# 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, stop, led or turn), an **actionSpecifier** (left, right, forward, backward, 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 forward, backward.
- **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, motor** and **stop** don't have any specifier.
- The sensor **motor** and action **stop** don't support intensity.
- **Overlapping actions is not allowed**, like, more than 1 action led or more than 1 action turn, move or stop 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
```