# How to use SimpleMio DSL

The user can write a program, that contains multiple events and each event has the following syntax:

**ConditionalSensor -> Actions**

**ConditionalSensor** are composed by sensor separated by conditional operators, such as, “**or**”, “**and**”, “**(**” something here “**)**” and “**not**”.

“**or**” and “**and**” are followed with two ConditionalSensors, one in each side. “**not**” is followed by just one conditional sensor, after the “**not**”. “**(**” “**)**”, the parenthesis contains a ConditionalSensor, inside the parenthesis.

Each **sensor** is composed by a **sensorName** (obstacle, sound, line, button or motor), a **sensorSpecifier** (front, back, left, right, up, down, or center) and optionally the user can set the **strength** of the sensor by adding a value after the “@” symbol, the **strength** has to be a value between 0 and 10.

**Actions** are composed by actions separated by a comma “,”

Each **action** is composed by an **actionName** (move, led or turn), an **actionSpecifier** (left, right, forward, backward, stop, red, green or blue) and optionally the user can set the **strength** of the action by adding a value after the “@” symbol, the **strength** has to be a value between 0 and 10.

Also, each action or sensor is allowed to be followed by:

* **move** can be followed by forwards, backwards or stop.
* **led** can be followed by red, blue or green.
* **turn** can be followed by right or left.
* **obstacle** can be followed by front, back, left or right (activates the sensors on the front, sides or on the back of the thymio).
* **line** can be followed by left or right (activates the sensors under the thymio).
* **button** can be followed by left, right, up, down and center.
* **sound** and **motor** don’t have any specifier.
* The sensor **motor** doesn’t support intensity.
* **Overlapping actions is not allowed**, like, more than 1 action led or more than 1 action turn or move in total.

## Examples of programs

**not** **obstacle** **front** -> **move** **forward** @7

**obstacle** **front** **or** **obstacle** **right**-> **turn** **right**

**sound** -> **led** **red** @10

**button** **center** **and** **not** **obstacle** **back** @6 -> **move** **backward** @2

**obstacle** **front** ->**turn** **left**, **led** **red**