Table des matières

To create new block, here is a simple way using Grove LED block as example:

1 - modify index.html, at the <u>end</u> of file add categories and **name of blocks** you want to add in the Toolbox (*sidebar menu*) :

```
<category name="CAT ARDUINO SERVO">
            <block type="servo move"></block>
            <block type="servo read degrees"></block>
        </category>
    </category>
    <sep></sep>
    <category name="CAT GROVE">
        <category name="CAT GROVE IN">
            <block type="grove button"></block>
            <block type="grove rotary angle"></block>
            <block type="grove tilt switch"></block>
            <block type="grove temporature sensor"></block>
            <block type="grove sound sensor"></block>
            <block type="grove pir motion sensor"></block>
            <block type="grove line finder"></block>
            <block type="grove ultrasonic ranger"></block>
            <block type="grove_thumb_joystick"></block>
        </category>
        <category name="CAT GROVE OUT">
            <block type="grove_led"></block>
                                                                        //we
will use this one as example
            <block type="grove_piezo_buzzer"></block>
            <block type="grove relay"></block>
            <block type="grove motor shield"></block>
            <block type="grove_rgb_led"></block>
        </category>
        <category name="CAT GROVE LCD">
            <block type="grove serial lcd print"></block>
            <block type="grove serial lcd power"></block>
            <block type="grove serial lcd effect"></block>
        </category>
        <category name="CAT GROVE COMM">
            <block type="grove bluetooth slave"></block>
        </category>
    </category>
</xml>
```

The different block name will be used for the block declaration **and** the function: *parts* #2 & #3 'grove_led' example.

The name are reference inside the file (en.js ; fr.js ; es.js; etc) with the text that will be dispalyed, so it's the multilingual way: *part* **#5** *for* 'grove_led' example.

2 - define functions in a particular file '/generators/arduino/grove.js '. This file contains the way the block will create Arduino code, example of 'grove_led' block quoted in **part #1** :

```
Blockly.Arduino.grove_led = function() {
  var dropdown_pin = Blockly.Arduino.valueToCode(this, 'NUM',
Blockly.Arduino.ORDER_ATOMIC);
  var dropdown_stat = this.getFieldValue('STAT');
  Blockly.Arduino.setups_['setup_green_led_'+dropdown_pin] =
  'pinMode('+dropdown_pin+', OUTPUT);'; //will be declared in setup()
  var code = 'digitalWrite('+dropdown_pin+','+dropdown_stat+');\n'
  //will be used in loop()
  return code;
```

```
};
```

3 - define blocks with the same name as function, in a specific file in

'/blocks/grove/grove.js '. This file contains instructions for Blockly engine to display it:

```
Blockly.Blocks['grove led'] = {
  init: function() {
   this.setColour(190);
    this.setHelpUrl(Blockly.Msg.GROVE INOUT LED HELPURL); //relative
information to real text in /lang/blocks/en.js
    this.appendDummyInput()
        .appendField(Blockly.Msg.GROVE INOUT LED INPUT1)
        .appendField(new
Blockly.FieldImage("http://www.seeedstudio.com/wiki/images/thumb/e/e0/LED1.j
pg/400px-LED1.jpg", 64, 64))
            //picture in local storage seems to be better idea, in the same
directory as in js block file definition
        .appendField(Blockly.Msg.GROVE INOUT LED INPUT2)
        .appendField(new Blockly.FieldDropdown(profile.default.digital),
"PIN")
        .appendField(Blockly.Msg.GROVE INOUT LED INPUT3)
        .appendField(new Blockly.FieldDropdown([["1 - HIGH", "HIGH"], ["0 -
low", "LOW"]]), "STAT");
               //you can also put FieldDropdown in Lang file
   this.setPreviousStatement(true, null);
   this.setNextStatement(true, null);
   this.setTooltip(Blockly.Msg.GROVE INOUT LED TOOLTIP);
 }
};
```



4- add the name of this 2 file <u>up in</u> 'index.html' :

```
<html>
<head>
<link rel="icon" type="image/png" href="images/favicon.bmp" />
<meta http-equiv="Content-Type" content="text/html; charset=utf-8" />
<title>Blockly Arduino</title>
<script type="text/javascript" src="blocks/blockly_compressed.js"></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></sc
<script type="text/javascript" src="blocks/blocks_compressed.js"></script>
<script type="text/javascript"</pre>
src="blocks/arduino base/arduino base.js"></script></script></script></script></script>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             //block display
<script type="text/javascript" src="blocks/grove/grove.js"></script>
<script type="text/javascript"</pre>
src="generators/arduino/blocklyduino.js"></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></
<script type="text/javascript"</pre>
src="generators/arduino/arduino base.js"></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></
<script type="text/javascript" src="generators/arduino/control.js"></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></s
<script type="text/javascript" src="generators/arduino/grove.js"></script></script></script></script></script>
//block function for Arduino code
```

5 - at last translating in different language file.

 \rightarrow <u>If needed</u>, **in /lang/msg/en.js** you can add global specification:

```
var MSG = {
  title: "éditeur graphique pour aider à la programmation des interfaces
Arduino",
  labelArduinoCard: "carte Arduino :",
  span_config: " configurer les blocs",
  span_delete: " effacer TOUS les blocs",
  span_saveXML:" sauver en fichier XML",
```

 \rightarrow Then in **/lang/blocks/en.js** we add all the text displayed:

```
Blockly.Msg.ARDUINO_SERIAL_PRINT_CONTENT = "envoyer sur le port série la
donnée :";
Blockly.Msg.ARDUINO_SERIAL_PRINT_TOOLTIP = "envoie des données sur le port
série pour surveillance par le moniteur en ASCII";
Blockly.Msg.GROVE_INOUT_LED_HELPURL =
"http://www.seeedstudio.com/wiki/index.php?title=GROVE_-_Starter_Bundle_V1.0
b#LED";
Blockly.Msg.GROVE_INOUT_LED_INPUT1 = "mettre la DEL";
Blockly.Msg.GROVE_INOUT_LED_INPUT2 = "sur la broche Digital";
Blockly.Msg.GROVE_INOUT_LED_INPUT3 = "à l'état";
Blockly.Msg.GROVE_INOUT_LED_TOOLTIP = "active la sortie Digital sur laquelle
la DEL est branchée";
```

6 - tweak !

You could also change the way the block is created or displayed, example with this different version:

```
Blockly.Blocks['grove_led'] = {
  init: function() {
   this.setColour(190);
   this.setHelpUrl(Blockly.Msg.GROVE INOUT LED HELPURL);
   this.appendDummyInput()
        .appendField(Blockly.Msg.GROVE INOUT LED INPUT1)
        .appendField(new
Blockly.FieldImage("http://www.seeedstudio.com/wiki/images/thumb/e/e0/LED1.j
pg/400px-LED1.jpg", 64, 64))
    this.appendValueInput("PIN", 'Number')
        .setCheck('Number')
        .setAlign(Blockly.ALIGN RIGHT)
        .appendField(Blockly.Msg.GROVE_INOUT_LED_INPUT2);
    //this.setInputsInline(true);
   this.appendDummyInput("")
        .setAlign(Blockly.ALIGN RIGHT)
        .appendField(Blockly.Msg.GROVE INOUT LED INPUT3)
        .appendField(new Blockly.FieldDropdown([["1 - haut", "HIGH"], ["0 -
bas", "LOW"]]), "STAT");
   this.setPreviousStatement(true, null);
   this.setNextStatement(true, null);
   this.setTooltip(Blockly.Msg.GROVE INOUT LED TOOLTIP);
  }
};
```



if you uncomment line this.setInputsInline(true); here what you will see:



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