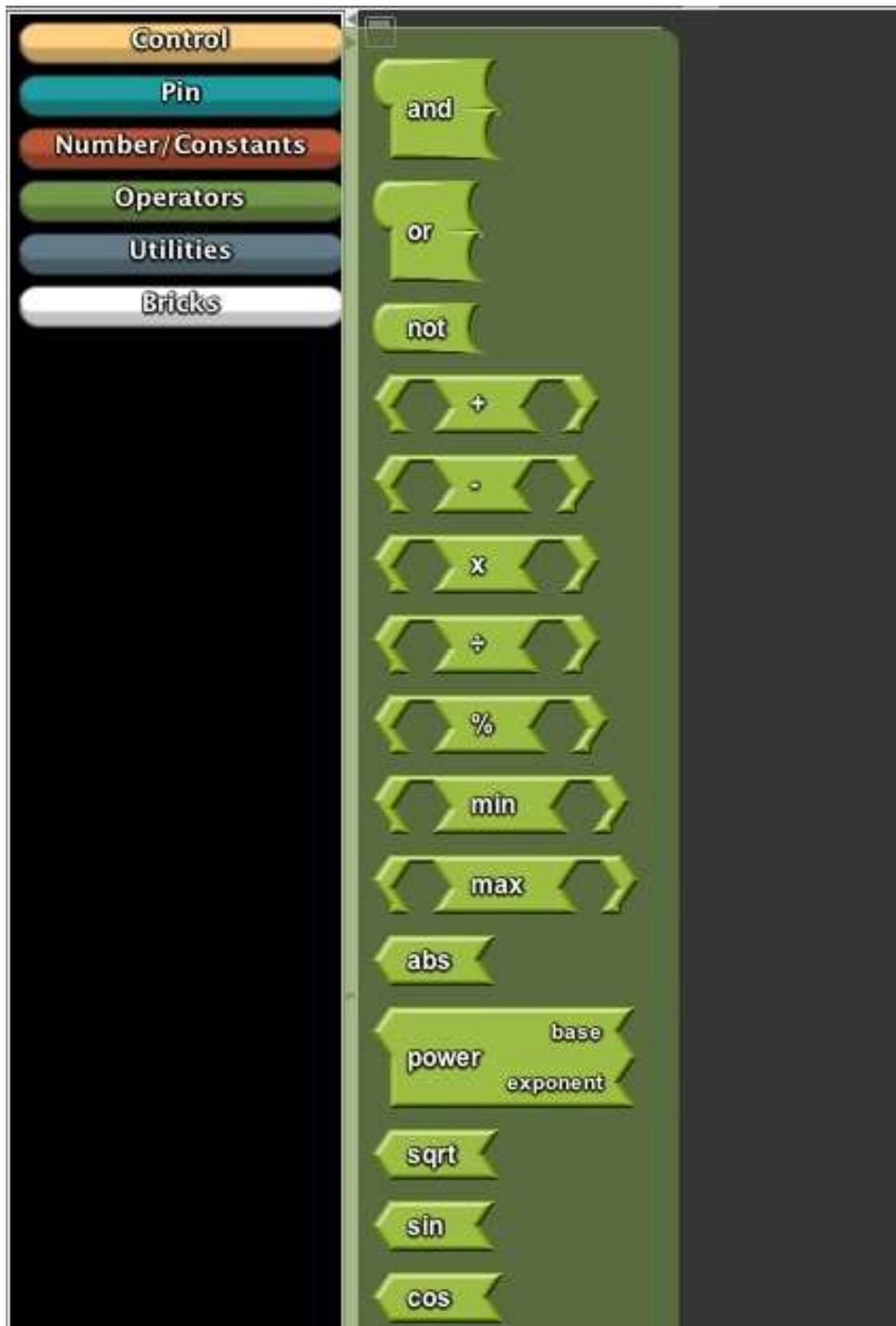
Numbers, Constants and Variables

Blocks in “Numbers/Constants” are variables



Operators

This item includes logical operators and mathematical operators.



Utilities

These blocks are functions commonly used in one sketch.



Bricks

Each block here represents one kind of hardware which can be directly used as a part in your sketch.



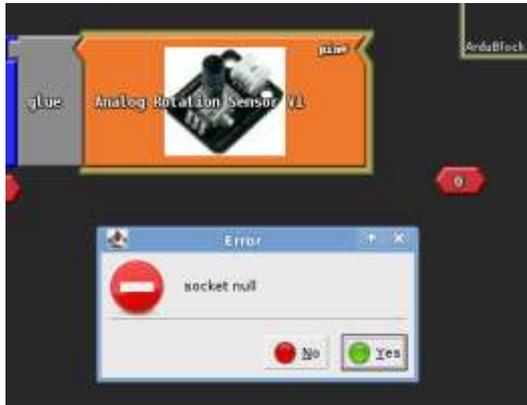
Pin

These blocks act as virtual pins on your Arduino board.



How to program

1. The compilation should succeed if there is no socket of any block available in a sketch. Or error will be shown up.



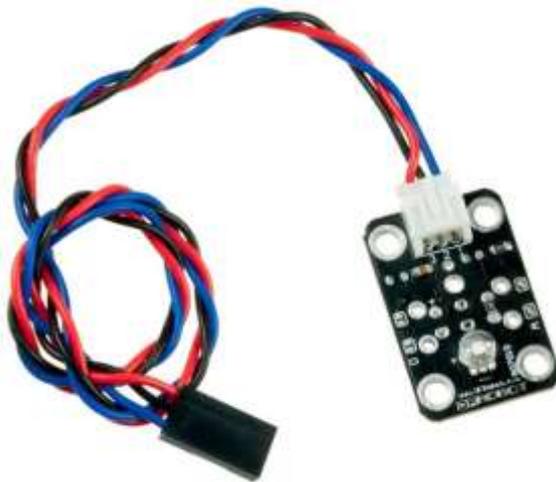
2. Blocks with sockets of the same shape can be connected together. Connection can be easily done by dragging one block and dropping it near the one you want to put together.
3. Once “upload” is clicked, ArduBlock will generate the standard Arduino code which then will be uploaded to your Arduino board.

What is inside of Ardublock Kit

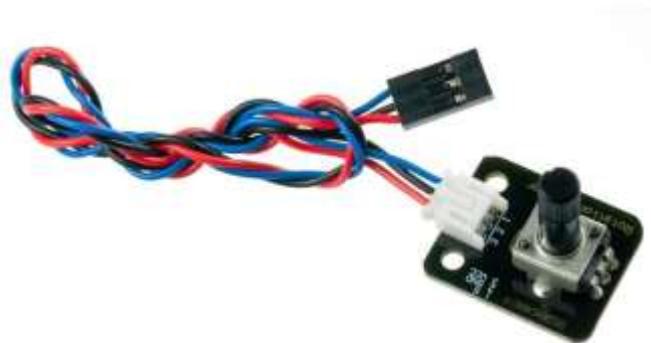
[Adjustable Infrared Sensor Switch](#) SEN0019



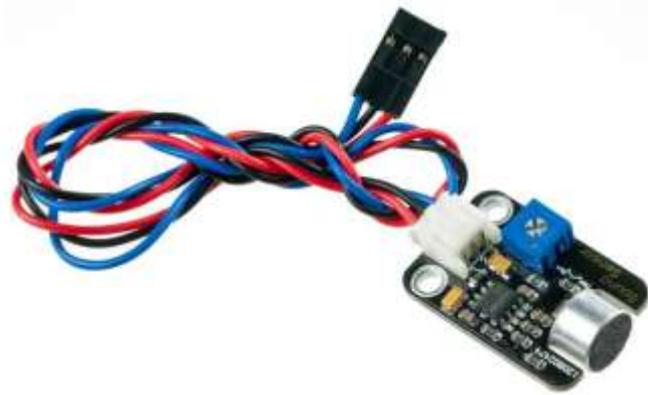
[Analog Ambient Light Sensor](#) DFR0026



[Analog Rotation Sensor V1](#) DFR0054



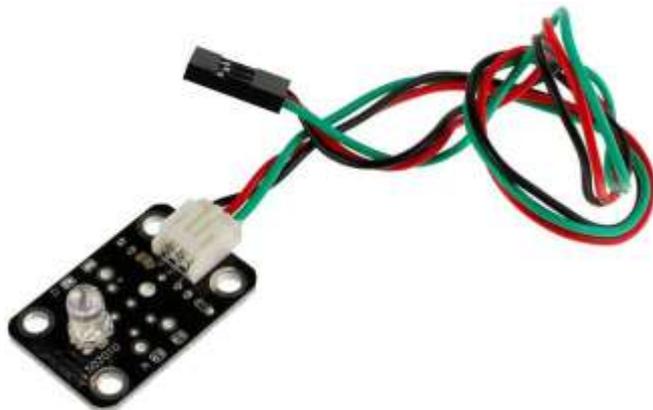
[Analog Sound Sensor](#) DFR0034



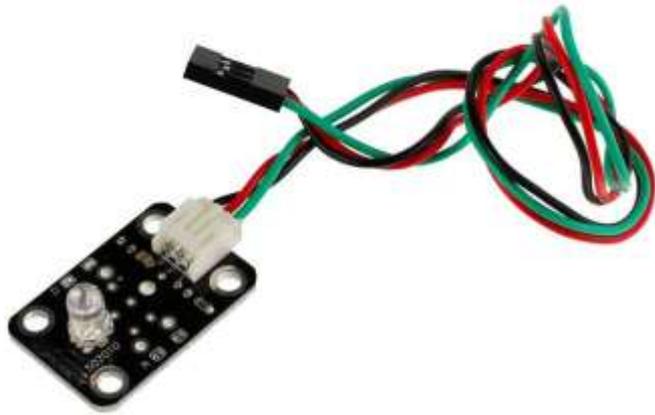
[9g micro servo \(1.6kg\)](#) SER0006



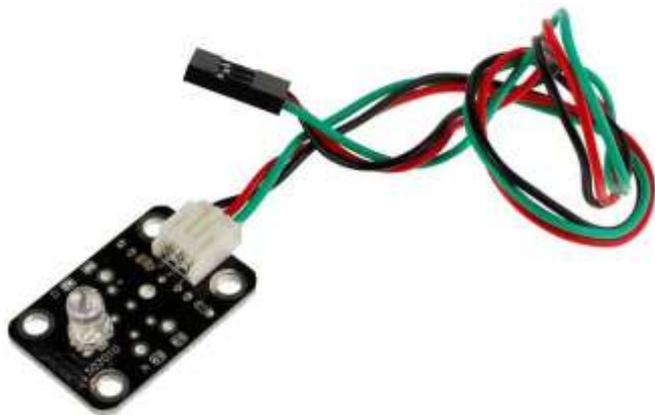
[Digital White LED Light Module](#) DFR0021



[Digital RED LED Light Module](#)DFR0021-R



[Digital Blue LED Light Module](#)DFR0021-B



[Digital Buzzer Module](#) DFR0032



[Digital Push Button](#)DFR0029x2



[DFRduino UNO SMD \(Arduino Compatible\)](#)DFR0122



[IO Expansion Shield For Arduino\(V5\)](#) DFR0088



[USB Cable A-B for Arduino](#) FIT0056



How to use sensor cables

There are different sensors of digital or analog signal output in the Ardublock kit. Digital sensors should be connected to digital pins on Arduino boards through digital sensor cables and analog ones should be connected to analog pins through analog sensor cables. We separate these two cables with different colors.



Digital sensor cable



Analog sensor cable

Each cable includes 3 wires.

In digital sensor cable:

Green wire for Digital Signal (S)

Red wire for Power (VCC)

Black wire for Ground (GND)

In analog sensor cable:

Blue wire for Analog Signal (S)

Red wire for Power (VCC)

Black wire for Ground (GND)

How to play

Simple Output

1 Example 1--Hello World

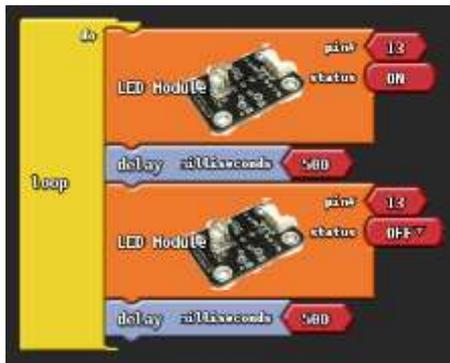
1.1 Hardware connection

[Digital White LED Light Module](#) connect to Pin 13.

1.2 Function

LED will be lighted once a second.

1.3 Block sketch

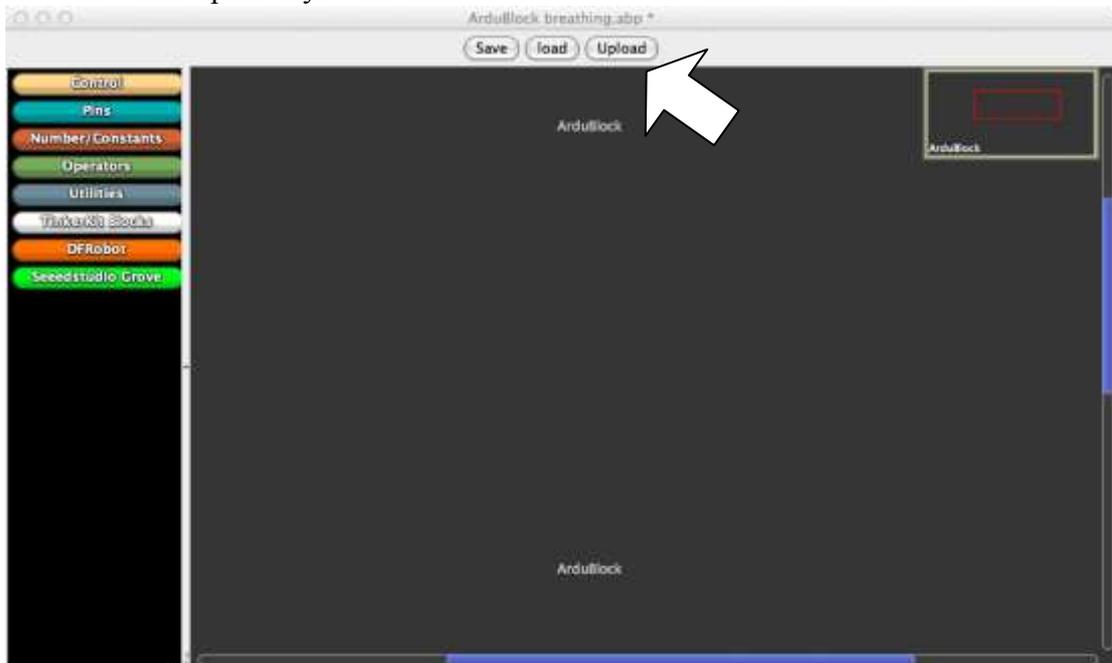


1.4 [Download](#)

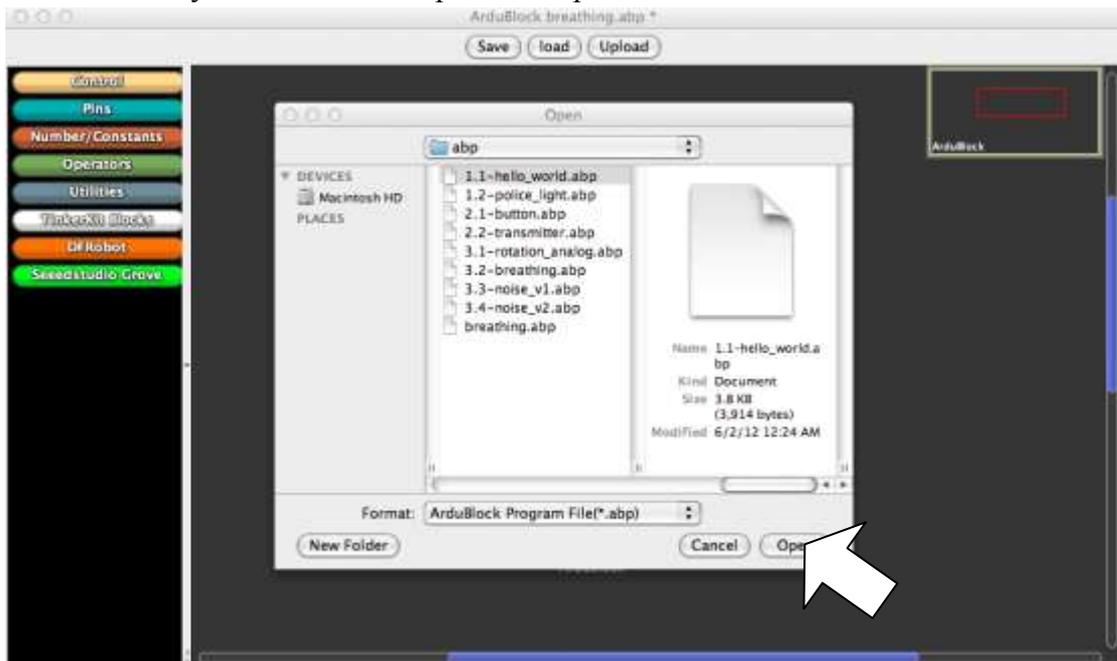
REMARK

Now you can download the abp file directly.

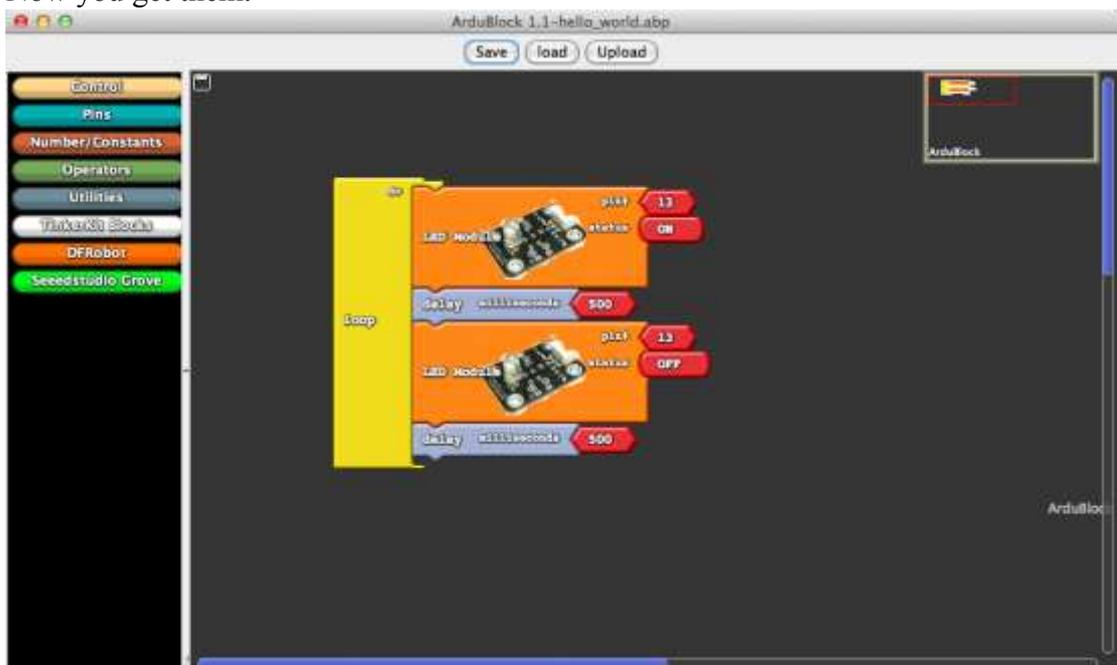
You can load the abp file by click the load button.



Select the file you download and press the open button.



Now you get them.



2 Example 2--Alarm light

2.1 Hardware connection

[Digital RED LED Light Module](#) connected to Pin 13.

[Digital Blue LED Light Module](#) connected to Pin 12.

2.2 Function

The red LED and the blue LED will be lighted alternately like how the police lights do. The effect will be fantastic if you get a translucent cover like a tissue on it.

2.3 Block sketch



2.4 [Download](#)

Simple input

3 Turn on a LED by pressing a button

3.1 Hardware connection

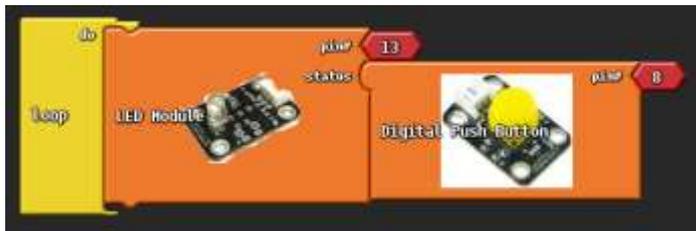
[Digital White LED Light Module](#) connected to Pin 13.

[Digital Push Button](#) connected to Pin 8.

3.2 Function

When the button is pressed, the LED will be turned on.

3.3 Block sketch



3.4 [Download](#)

4 Morse code

4.1 Hardware review

[Digital RED LED Light Module](#) connected to Pin 13.

[Digital Buzzer Module](#) connected to Pin 12.

[Digital Push Button](#) connected to Pin 8.

4.2 Function

When the button is pressed, the red LED will be turned on and the buzzer will beep. A period of beeping sounds like a Morse code.

4.3 Block sketch



4.4 [Download](#)

Analog input and output

5 Rotation Sensor

5.1 Hardware review

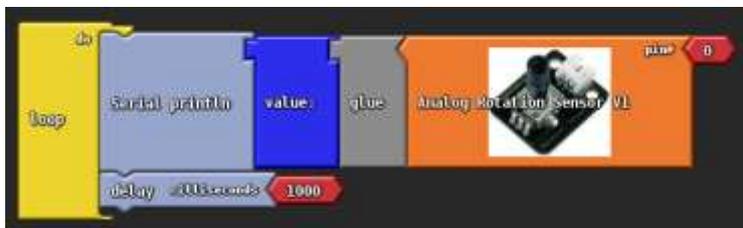
[Analog Rotation Sensor V1](#) connected to Pin A0.

5.2 Function

In this program, you can check the value of the rotation angle.

When you upload the program, you can switch to arduino IDE, click the monitor icon. The serial monitor windows will show the degree of the rotation from 0 to 1023.

5.3 Block sketch



5.4 [Download](#)

6 Fade light

6.1 Hardware review

[Digital White LED Light Module](#) connected to Pin 11.

6.2 Function

This program will show you the light will flash in a long time in a fade condition.

6.3 Block view



6.4 [Download](#)

7 Noise meter 1

7.1 Hardware review

[Digital White LED Light Module](#) connected Pin 11.

[Analog Sound Sensor](#) connected Pin A0.

7.2 function

This meter can detect the environment noise, more loudly the light will brighter.

7.3 Block view



7.4 [Download](#)

8 Noise meter 2

8.1 Hardware review

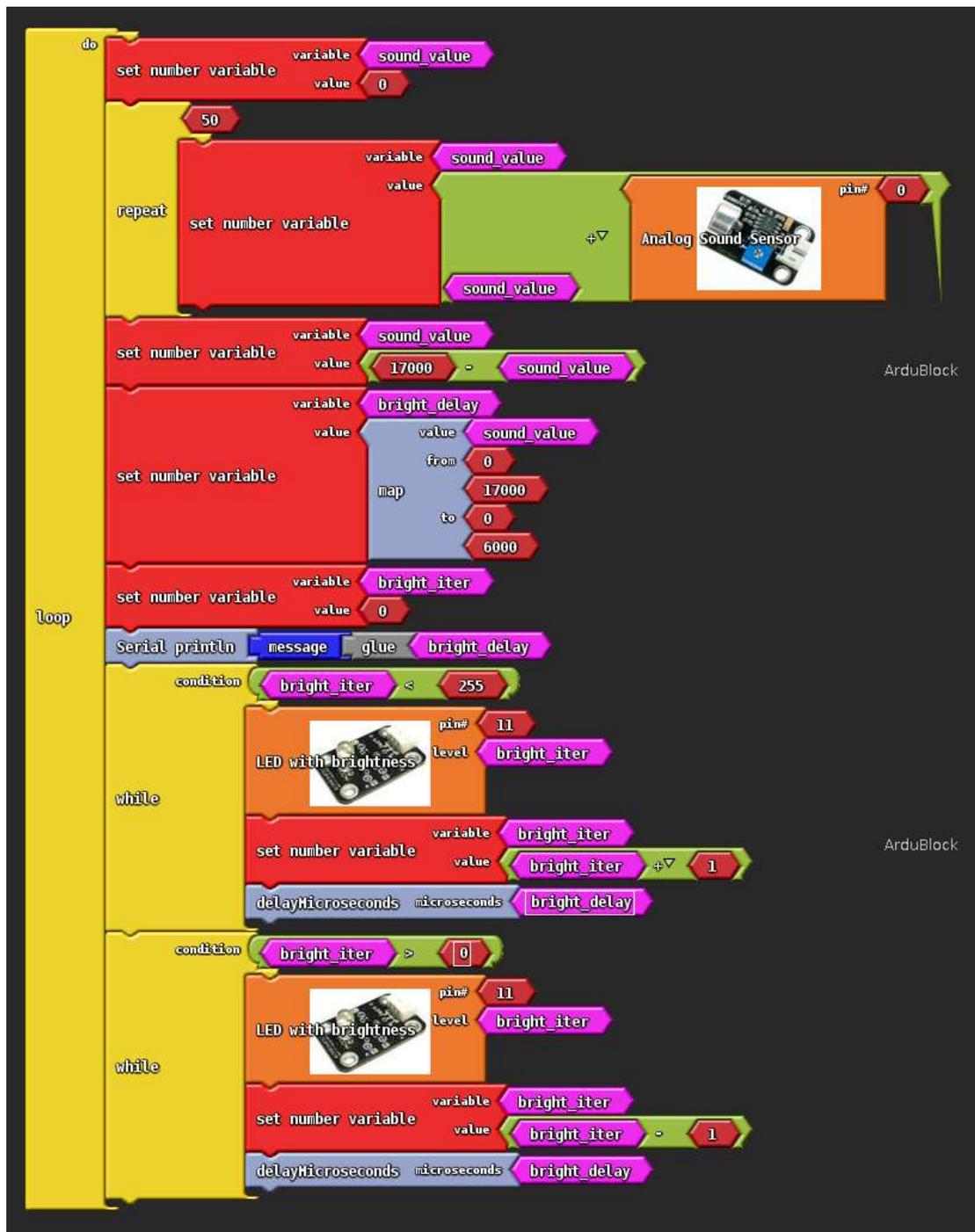
[Digital White LED Light Module](#) connected Pin 11.

[Analog Sound Sensor](#) connected Pin A0.

8.2 function

This meter can detect the environment noise, more loudly the light flash faster.

8.3 Block view



8.4 [Download](#)