The Finch and Scratch 2.0 Explained
Software, Blocks and Examples

- Documented in Scratch 2.0 by Janet Dee
- Explanations of commands and picture of Finch sourced from www.finchrobot.com/software/scratch
- Outline picture of Finch created by Sam Bacon, RMHS student

Janet Dee
Reading Memorial High School
Reading MA 01867
Rev 1.0, 11/17/2013

First Steps

Instructions for installation of software and robot server necessary to connect a Finch Robot with Scratch are available on the Finch website:

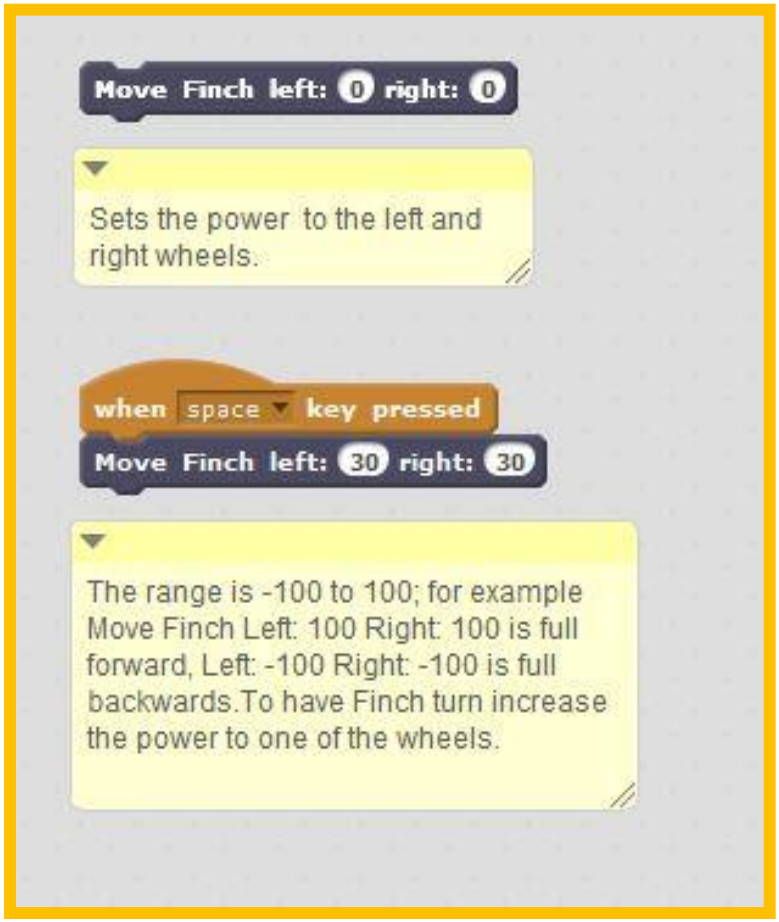
http://www.finchrobot.com/software/scratch

As noted on the website, the Finch currently only works with the Scratch 2.0 offline editor. The Scratch Team expects to have experimental extensions available with the web version in early 2014.

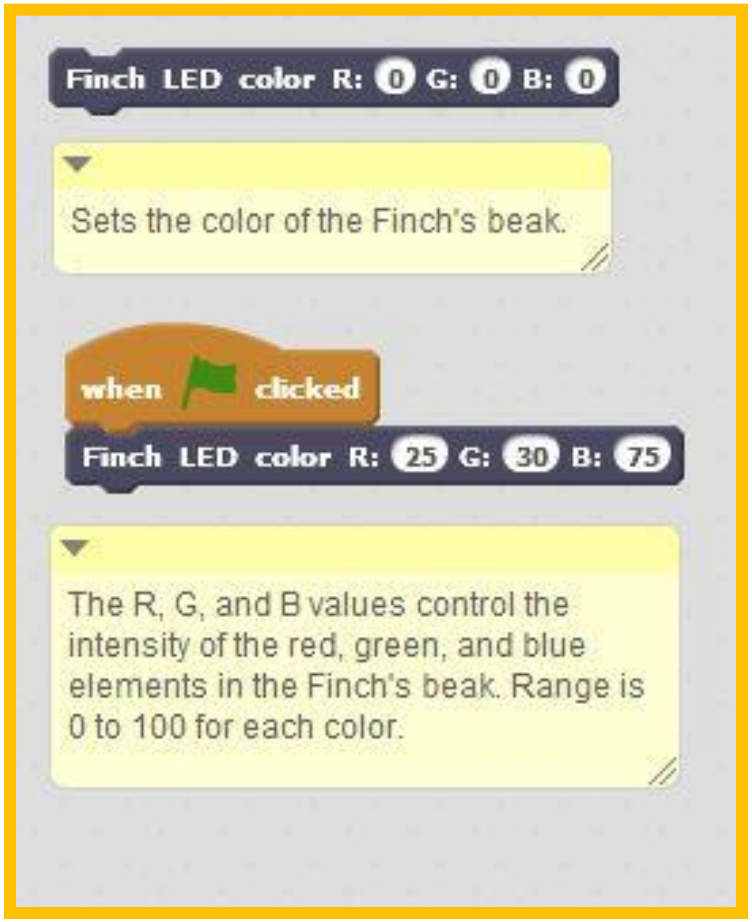
FINCH BLOCK DESCRIPTIONS

Descriptions were prepared in the same manner as the Tips for Blocks in Scratch. The block is defined and then a sample script is provided. Additional clarifications and images are included as needed.

Motor Commands



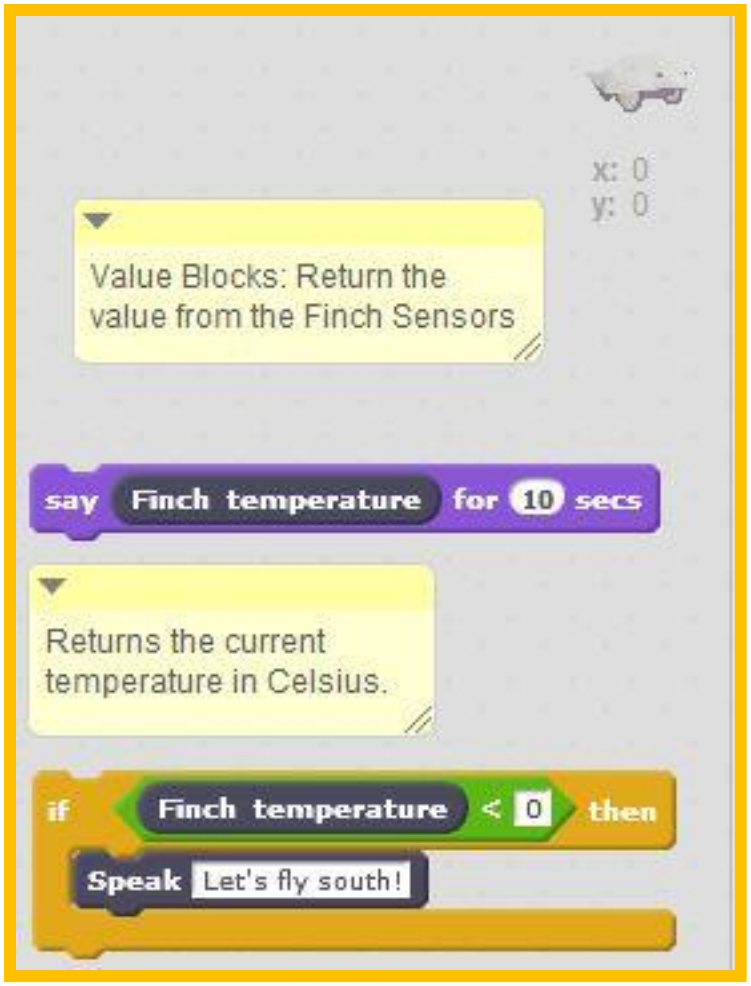
LED Commands



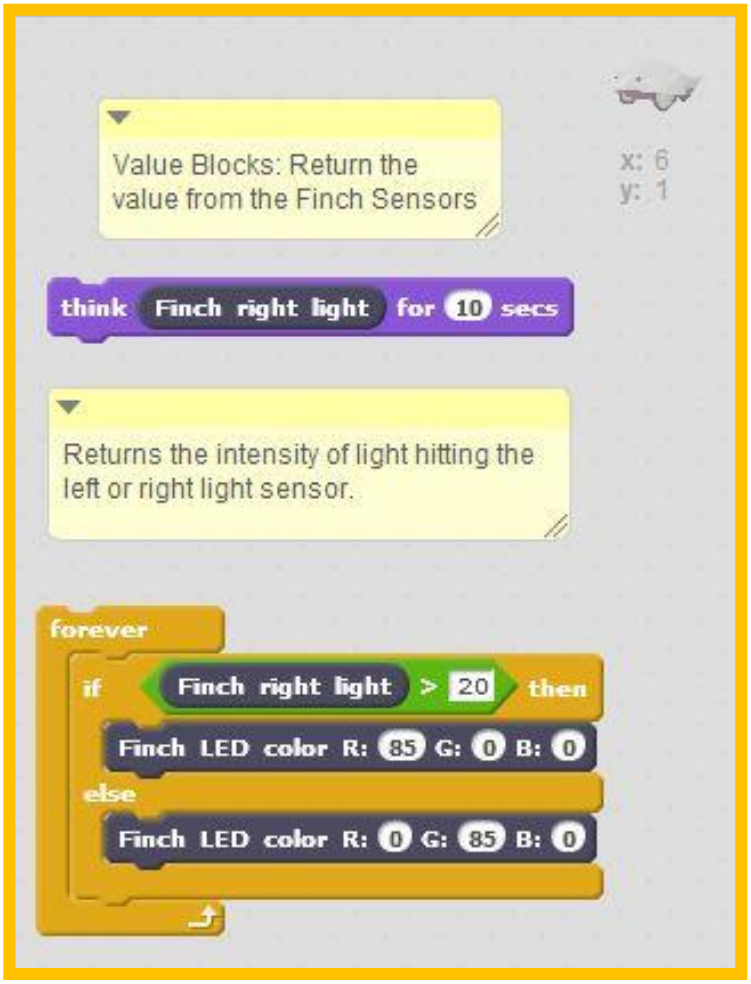
Sound Command

Speak Command

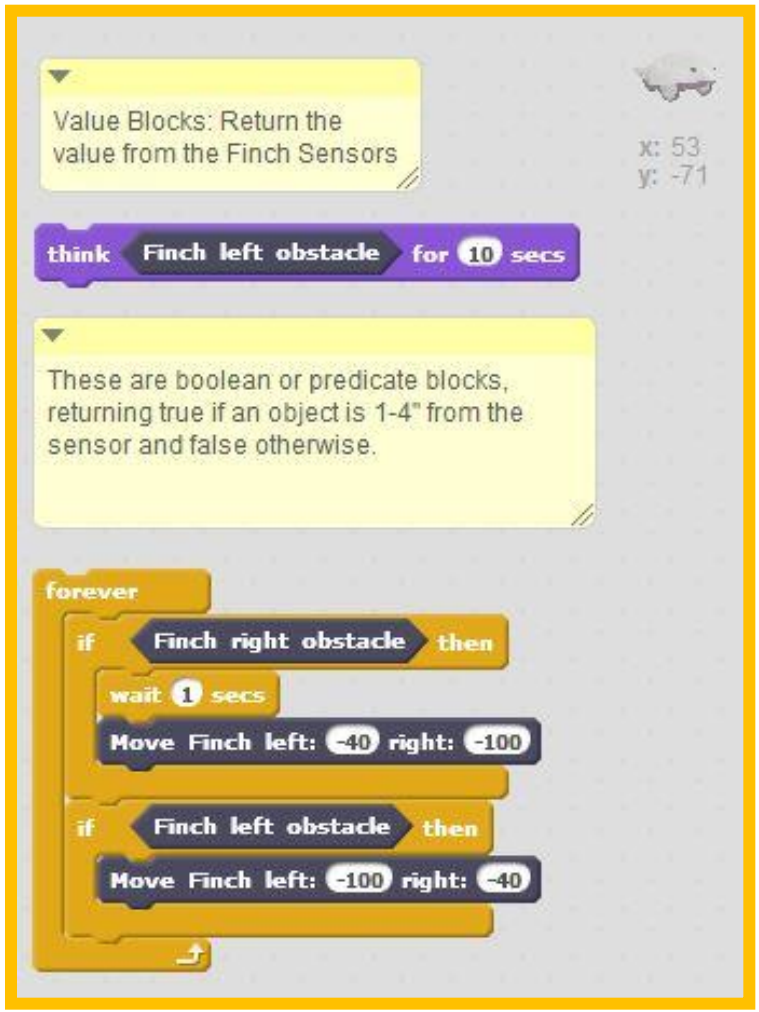
SENSING COMMAND -TEMPERATURE-



SENSING COMMAND -LIGHT-

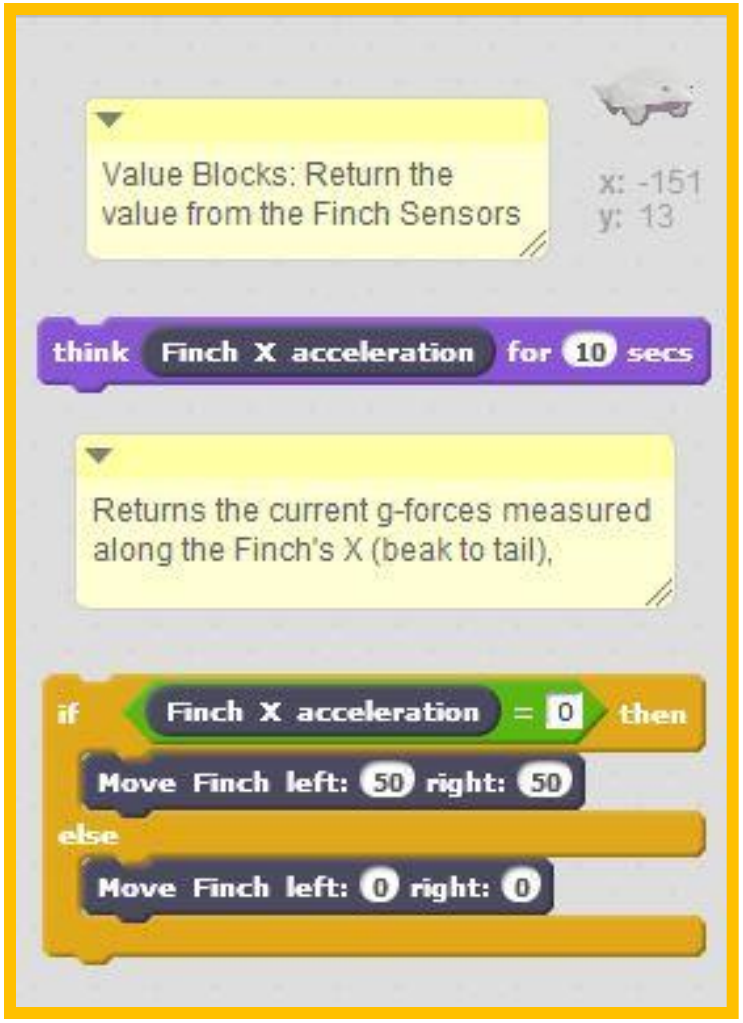


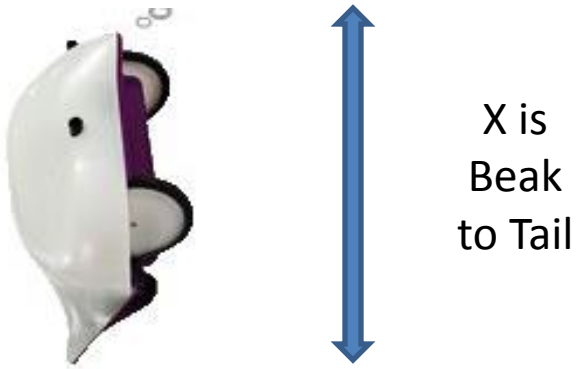
SENSING COMMAND – OBSTACLE



or

SENSING COMMAND – X ACCELERATION

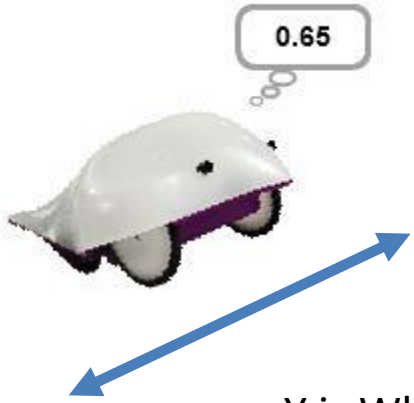




X is Beak to Tail

Built in accelerometer returns values from -1.5 to 1.5. In this case the X acceleration is approaching it's maximum negative value.

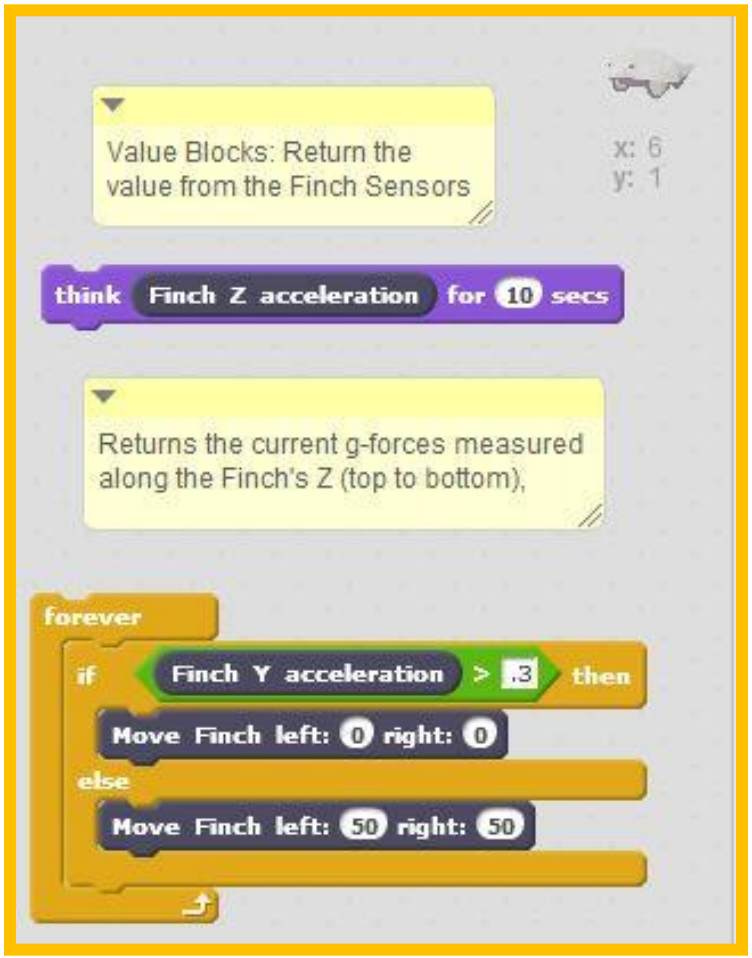
SENSING COMMAND – Y ACCELERATION



Y is Wheel to Wheel

Built in accelerometer returns values from -1.5 to 1.5. In this case the Y acceleration has a positive value.

SENSING COMMAND – Z ACCELERATION

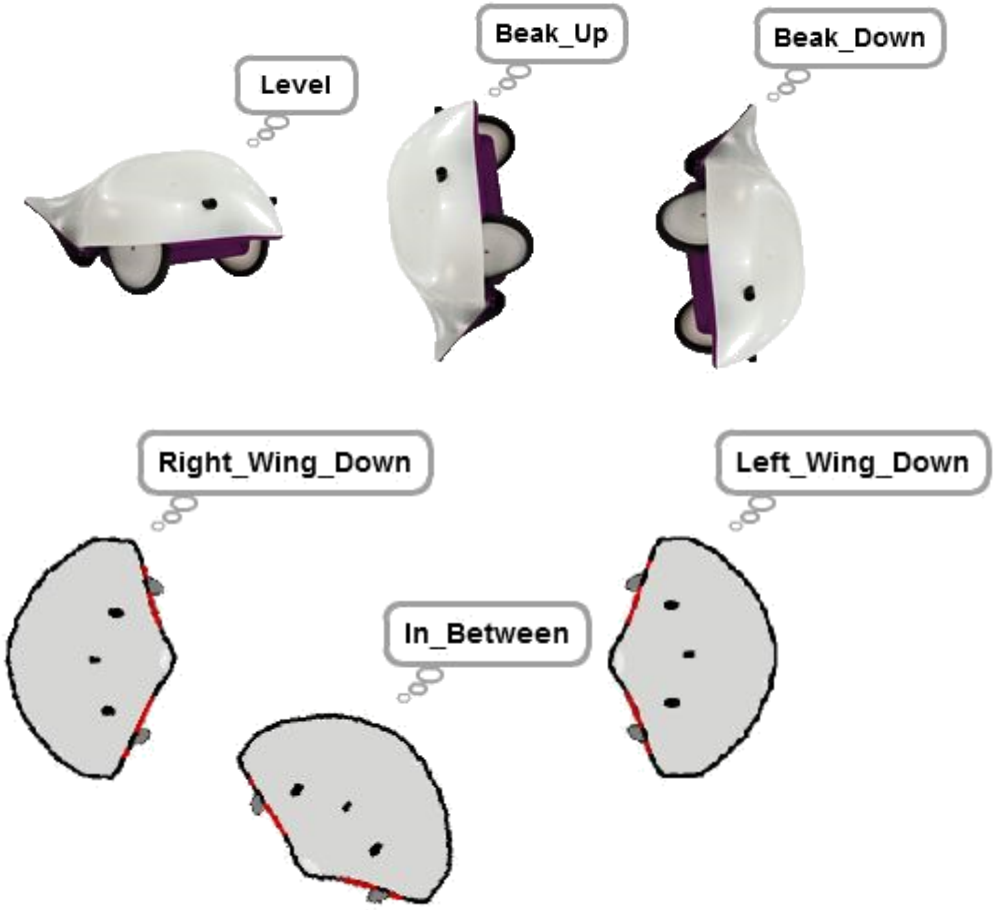


Z is Top to Bottom

Built in accelerometer returns values from -1.5 to 1.5. In this case the Z acceleration returns a value of 1.

Sensing Commands – Orientation

6 Possible Values to Use



EXAMPLE PROGRAMS

Starter Programs from the Finch Robot website:

GraphAccelerometers - This program graphs the values of all the accelerometers over time.

GraphLightTemperatureObstacles - This program graphs the light sensor values and temperature over time, as well as displaying an X if the left or right obstacle sensors are triggered.

ObstacleAvoider - Finch will go straight unless it sees an obstacle, in which case it turns and backs up.

Ideas from the RMHS Students presentation at MassCUE:

- **Ruff Turf:** This program causes the Finch to retreat, turn and bark when an object gets too close.
- **Which Way's Up:** This program uses the Finch Orientation feature to control a sprite's movement on the Scratch stage.
- **To Alaska in One Minute:** Create a program that allows the Finch to sense when it is too cold and time to fly south for the winter.