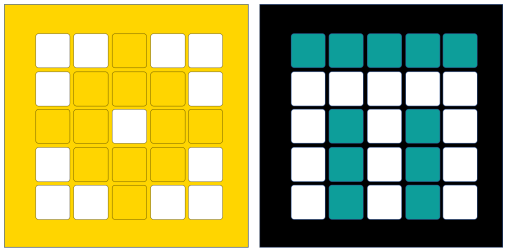
PRIME LESSONS

By the Makers of EV3Lessons



IF ELSE STATEMENTS

BY ARVIND SESHAN

LESSON OBJECTIVES

- Learn how to make your robot decide what to do out of different choices
- Learn how to use an if else statement

IF ELSE STATEMENTS

- Asking the robot a question and doing something different based on the answer
- Example:
  - Does the robot see a line? Or not?
  - Is the robot near the wall? Or not?
- It is like a yes/no question
- An if statement requires an expression with a Boolean output. If the output, is true, the indented code below will run

```
if expression:
    #Code
```

- You can add an else statement after to run code if the expression returns false

```
if expression:
    #Code
else:
    #Code 2
```

ELIF STATEMENTS

- Notice that in the last example, the else statement took no inputs. It just ran when the if expression returned false.
- The elif statement can be used to check another condition, given the previous condition returned false. elif stands for "else if".

```
if expression:
    #Code
elif expression2:
    #Code 2
```

- Code 2 will only run if expression returns false and expression2 returns true.
- You can use multiple if and elif statements in a row, but only one else statement.

```
if expression:
    #Code
elif expression2:
    #Code 2
elif expression3:
    #Code 3
else:
    #Code 4
```

CHALLENGE: HAPPY OR SAD?

- Write a program that changes the display based on if the Force Sensor is pressed or not pressed
- If pressed, your SPIKE Prime is happy. Display a smiley face. On the LED Matrix.
- If not pressed, SPIKE Prime is sad! Display a sad face.
- You will need to use the Light Functions, a loop, and an If Else Statement.

CHALLENGE SOLUTION

```
force = ForceSensor('F')
while True:
    if (force.is_pressed()):
        hub.light_matrix.show_image('HAPPY')
    else:
        hub.light_matrix.show_image('SAD')
```

Initialize the Force Sensor

Run the code forever

When the Force sensor is pressed, the LED Matrix shows a happy face

When you let go of the Force sensor, the LED Matrix shows a sad face

CREDITS

- This lesson was created by Arvind Seshan for SPIKE Prime Lessons
- More lessons are available at www.primelessons.org