



# 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') Initialize the Force Sensor  
while True: Run the code forever  
    if (force.is_pressed()):  
        hub.light_matrix.show_image('HAPPY') When the Force sensor is pressed,  
                                                the LED Matrix shows a happy face  
    else:  
        hub.light_matrix.show_image('SAD') When you let go of the Force sensor,  
                                                the LED Matrix shows a sad face
```

# CREDITS

- This lesson was created by Arvind Seshan for Prime Lessons
- More lessons are available at [www.primelessons.org](http://www.primelessons.org)



This work is licensed under a [Creative Commons Attribution-NonCommercial-ShareAlike 4.0 International License](https://creativecommons.org/licenses/by-nc-sa/4.0/).