Function samples

Switch Toggle

// This function toggles a relay (on - off)
// every time a rising edge is received on the touch button

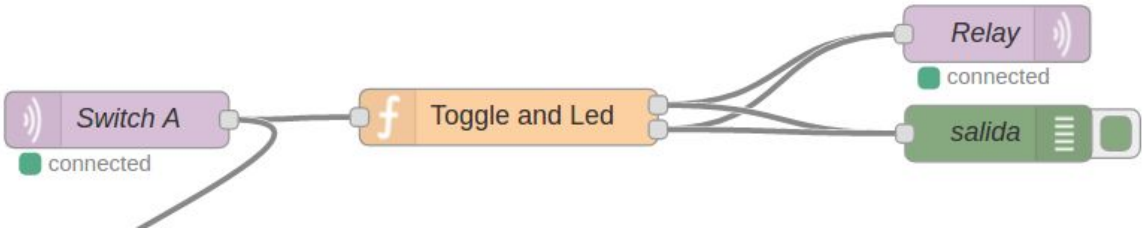
Input Topic: box1/switch_A, payload (='1' pressed) ('0' released)
Output Topic: box1/RelayA   payload ('1' ON) ('0' OFF)


```
// Create return message

var newMsg = {payload: "new payload",topic: "box1/RelayA" };
// initialise the counter to 0 if it doesn't exist already

var count = context.get('count')||0;   // retrieve Static Var (Scope Function)


   if(msg.payload=="1")         // Rising edge
   {

      count += 1;                  // Generate toggle sequence 01010101..
      count %=2;
      context.set('count',count); // save count
      newMsg.payload=String(count);  //return count as payload for output topic "box1/RelayA
      return newMsg;

   }
   else // falling edge (hold value)
   {
    newMsg.payload=String(count); //return count as payload for output topic "box1/RelayA
    return newMsg;
   }
```

Sample 2

Switch Toggle with Led Status

// This function toggles a relay (on - off) and led color (Red - Green)
// every time a rising edge is received on the touch button
Input Topic: box1/switch_A, payload (='1' pressed) ('0' released)
Output Topic1: box1/RelayA payload ('1' ON) ('0' OFF)
Output Topic2: box1/rgbled payload : "rgb(r,g,b)" // r=red ,g=green, b=blue) [0-255]

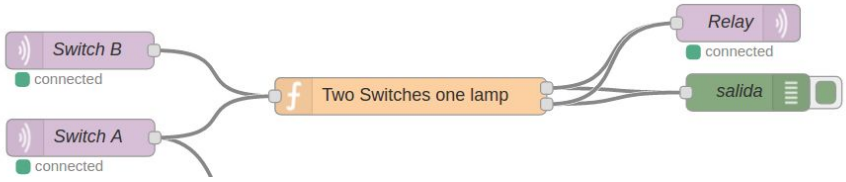



```
var newMsg1 = {payload: "new payload",topic: "box1/RelayA" }; // Default return messages
var newMsg2 = {payload: "rgb(207,0,0)",topic: "box1/rgbled" };
var count = context.get('count')||0;

    if(count===0)                       // Set led color based on system state
    newMsg2.payload="rgb(207,0,0)";     /// Led Red
    else
    newMsg2.payload="rgb(0,207,0)";     // Led Green

  if(msg.payload=="1")
  {
    count += 1;
    count %=2;                          // Toggle Relay
    context.set('count',count);
    newMsg1.payload=String(count);
    return [newMsg1,newMsg2];           // return 2 outputs
  }
  else
  {
   newMsg1.payload=String(count);
   return [newMsg1,null];               // return 2 outputs
  }
```

Sample 3

Two Switches One Lamp (with Led Status)

// This function toggles a relay (on - off) and led color (Red - Green)
// Switch A Turns ON whilst Switch B Turns OFF
Input Topic: box1/switch_A, payload (='1' pressed) ('0' released)
Input Topic: box1/switch_B, payload (='1' pressed) ('0' released)
Output Topic1: box1/RelayA   payload ('1' ON) ('0' OFF)
Output Topic2: box1/rgbled   payload : "rgb(r,g,b)" // r=red ,g=green, b=blue) [0-255]




```
var newMsg1 = {payload: "0",topic: "box1/RelayA" };
var newMsg2 = {payload: "rgb(207,0,0)",topic: "box1/rgbled" };
var count = context.get('count')||0;

      if(msg.topic=="box1/switch_A" )
      {
         if(msg.payload=="1")                 // switch A rising edge
         {
            newMsg2.payload="rgb(207,0,0)";  // Led Red
            newMsg1.payload='1';                 // Relay ON
            return [newMsg1,newMsg2];
         }
         else
            return [null,null];
      }

      if(msg.topic=="box1/switch_B" )       // switch B rising edge
      {
         if(msg.payload=="1")
         {
            newMsg2.payload="rgb(0,207,0)"; // Led Green
            newMsg1.payload='0';                  // Relay OFF
            return [newMsg1,newMsg2];
         }

         else
            return [null,null];
      }
     return [newMsg1,newMsg2];
```

Sample 4

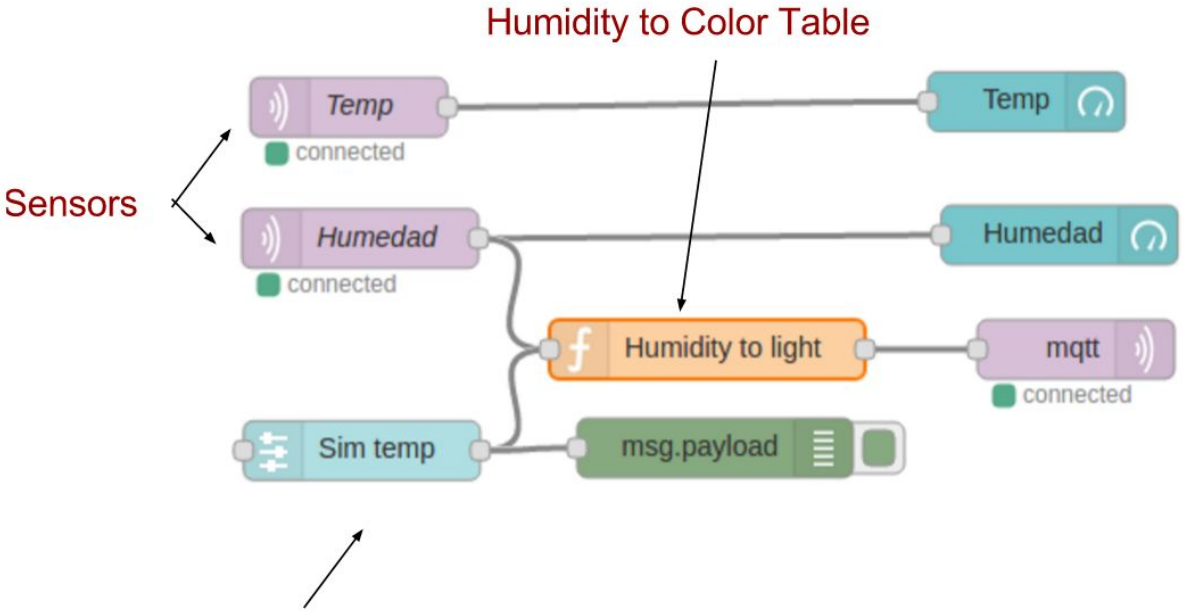
Same as Sample 3 but Text display is used instead of RGB LED

```
var newMsg1 = {payload: "0",topic: "box1/RelayA" };
var newMsg2 = {payload: "Lamp is OFF",topic: "box1/display" };
var count = context.get('count')||0;


    if(msg.topic=="box1/switch_A" )
    {
       if(msg.payload=="1")
       {
          newMsg2.payload="Lamp is ON";  // Send Text to display
          newMsg1.payload='1';

          return [newMsg1,newMsg2];

       }
       else
          return [null,null];

    }

    if(msg.topic=="box1/switch_B" )
    {

       if(msg.payload=="1")
       {
          newMsg2.payload="Lamp is OFF";  // Send Text to display
          newMsg1.payload='0';
          return [newMsg1,newMsg2];
       }


       else
          return [null,null];


    }

    return [newMsg1,newMsg2];
```

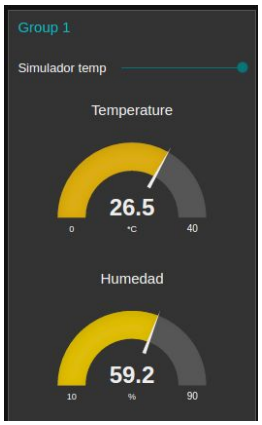
Sample 5

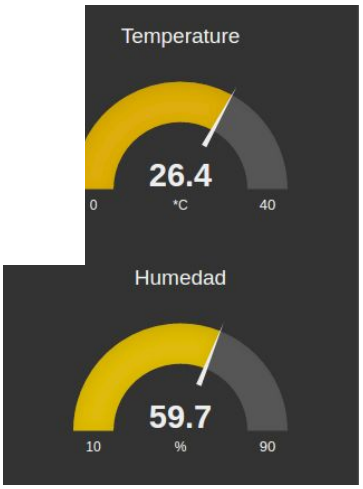
Interaction between IOT devices

Summary; One device sends temperature and humidity to the broker while the other changes his rgb led color depending on the Humidity sensed on the other box



Simulaor Slider
Simulates different
Humidity values





The table is implemented via a function

```
var newMsg = {payload: "rgb(207,0,0)",topic: "box1/rgbled" };



        if(msg.topic=="climate_box/Humedad" )
        {
            if(msg.payload>="60" && msg.payload<"65" )
            {
                newMsg.payload="rgb(100,200,0)";
                return [newMsg];

            }

            if(msg.payload>="65" && msg.payload<"70" )
            {
                newMsg.payload="rgb(150,150,0)";
                return [newMsg];

            }

            if(msg.payload>="75" && msg.payload<"80" )
            {
                newMsg.payload="rgb(150,100,0)";
                return [newMsg];

            }
            if(msg.payload>="80" && msg.payload<"85" )
            {
                newMsg.payload="rgb(150,50,0)";
                return [newMsg];

            }
            if(msg.payload>="85" && msg.payload<"90" )
            {
                newMsg.payload="rgb(200,50,0)";
                return [newMsg];

            }
            if(msg.payload>="90" && msg.payload<"93" )
            {
                newMsg.payload="rgb(255,10,0)";
                return [newMsg];

            }
            if(msg.payload>="93" && msg.payload<="100" )
            {
                newMsg.payload="rgb(255,0,0)";
                return [newMsg];

            }

            return [null];

```