Cue™  Hour of Code

Cue's Secret Message

Let's use Cue the robot with the Wonder Workshop *Cue* app to make a secret message system.

Unlock the message with front and back commands.

Let's write a program that helps the robot check for two requirements: if it sees something **in front of** it and if it sees something **behind** it. Once the robot has detected these two signals, a message will be unlocked.

Step 1

First, let's test the robot's **distance sensors**, which help it look for obstacles. Write and run the code below to change the robot's face lights when it sees something **in front of** or **behind** it.

- Which part of the code is related to the **front sensor**? Which is related to the **back sensor**?

```
events.whenObstacle(Obstacles.Center, ObstacleState.Seen, function () {
    front = true
    actions.setFacePattern("111100000111", 255)
})

events.whenObstacle(Obstacles.Back, ObstacleState.Seen, function () {
    back = true
    actions.setFacePattern("000111111100", 255)
})
```

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Step 2

Now let's use two **variables** in our code. The variable **front** will keep track of whether the robot has seen something **in front of** it, and the variable **back** will keep track of whether the robot has seen something **behind** it.

```
events.whenObstacle(Obstacles.Center, ObstacleState.Seen, function () {
    front = true
    actions.setFacePattern("111100000111", 255)
})

events.whenObstacle(Obstacles.Back, ObstacleState.Seen, function () {
    back = true
    actions.setFacePattern("000111111100", 255)
})

// on start

let front: boolean
let back: boolean
back = false
front = false
```

Step 3

To make the sensors unlock the secret message, we need to write code that checks whether both sensors have been triggered.

Let's design a **function** called **checkRequirements** that plays a sound if both **front** and **back** have been set to **true**. We'll call the **function** every time the robot sees something **in front of** or **behind** it.

```
events.whenObstacle(Obstacles.Center, ObstacleState.Seen, function () {
    front = true
    actions.setFacePattern("111100000111", 255)
    checkRequirements()
})

events.whenObstacle(Obstacles.Back, ObstacleState.Seen, function () {
    back = true
    actions.setFacePattern("000111111100", 255)
    checkRequirements()
})

function checkRequirements() {
    if (front && back) {
        actions.playSound(Sounds.Mission_Success_1)
    }
}
// on start

let front: boolean
let back: boolean
back = false
front = false

```

Make it your own!

There are many ways to make this program unique. Try these ideas:

- Record your own **custom sound** or message when both the **front and back sensors** are triggered.
- Change the program to detect **sound sensors**.
- Alter how the robot behaves when **seeing something** (e.g., use wheel or head movements).
- Create additional requirements to unlock the message.
- Design a way for the robot to require **sensor inputs** in a specific order.

What if there were several different messages to unlock in one program?

For more info, visit: makewonder.com/cue_the_cleverbot