Lesson 3: Sensor Wait-for’s Programming Solutions

Exercise 1: Solution
Turn on motor A in the forward direction. When the touch sensor is pressed and held, reverse the motor direction. When the touch sensor is released, stop the motor.

Notice you can string several icons to the same sensor port.

Exercise 2: Solution
Start by holding the light sensor over the white piece of paper. When the light sensor is moved over the black piece of paper, turn on motor A in the forward direction. Turn off the motor when the light sensor is moved back over the white piece of paper.

Use a threshold that is halfway between white and black.

Exercise 3: Solution
Write a program that beeps once every time the rotational sensor is turned 1/4 rotation. Do this 10 times.

Remember: There are 16 ticks per 1 revolution so 4 ticks = 1/4 rev.

Exercise 4: Solution
When the touch sensor is pressed, turn on motor A in the forward direction. Then, turn the rotational sensor 1 1/2 rotations to turn the motor off.

IMPORTANT: Different sensors must be on different ports.
Problem 3a
Why won't the light sensor work?

Solution 3a
Sensors need to be connected to Sensor ports 1, 2 or 3.

Problem 3b
What's wrong with this set up?
The touch sensor is connected to port 1.

Solution 3b
- Connect the touch sensor to port 3.
- Or, change the port number in the software.

Problem 3c
Why won't the touch sensor work?

Solution 3c
Make sure the cable is connected to the front of the touch sensor.
Problem 3d
What isn’t too great about the way the light sensor is mounted?

Solution 3d
If the light sensor is too high, it has a harder time distinguishing between black and white. Mounting it lower to the ground will help.

Problem 3e
What’s wrong with this program?

Solution 3e
Remember: Different sensors MUST be on different ports in the software. If a port is not specified, it assumes Port 1.

Problem 3f
This program should turn on motor A until the rotational sensor has turned 2 revolutions, then turn off the motor. Why doesn’t it work?

Solution 3f
The default number of ticks is 16, or 1 revolution. For 2 revolutions, you must specify the number of ticks with a numeric constant modifier.

Hint: What is the default number of ticks in a Wait-for Rotation icon?

32 ticks = 2 revolutions