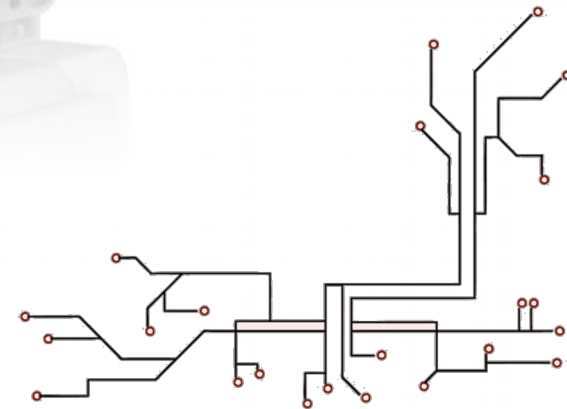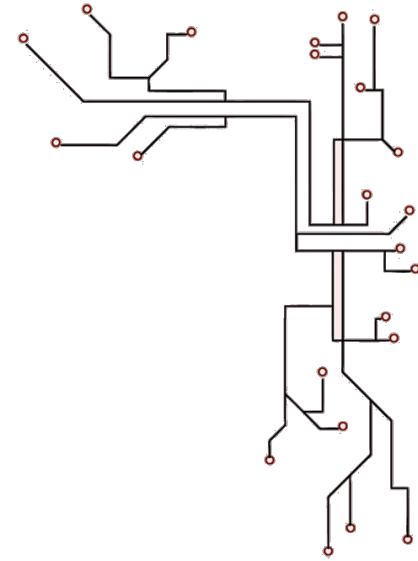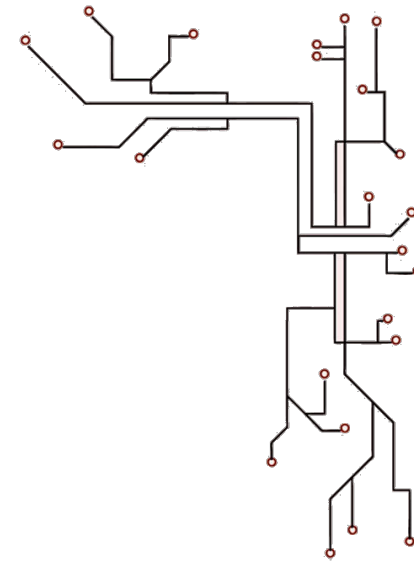# Touch Sensor

- 2-Wheel Robots (Review)

- Touch Sensors

- Roomba Challenge

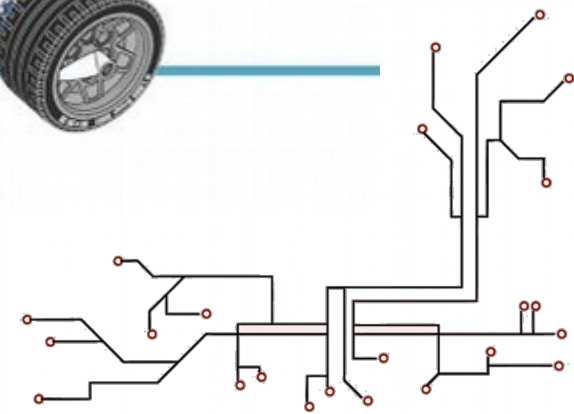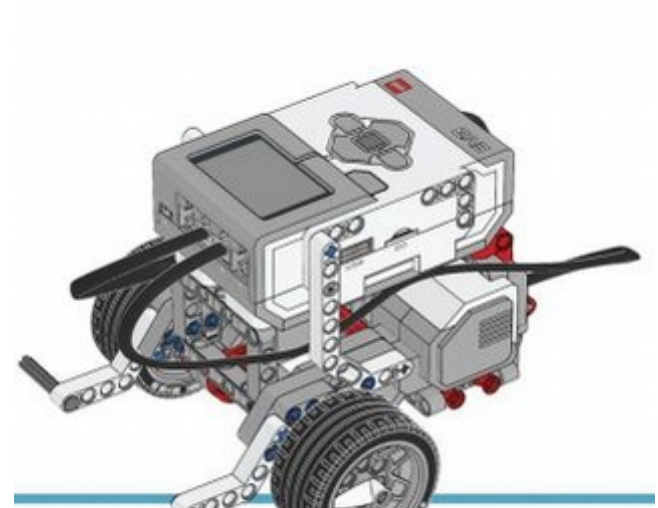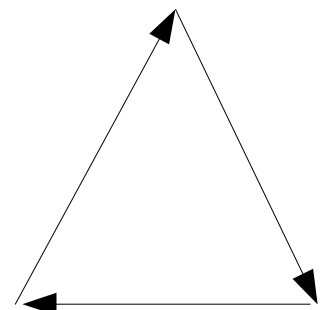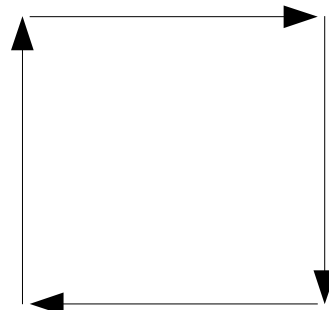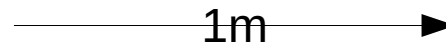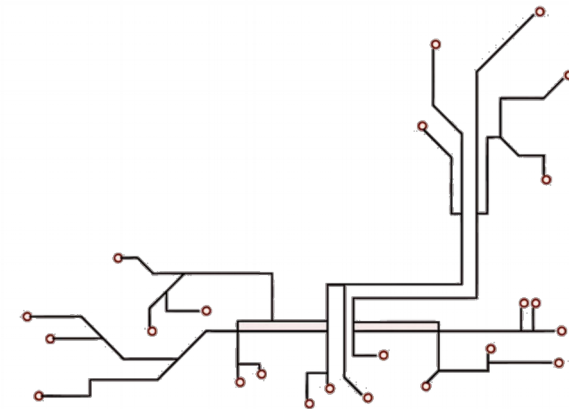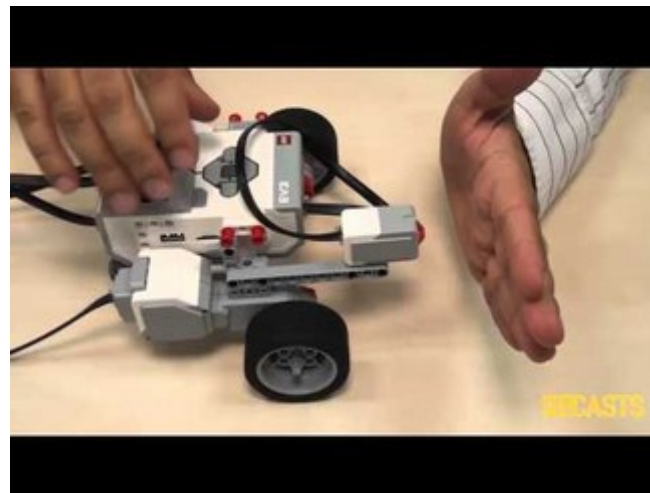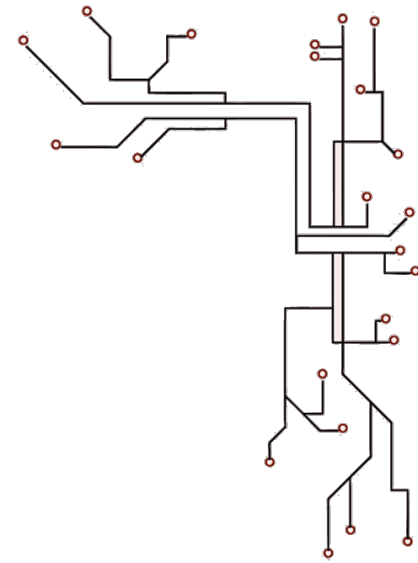# Review 2-Wheel Robots

Last Week's Challenges

- Drive **_1 meter_**

1m →

- Drive in a **_Square Pattern_**

- Drive around in a **_Triangle Pattern_**

Touch Sensors

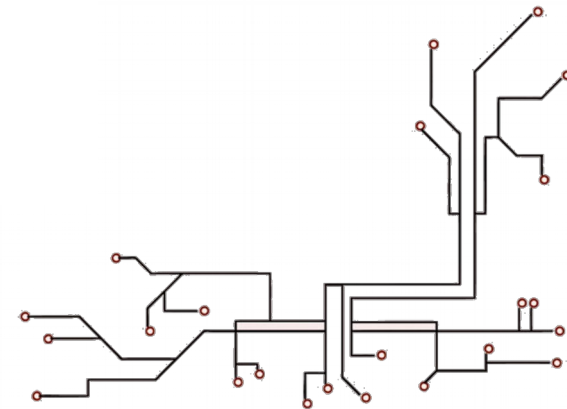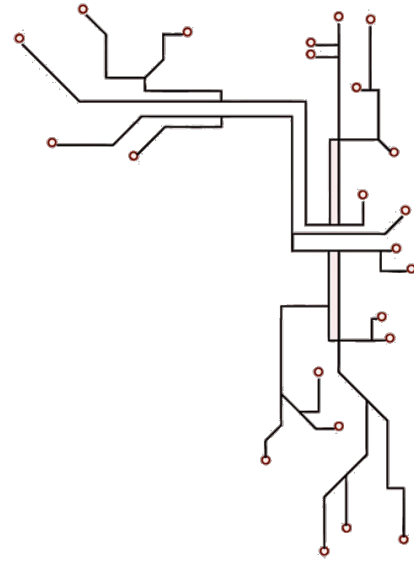**Touch Sensors Are Simple Push Buttons**

- Can be used as a button or a trigger

- Can be used as a bumper limit switch

- Can be used to sense physical attributes in factory automation

- And anything else you can think of...

Touch Sensors

As a Button/Trigger

- Connect a Touch Sensor
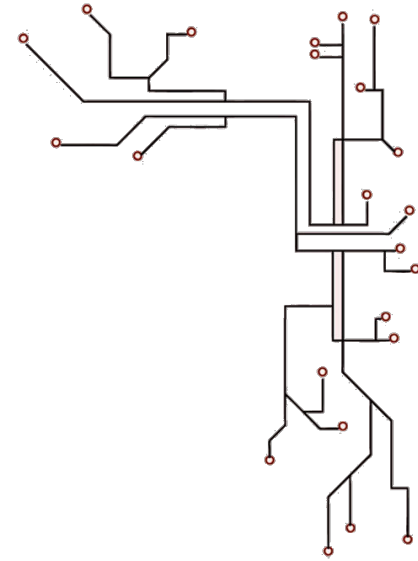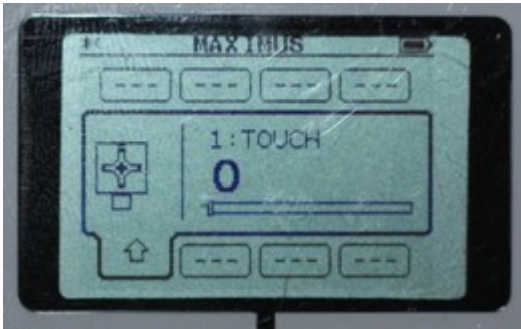
- Remember:
  Sensors connect to Number Ports

Touch Sensors

As a Button/Trigger

- Look at Port View on Brick

Touch Sensors

As a Button/Trigger

- Look at Port View on EV3 Development Environment

Touch Sensors

As a Button/Trigger

- Now Let's Make a Simple Program

1) When Touch Sensor is Pushed,
   <u>Show Some Picture</u>

*Wait until touch sensor **pressed** block*

2) When Touch Sensor is Let Go,
   <u>Clear Screen</u>
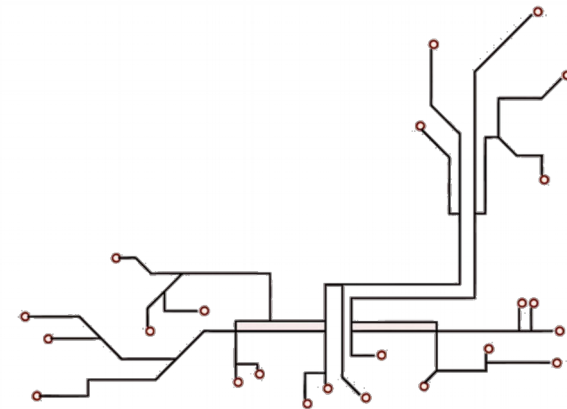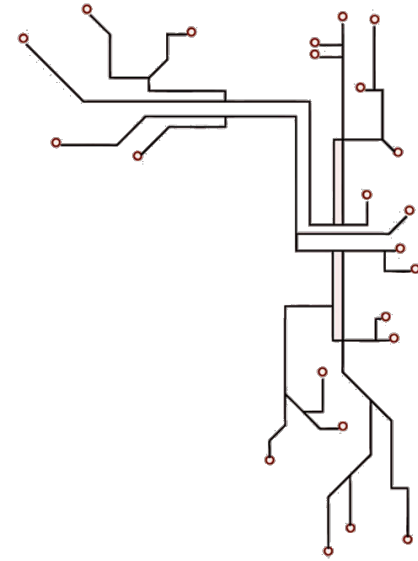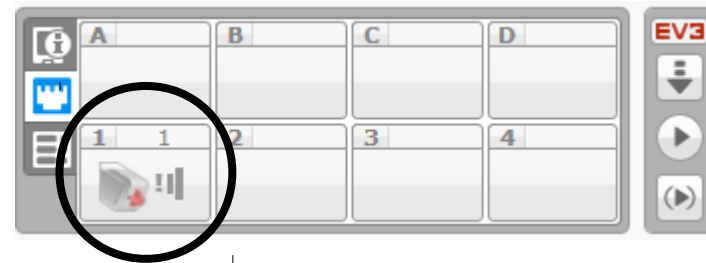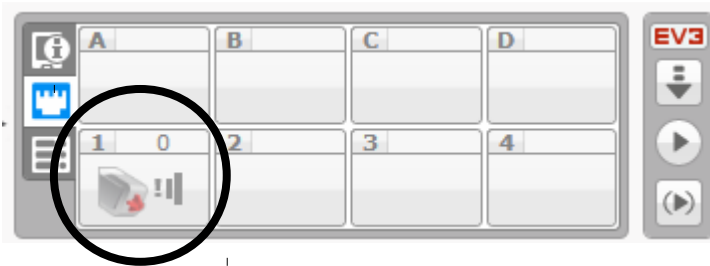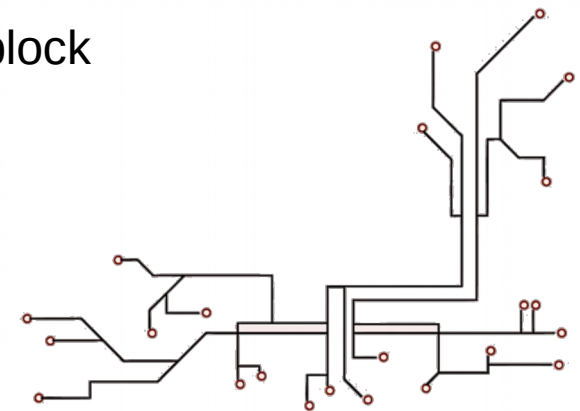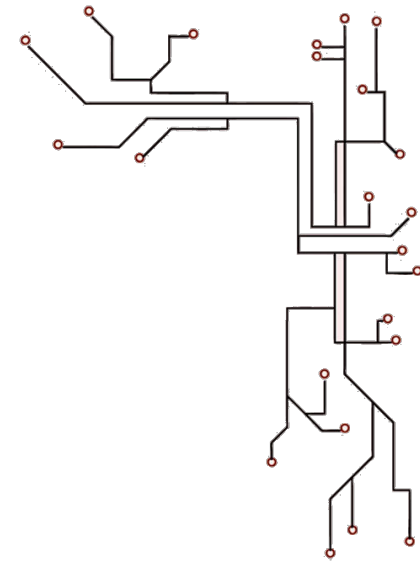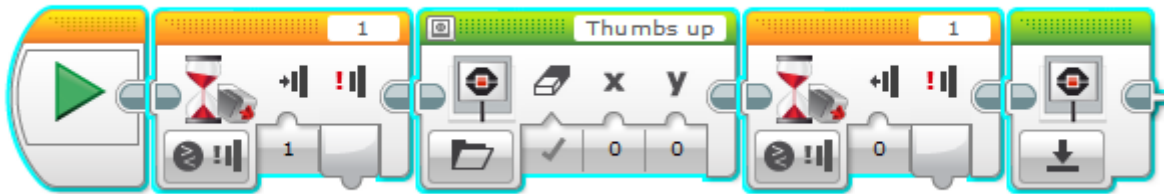

*Wait until touch sensor **released** block*
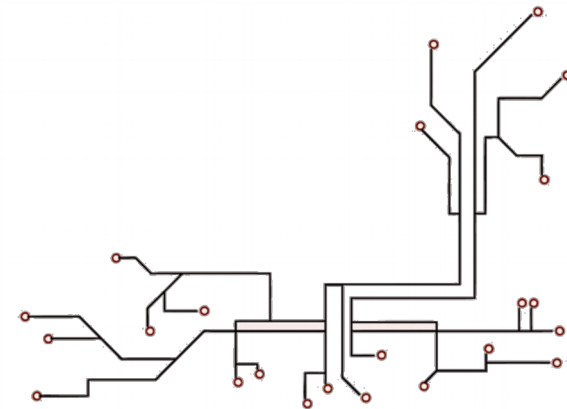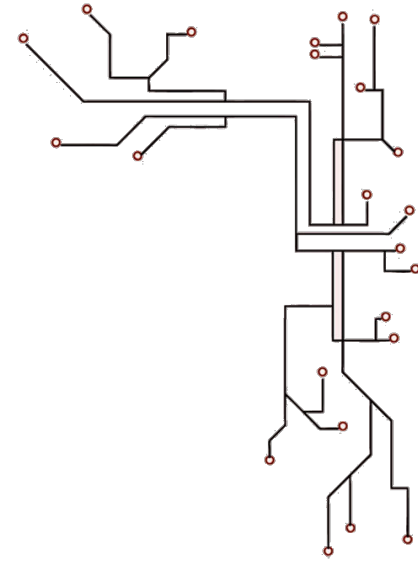
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Touch Sensors

As a Button/Trigger

- Here's a sample solution

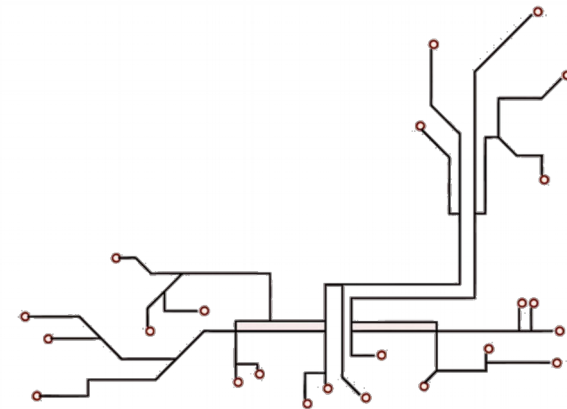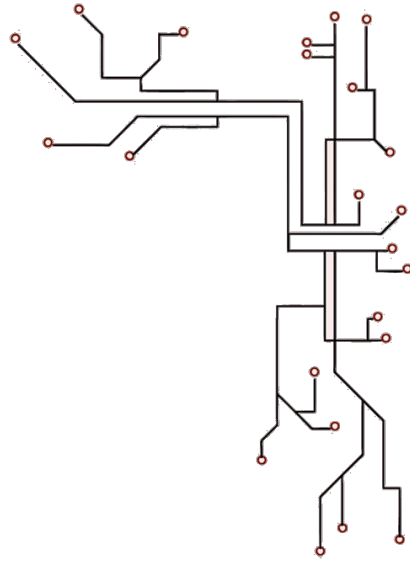- You can use this basic idea to make a silly sound machine (different keys trigger different sounds)

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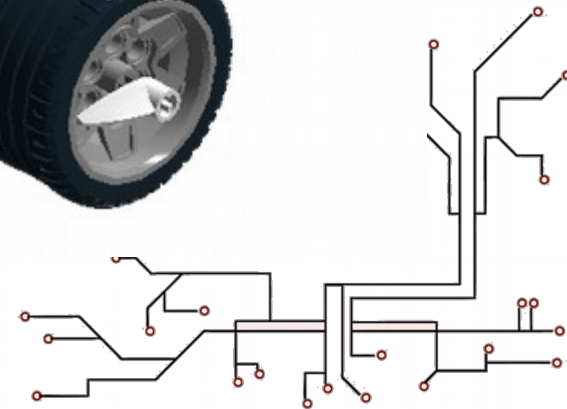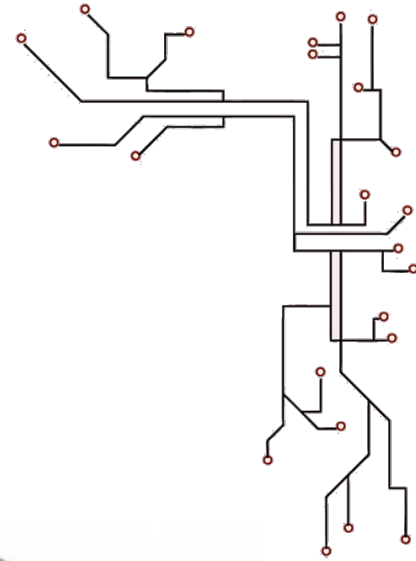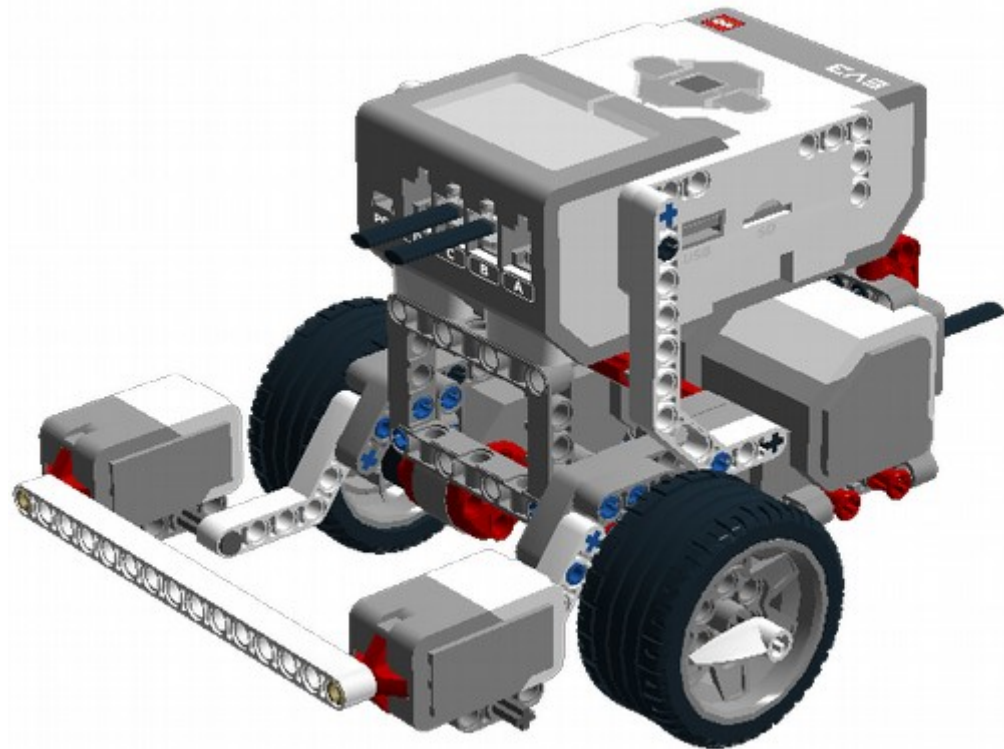# Touch & Go
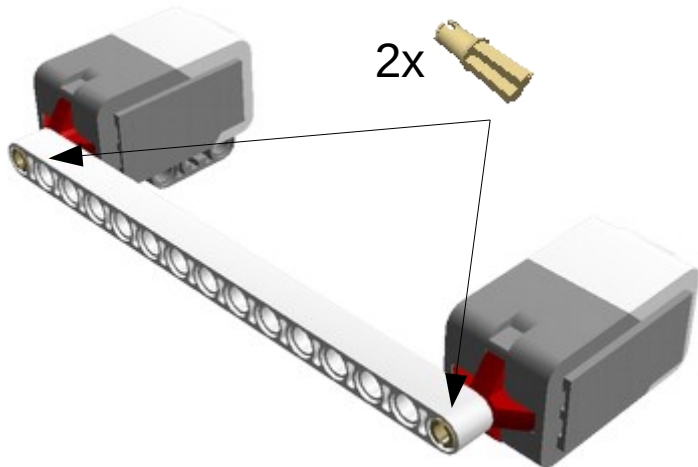
As a Button/Trigger

- Make another Simple Program

  - When Touch Sensor is Pushed
    Drive FWD

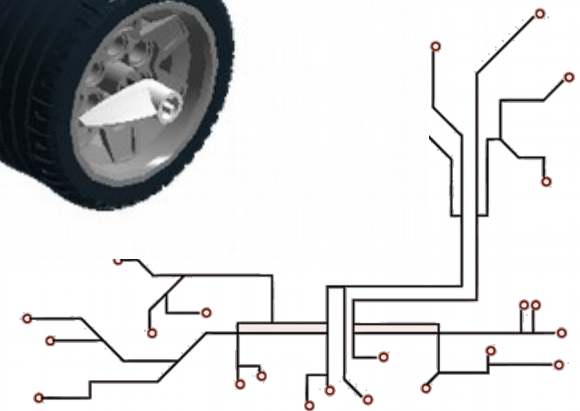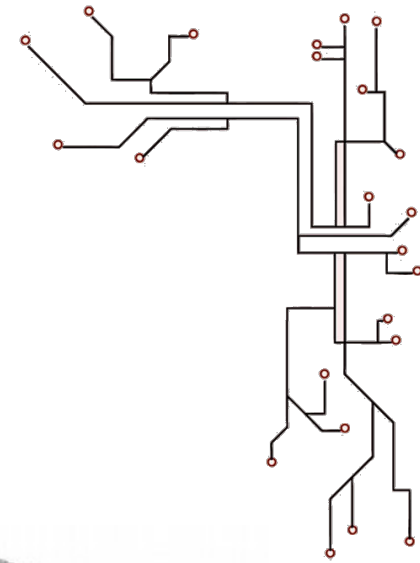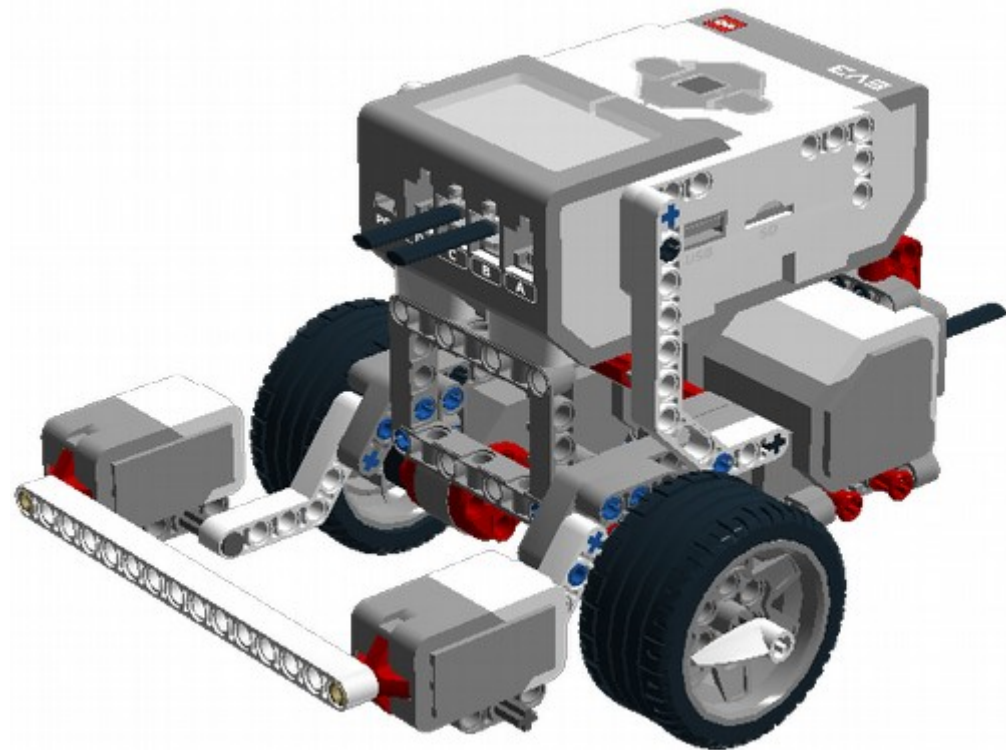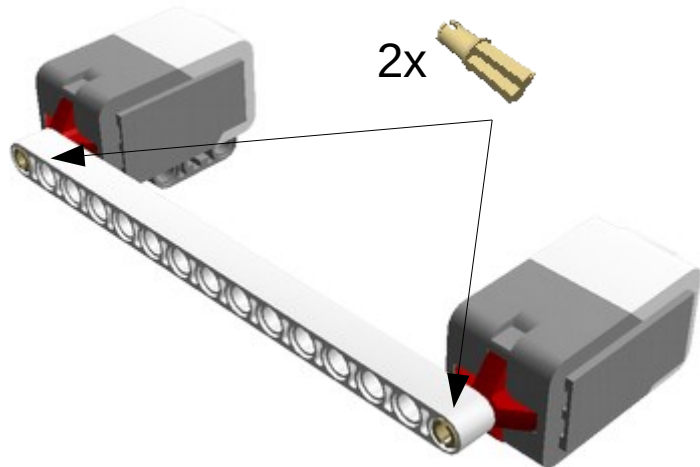 - When Touch Sensor is Let Go
    Stop

?

Bumper Switch

- Connect Two Touch Sensors to Front of your Robot To Act as Bumper Switches

  One Way Is Like This:

2x

Bumper Switch

- Test Sensor with Port View

2x
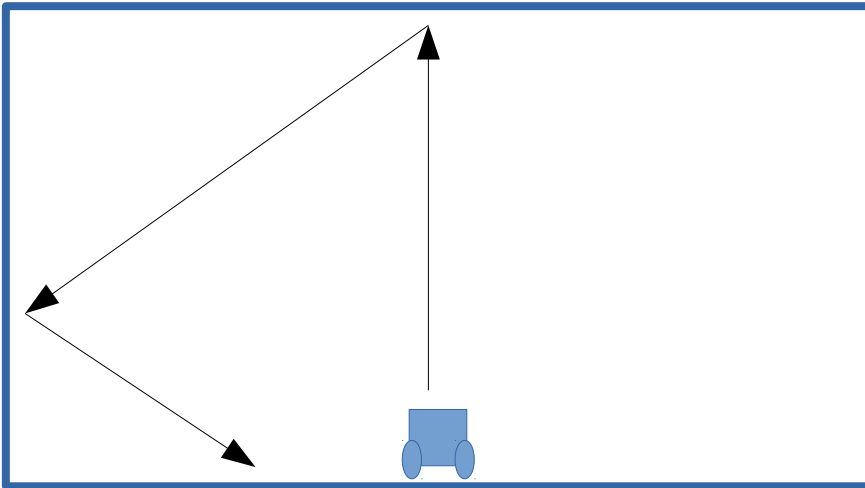
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Bumper Switch

- Now, Make your Robot Behave Like a Roomba!

- In a loop
  - Move FWD
  - Until you hit one of the Bumpers
  - Then Backup and Turn around
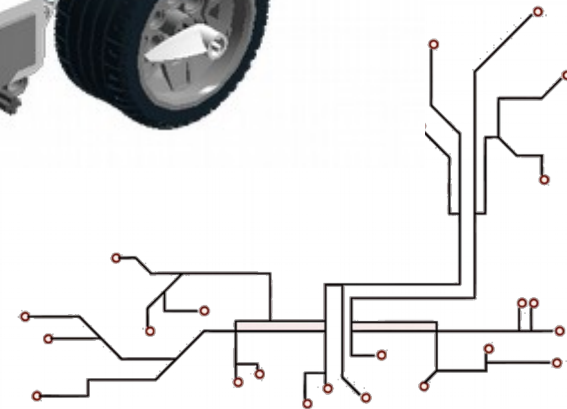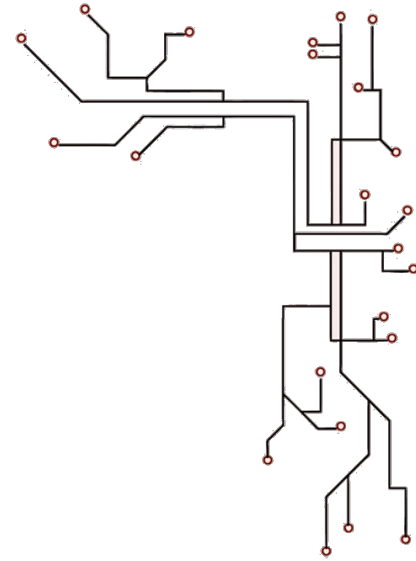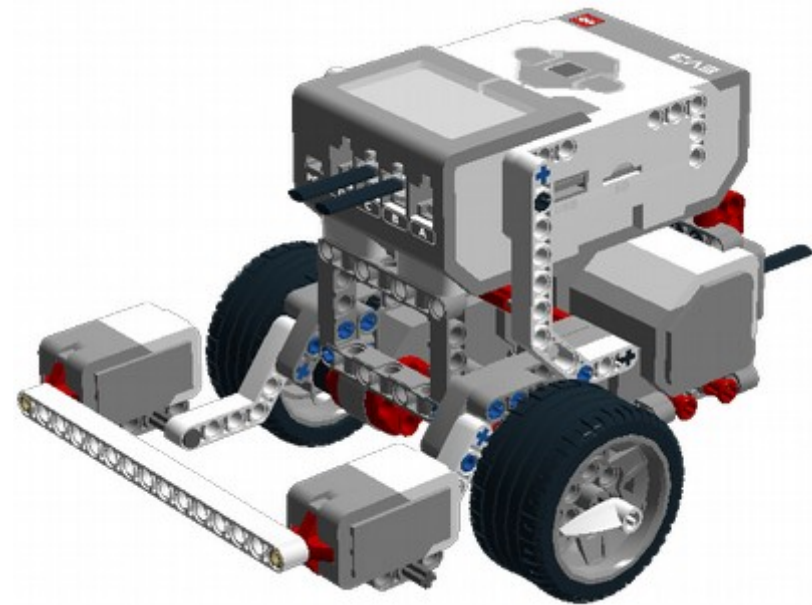 - Repeat...

Bumper Switch

- Now, Make your Robot Behave Like a Roomba!

- In a loop
  - Move FWD
  - Until you hit one of the Bumpers
  - Then Backup and Turn around
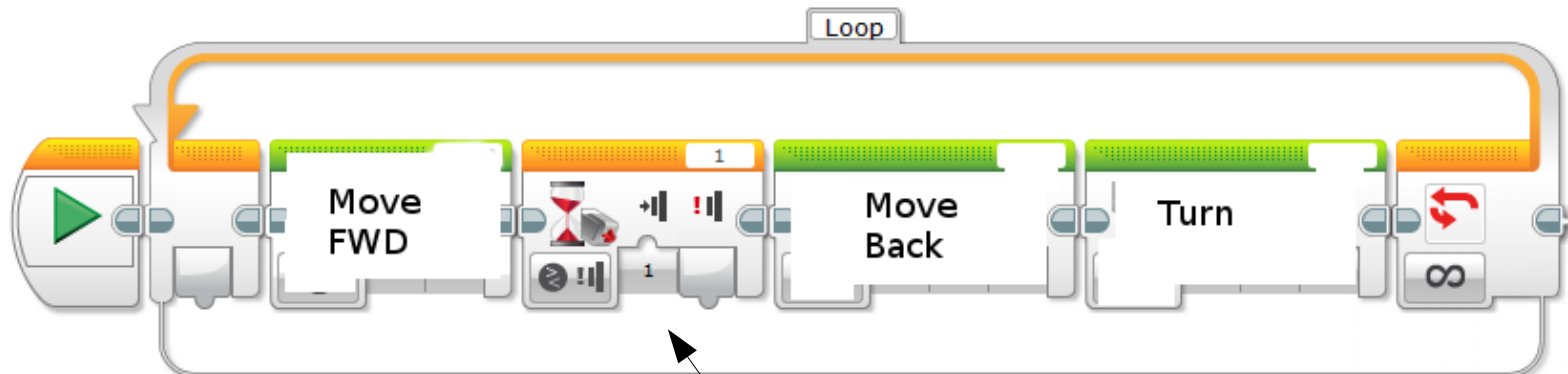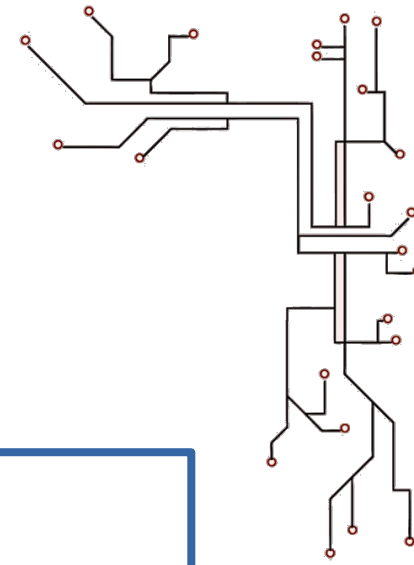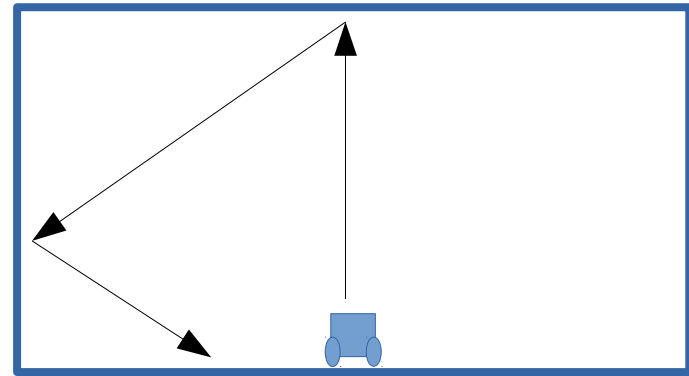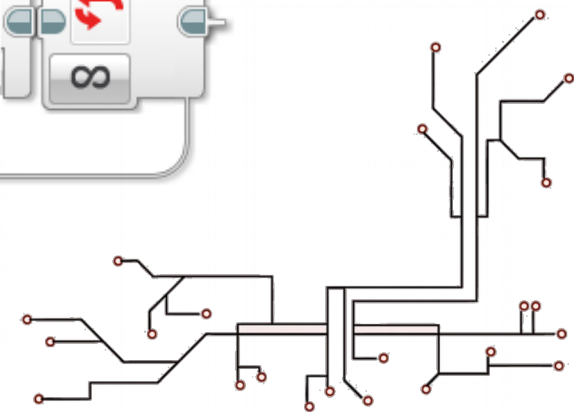 - Repeat...

Shouldn't matter which sensor gets tested.
They should trigger at the same time.

Bumper Switch

- **Roomba Challenge – Travel Entire Room**

Watch your robot.
What are some issues?

Take note of the problems you find, if any.

Then, try to change Robot design or Program to fix the issue.

Observe

Analyze

Make a Change

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