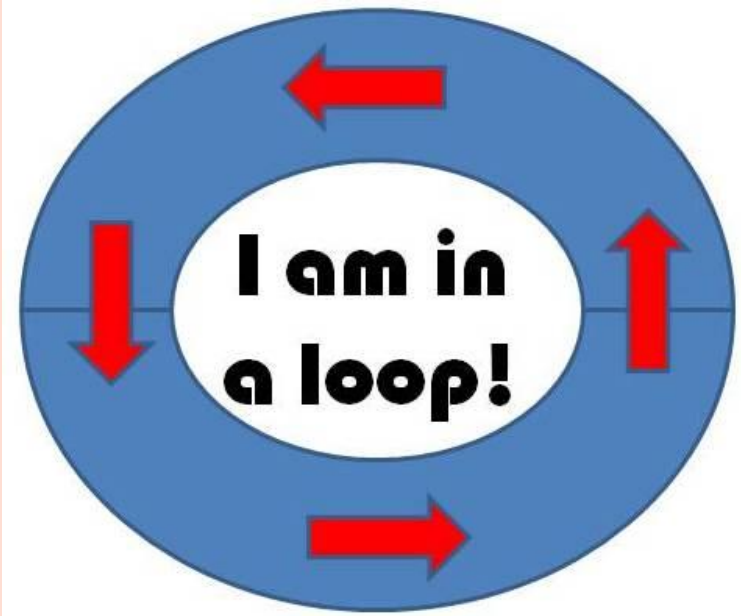
Using Waits, Loops and Switches



Waits, Loops and Switches Pre-Quiz

1. In programming, what is a loop? When is a loop useful?

2. How can you control the duration for which a loop repeats?

3. In programming, what is a switch?

Waits, Loops and Switches Pre-Quiz

Answers

1. **In programming, what is a loop? When is a loop useful?**

   A loop is an operator that allows us to repeat a set of commands indefinitely. Loops are useful when you need to repeat a set of commands multiple times.

2. **How can you control the duration for which a loop repeats?**

   You can control how many times a loop repeats by clicking the dropdown arrow next to “Control” on the loop block and setting it to forever, time, sensor, count or logic.

3. **In programming, what is a switch?**

   In programming, a switch is an object that gives different commands depending on the state it is in.

Wait Block Activity

Objective: Combine wait blocks, loops and switches to perform a task

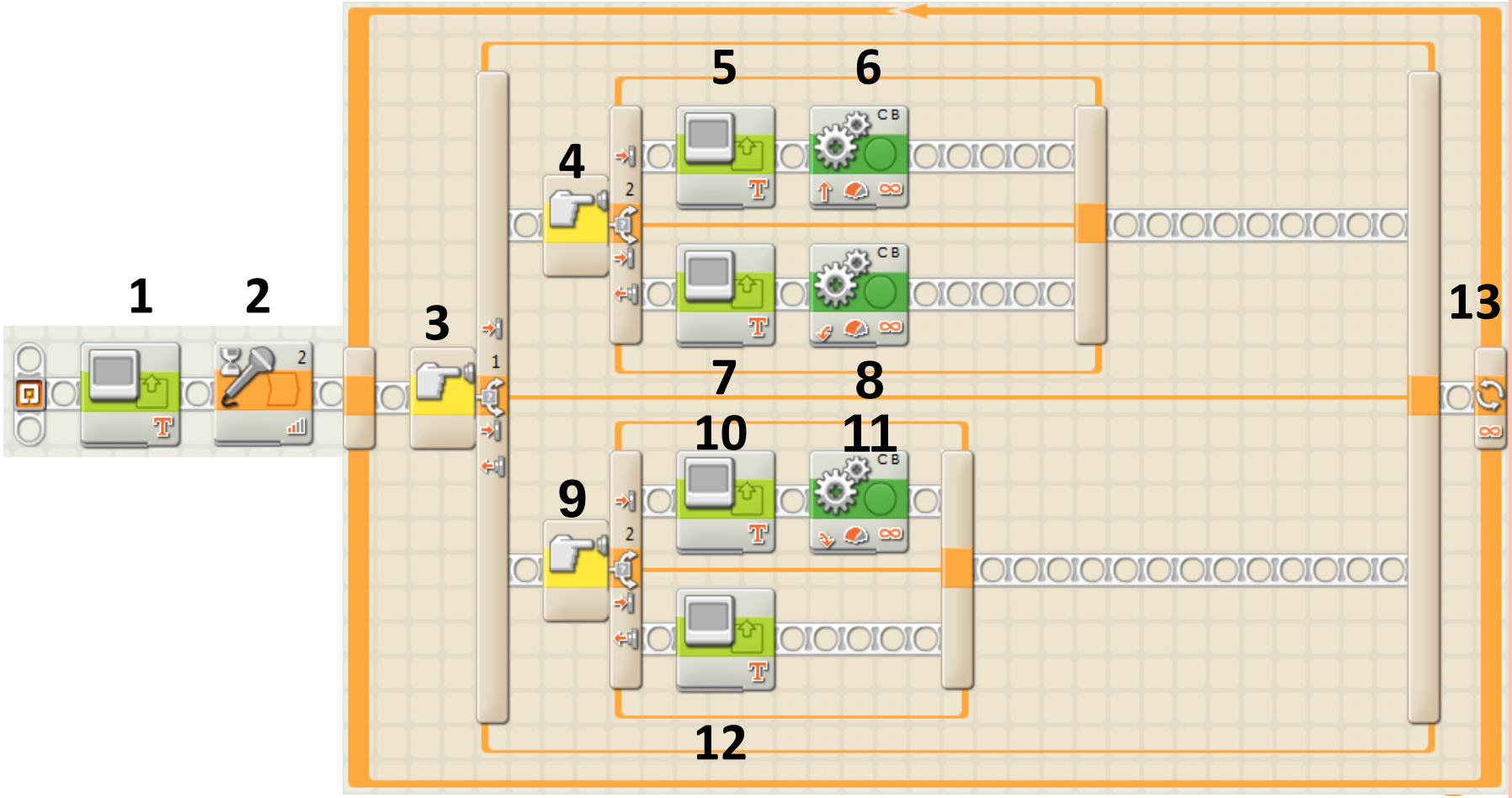
Do This: First, attach 2 touch sensors (name them A and B) and a sound sensor to your robot.

Then program the robot to perform the following task:

- **Stay at rest and display "Ready" on the screen until detecting a loud noise. Once a loud noise is detected:**
- **Move left and display "Left" whenever touch sensor A is pressed.**
- **Move right and display "Right" whenever touch sensor B is pressed**
- **Move forward and display "Forward" whenever both touch sensors A and B are pressed.**
- **Stay at rest and display "Stop" when no buttons are pressed.**

***Hint: Click on the  icon, drag the block into the program, and select "Text" from the dropdown menu to display text on screen.

Wait Block Activity Solution



Wait Block Activity Solution

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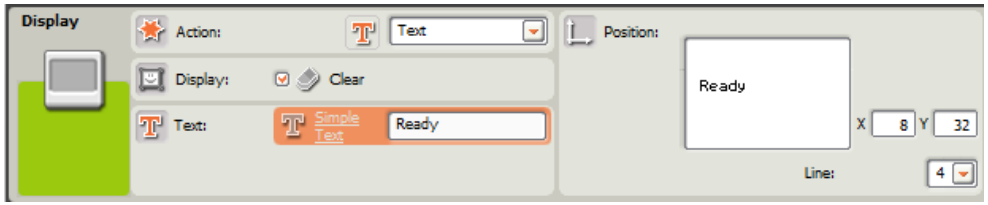

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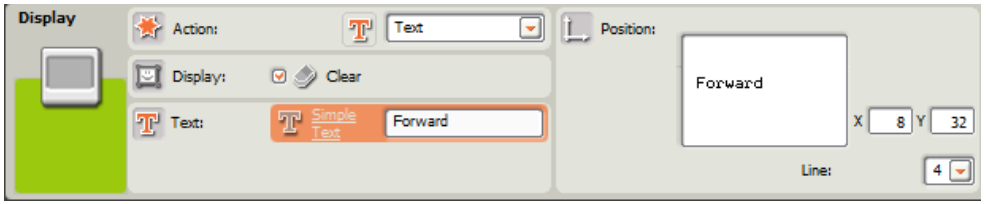

various settings

Wait Block Activity Solution

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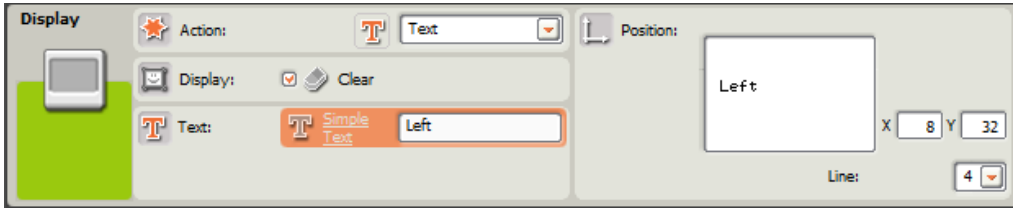

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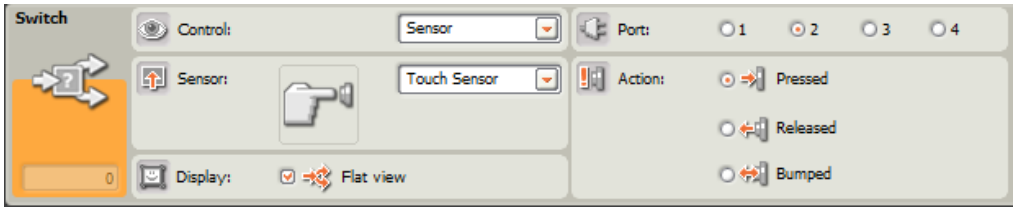

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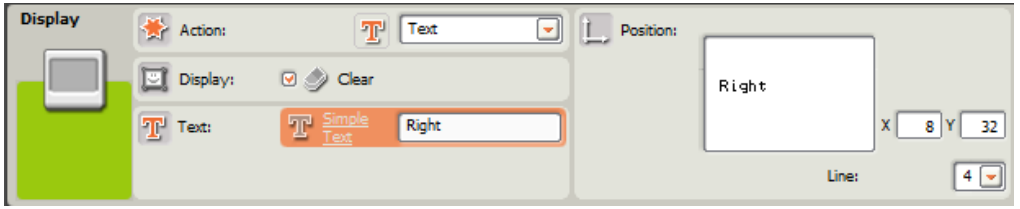

various settings (continued)

Wait Block Activity Solution

various settings (continued)

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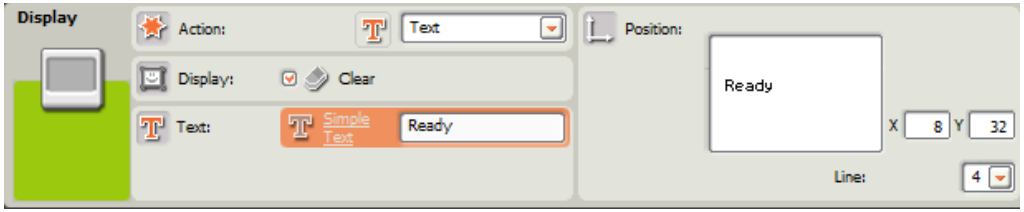

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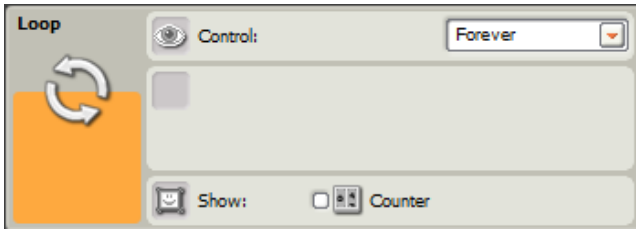

Waits, Loops and Switches Post-Quiz

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Vocabulary

brainstorming: Thinking of ideas as a group.

iteration: Doing something again, especially with the intent to make improvements.

loop: An operator that repeats a set of commands.

switch: In programming, a switch is an object that gives different commands, depending on the state it is in.

Images Sources

Slides 1: wall switch drawing; source: Microsoft® clipart: http://office.microsoft.com/en-us/images/results.aspx?qu=light+switch&ex=1#ai:MC900441745|

Device and programming images from LEGO MINDSTORM NXT User's Guide http://goo.gl/wuhSUA

Screen captures, diagrams and drawings by author