BEGINNER EV3 PROGRAMMING LESSON 3
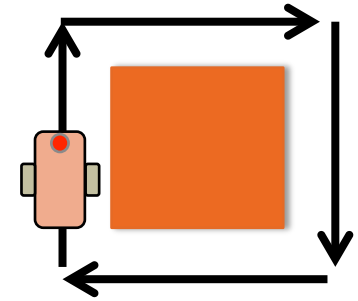
Switches and Loops

By: Droids Robotics
www.ev3lessons.com

SECTION 6:
REPEATING ACTIONS

REPEATING AN ACTION

How can we move around a box using the commands we already know?

- **(move + turn) + (move + turn) + (move + turn) …**

Is there an easier way?

Hint:

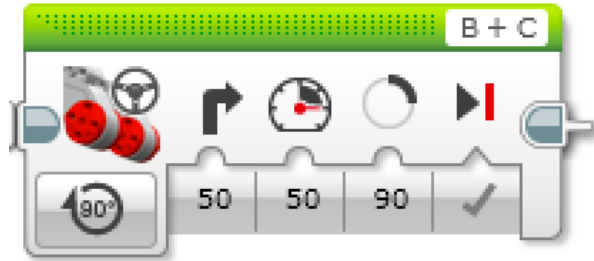# LOOPS

Loops make repeating a task multiple times easy

- KEEP GOING….Forever, for a Count, Until touch (or something else)

Repeat the loop 4 times

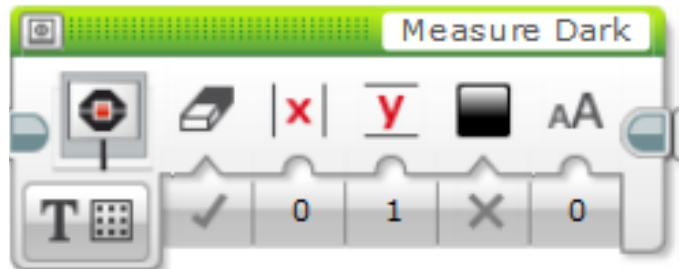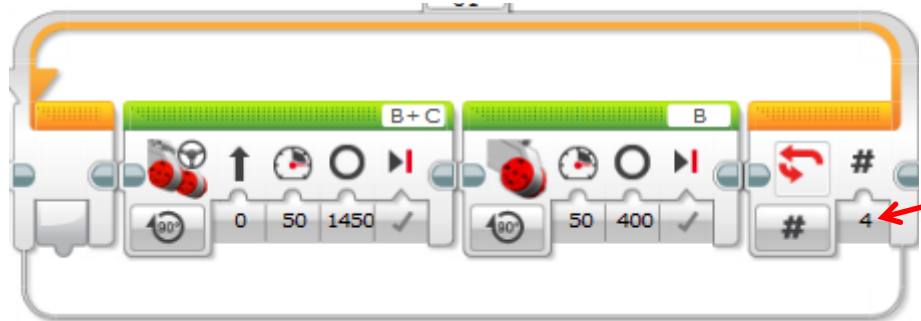# Challenge: Write a program to go around the box until touched

WHAT WE KNOW SO FAR

A

B

C

D

E

1) What is each Block called?

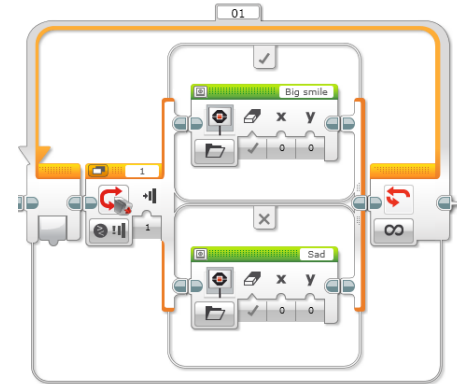2) Where do you find it?

3) What does it do?

4) When do we use it?

SECTION 7:
SWITCHING BETWEEN ACTIONS

SWITCH BLOCKS

Switch block

- Asking the robot a question and doing something different based on the answer

    - Example: Is the robot's touch sensor pressed? Or not?

    - Does the robot see a line? Or not?

- Basically a YES/NO QUESTION

- Switch blocks are found in the orange/flow tab

SWITCH BLOCK CHALLENGE 1

Challenge: Write a program that changes based on if the touch sensor is pressed or not pressed.
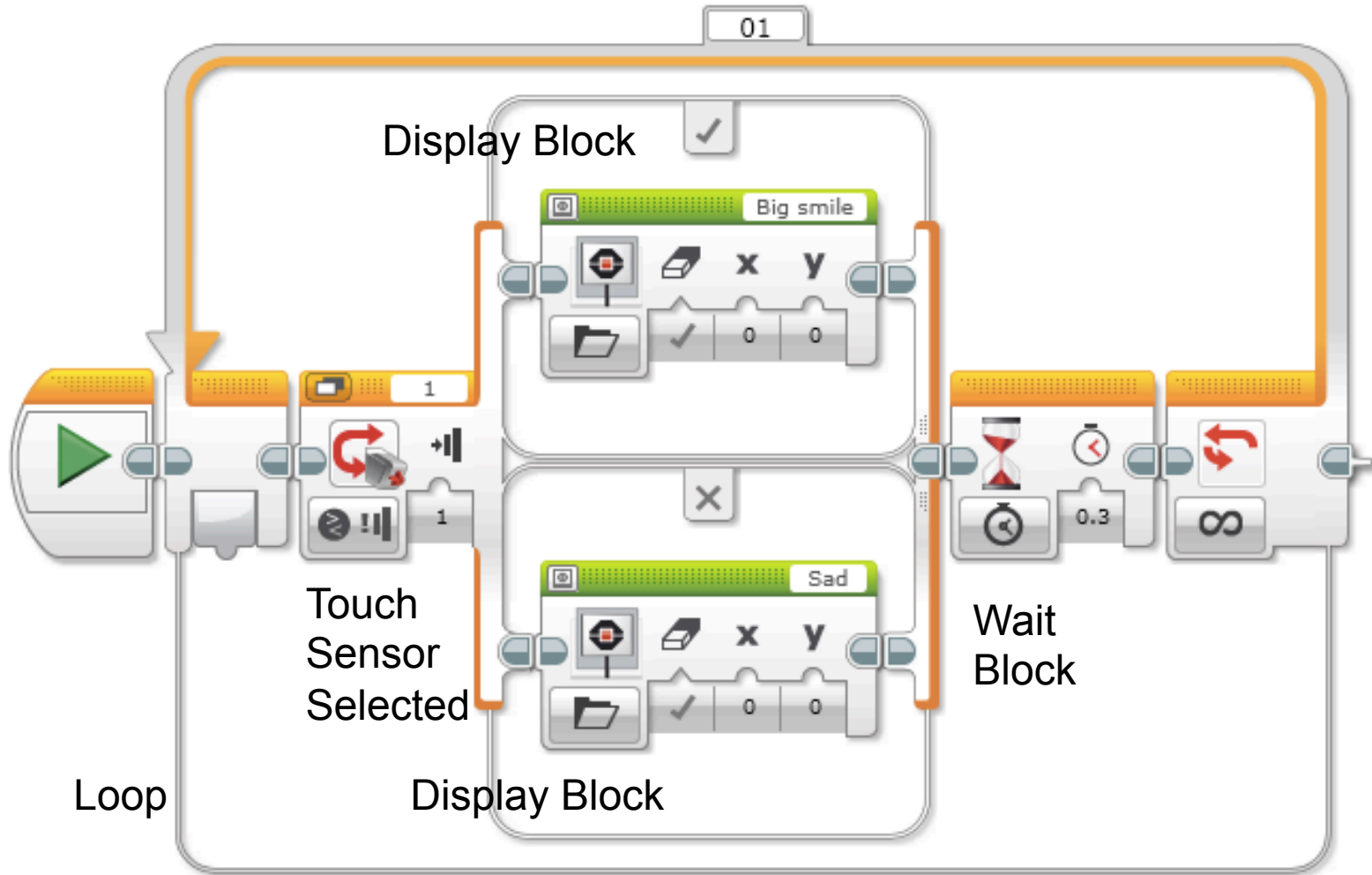
If pressed, your EV3 is happy! Display a smiley face. If not pressed, the EV3 is sad! Display a sad face.

Hint: You will need to use the display block and loops from yesterday and switch blocks from today!
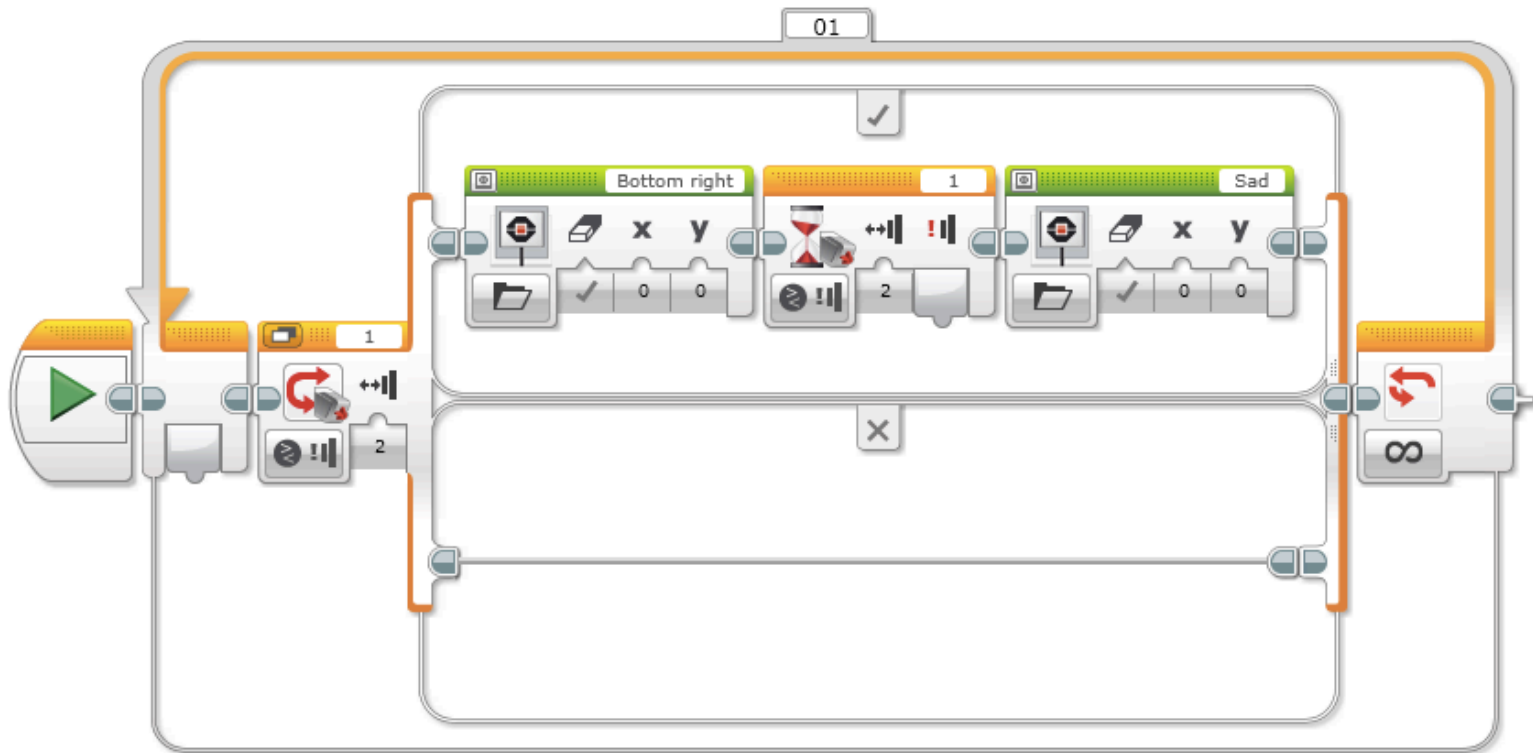
CHALLENGE 1 SOLUTION

Display Block

Big smile

Touch Sensor Selected

Display Block

Sad

Wait Block

Loop

SWITCH BLOCK CHALLENGE 2

Can you write a program that displays a smiley if you touch it once and a sad face if you touch it a second time and toggles back and forth.

CREDITS

- **This tutorial was created by Sanjay Seshan and Arvind Seshan from FLL Team Not the Droids You Are Looking For (Droids Robotics)**

- **We have additional material for more advanced lessons available on request.**

- **Useful tools for FLL teams and robot programmers are available at www.ev3lessons.com**

- **The material is made available to you free of charge. However, we would greatly appreciate a letter indicating that you are using the materials and what you think of them.**

- **Feedback and suggestions are encouraged.**

- **Email: team@droidsrobotics.org**

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