Lesson 4: Conditional Statements, Programming Solutions

Exercise 1
When the program is started, play a buzz sound if the touch sensor is pressed, else play a descending sweep sound if the touch sensor is not pressed.

Exercise 1: Solution

Exercise 2
If the light sensor is over a white piece of paper, turn on only motor A. If the light sensor is over a black piece of paper, turn on only motor C. Do this forever.

Exercise 2: Solution

Exercise 3
Start by turning on motor A in the forward direction. If the rotational sensor has made 3 rotations, turn off motor A and exit the program. Otherwise, play a beep, wait for 1 second, and continue to check the rotational sensor.
**Exercise 3: Solution**

When using a rotational sensor fork, you must reset the sensor. ...and land here. If greater than 3, turn off the motor.

- Turn on the motor
- 48 ticks = 3 rotations
- If less than 3, beep, wait 1 second, jump...

**Exercise 4**

If the light sensor is over the white paper, then if the touch sensor is pressed in, turn on motor A in the forward direction, otherwise, turn on motor A in the reverse direction. Else, if the light sensor is over the black paper, then if the touch sensor is pressed in, turn on motor C in the forward direction, otherwise, turn on motor C in the reverse direction. For all conditions, the motor should run for 4 seconds, then stop.

**Exercise 4: Solution**

This is an example of nested conditional statements. This stop sign stops all motors. It doesn't care which one is on.

- Don't forget to specify different sensor ports.
- Merge the forks from the inside back out.

**Lesson 4: Conditional Statements**

Troubleshooting Tips

**Problem 4a**

What's wrong with this program?

**Solution 4a**

Remember: All forks need a fork merge.
Problem 4b
This program is supposed to turn on motor A if the touch sensor is pressed, otherwise turn on motor C. What’s wrong?

Solution 4b
The branches of the fork are mixed up. This is a common mistake.

Problem 4c
In this program, if the light sensor reads a value above 80, it should turn on motor B. Otherwise, it should beep. Why doesn’t it work?

Solution 4c
The default light level value is 55. To specify a different value, you must use a numeric constant modifier.

Problem 4d
What’s missing from this program?

Solution 4d
Before every rotational sensor fork, you must reset the rotational sensor.