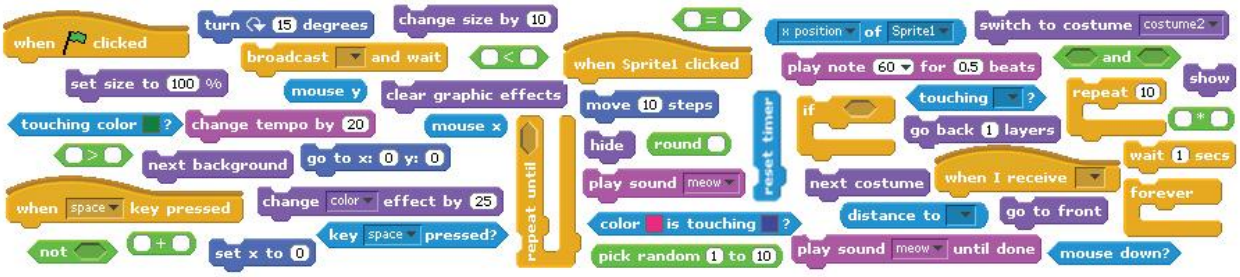
CoderDojo Bray: Week 3

Writing games and animations with MIT Scratch

This lives online here: http://goo.gl/zn4XC



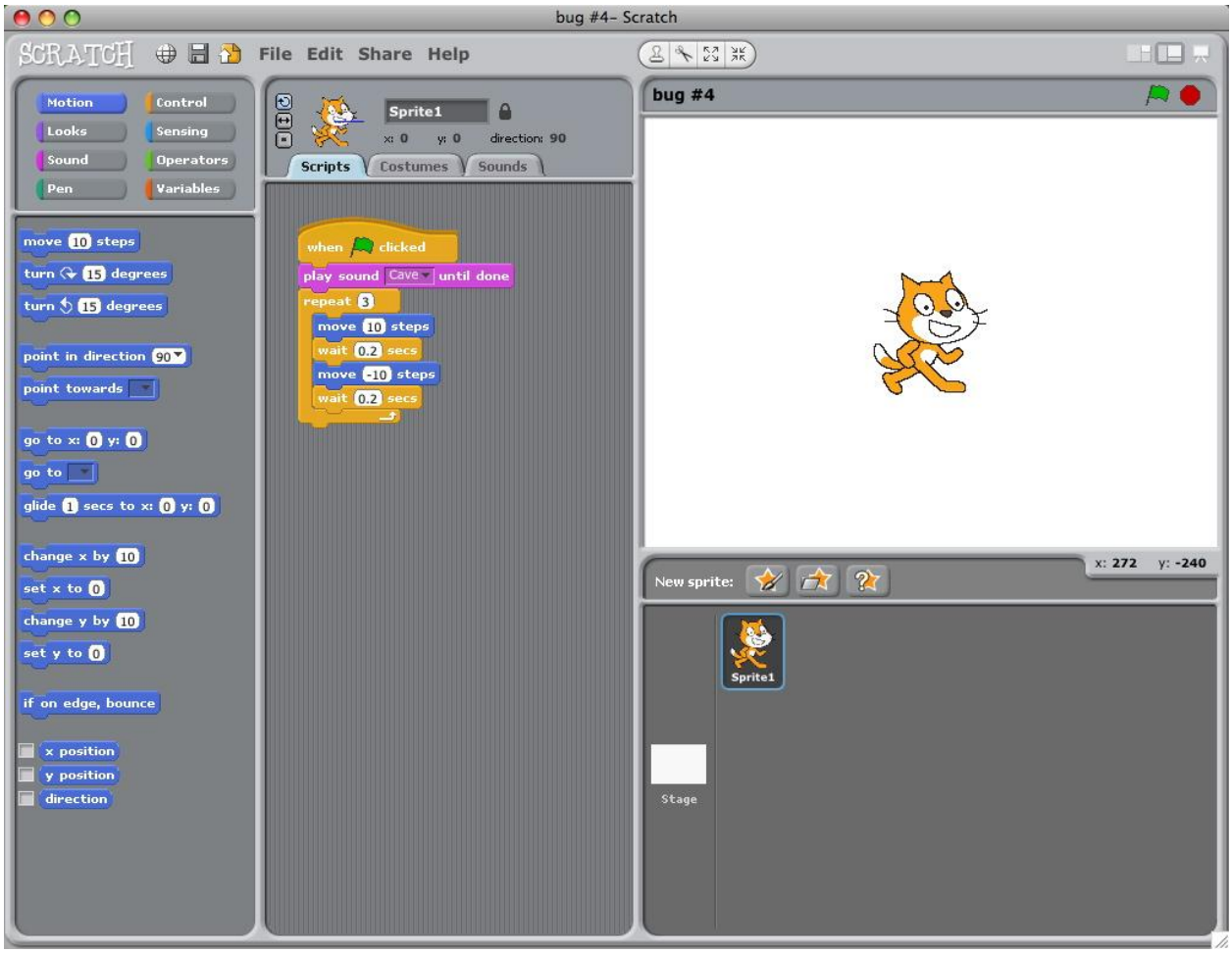
Links

You may be interested in viewing or downloading these projects/examples.

Type	Description	Link
Video	Intro to Scratch video	http://vimeo.com/29457909
Video	Dance #1	http://vimeo.com/28612347
Video	Dance #2	http://vimeo.com/28612585
Video	Dance #3	http://vimeo.com/28612800
Video	Dance #4	http://vimeo.com/28612970
Project	About me	http://scratch.mit.edu/projects/ScratchEdTeam/2041660
Project	Dance party	http://scratch.mit.edu/projects/ScratchEdTeam/2041671
Project	Square, circle	http://scratch.mit.edu/projects/ScratchEdTeam/2042075
Project	Build-a-band	http://scratch.mit.edu/projects/ScratchEdTeam/2042276
Project	Automatic drawing	http://scratch.mit.edu/projects/ScratchEdTeam/2042282
Project	Conversation	http://scratch.mit.edu/projects/ScratchEdTeam/2042349
Project	Scenes	http://scratch.mit.edu/projects/ScratchEdTeam/2042673
Project	Slideshow	http://scratch.mit.edu/projects/ScratchEdTeam/2042695
Project	Debug it #1	http://scratch.mit.edu/projects/ScratchEdTeam/2042697
Project	Debug it #2	http://scratch.mit.edu/projects/ScratchEdTeam/2042703
Project	Debug it #3	http://scratch.mit.edu/projects/ScratchEdTeam/2042706
Project	Debug it #4	http://scratch.mit.edu/projects/ScratchEdTeam/2042712
Project	Debug it #5	http://scratch.mit.edu/projects/ScratchEdTeam/2042724
Project	Maze	http://scratch.mit.edu/projects/ScratchEdTeam/2042736
Project	Maze Extension: Score	http://scratch.mit.edu/projects/ScratchEdTeam/2042755
Project	Maze Extension: Timer	http://scratch.mit.edu/projects/ScratchEdTeam/2042761
Project	Maze Extension: Enemies	http://scratch.mit.edu/projects/ScratchEdTeam/2042763
Project	Maze Extension: Levels	http://scratch.mit.edu/projects/ScratchEdTeam/2042764
Project	Maze Extension: Rewards	http://scratch.mit.edu/projects/ScratchEdTeam/2042770
Project	Collide	http://scratch.mit.edu/projects/ScratchEdTeam/2042778
Project	Catlibs	http://scratch.mit.edu/projects/ScratchEdTeam/2042781
Project	Scrolling	http://scratch.mit.edu/projects/ScratchEdTeam/2042861
Gallery	Sample Scratch projects	http://scratch.mit.edu/galleries/view/137903
Gallery	Sample arts projects	http://scratch.mit.edu/galleries/view/138296
Gallery	Sample stories projects	http://scratch.mit.edu/galleries/view/138297
Gallery	Sample games projects	http://scratch.mit.edu/galleries/view/138298
Gallery	Maze extensions	http://scratch.mit.edu/galleries/view/138300
Gallery	About me sample projects	http://scratch.mit.edu/galleries/view/138381
Gallery	Dance party sample projects	http://scratch.mit.edu/galleries/view/138382
Gallery	Maze sample projects	http://scratch.mit.edu/galleries/view/138299

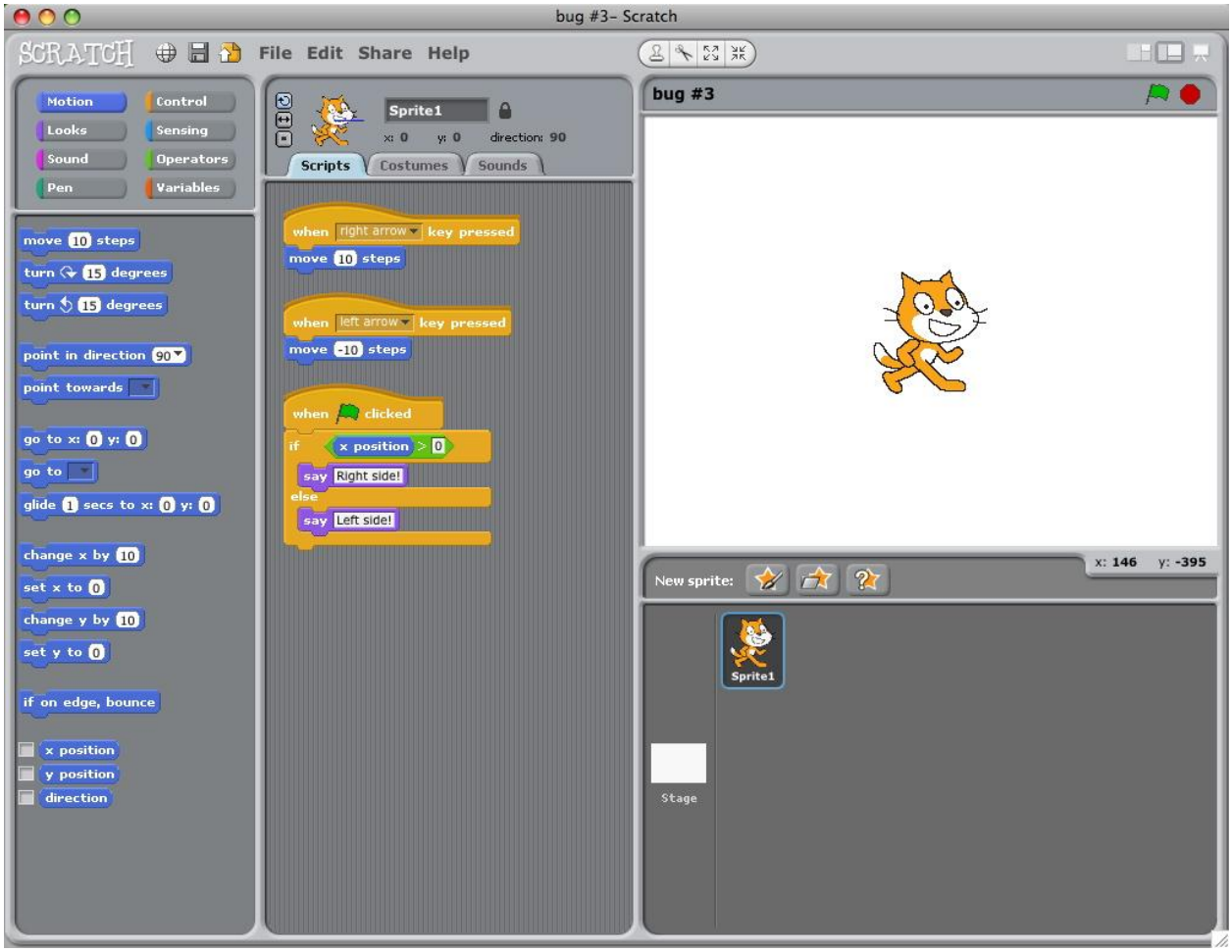
BUG #3

Alex wants his cat to dance to some music. But the cat is dancing after the music is over! What's going on?



BUG #4

Praneetha wants to control the cat's x-position with the keyboard: right arrow moves the cat right, left arrow moves the cat left. She also wants the cat to say if it's on the right side or the left side, depending on its x-position. The cat's moving, but not saying its position correctly! What's going on?



GAMES

Here are some blocks that can be useful in games.

TOUCHING

See if two sprites are touching or if a sprite is touching a color

VISIBILITY

Make a sprite appear or disappear

RANDOM

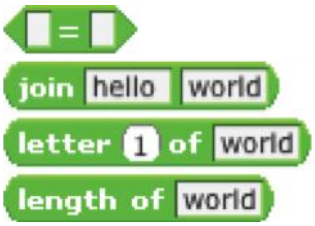
Get a computer-generated number from within a specified range

TIMING

Have the computer keep track of time for you

STRINGS

Test, access, and change words and sentences

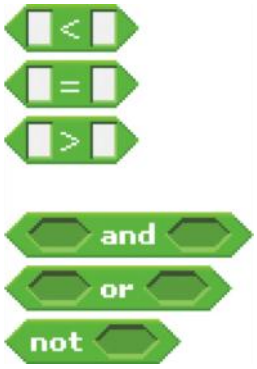


VARIABLES

Store a number or string in a container to access later

COMPARE

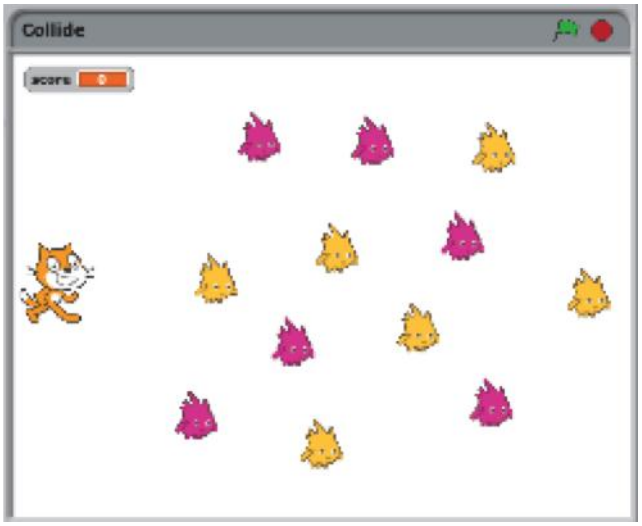
Compare values to help make decisions within your game



KEY PRESS

Make a sprite respond when different keys are pressed

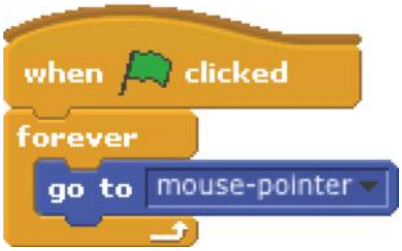
COLLIDE



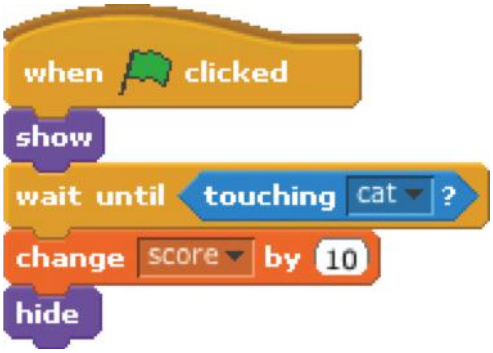
Help the cat navigate a field of Gobos. Collect yellow gobos to earn points, avoid pink gobos to avoid losing points.

no scripts

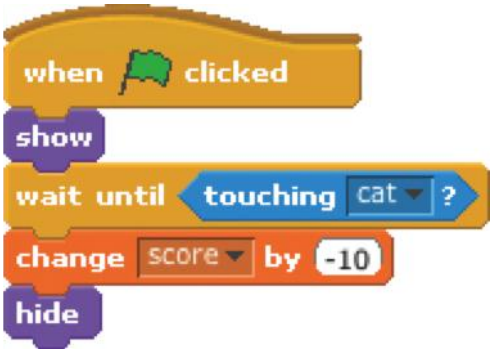
reset the cat's position and the score



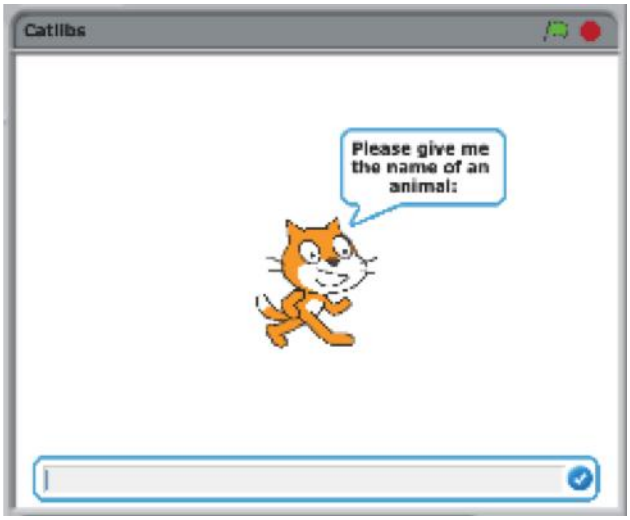
when the cat collides with a yellow gobo, the gobo disappears and the score increases by 10



when the cat collides with a pink gobo, the gobo disappears and the score decreases by 10



CATLIBS



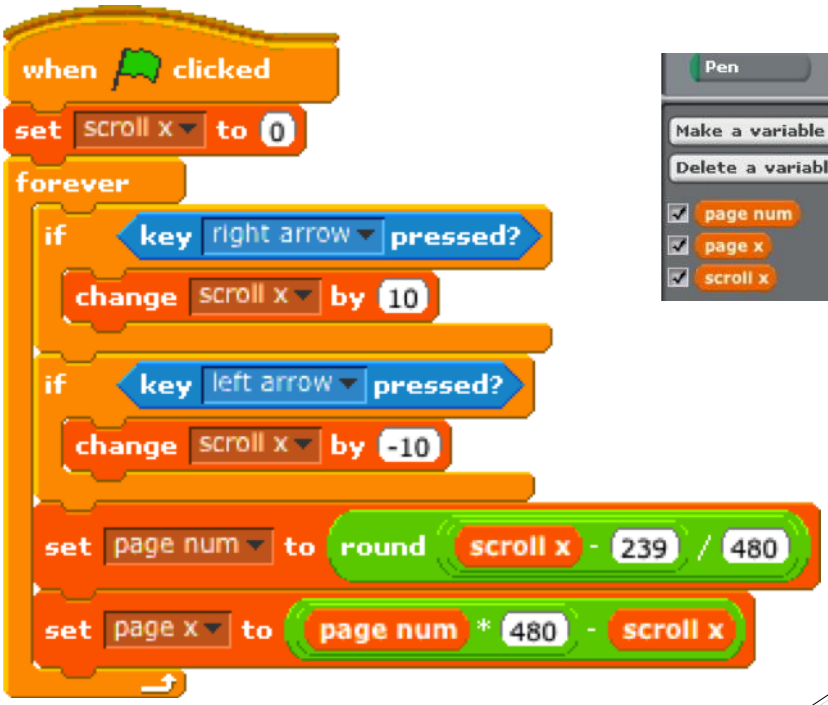
Create a unique Madlib story by collecting user input.

no scripts

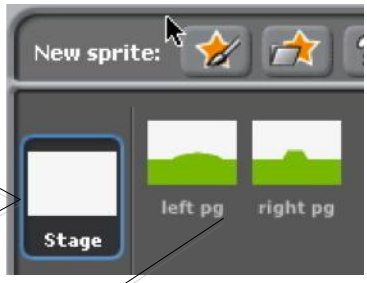
1 script
4 variables

SCROLLING

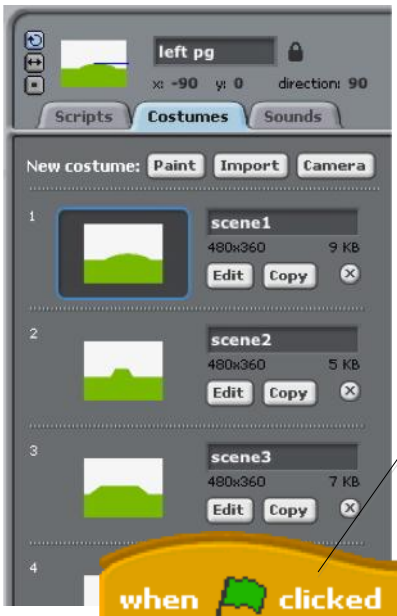
Create the foundation for a side scrolling game.



3 variables



1 script



create two sprites:
one for the left background panel,
one for the right background panel

add the same (2 or more) costumes to each sprite

add this script to the left sprite

add this script to the right sprite

SENSING

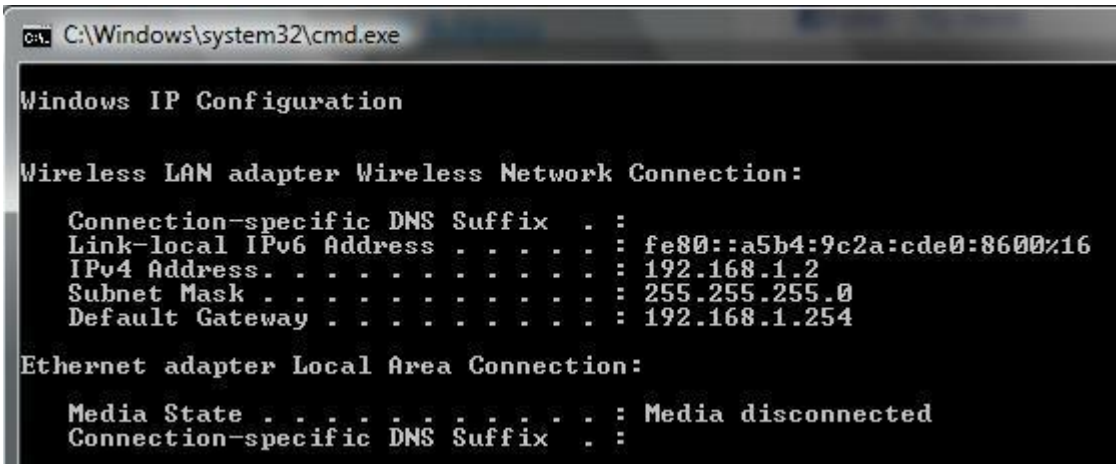
Controlling a game with an Android phone

Connections between Scratch and other programs are made using the Scratch networking protocol. With this feature turned on, Scratch automatically sends all broadcasts and values of global variables out to any program connected to it. That program can also send broadcasts and global variables into Scratch. The **Scratch Sensor** is an Android app that uses the Scratch networking protocol to turn the Android Smartphone into a DAQ module and sends its accelerometer and compass sensor information and broadcast two states (jump and walk) to Scratch.

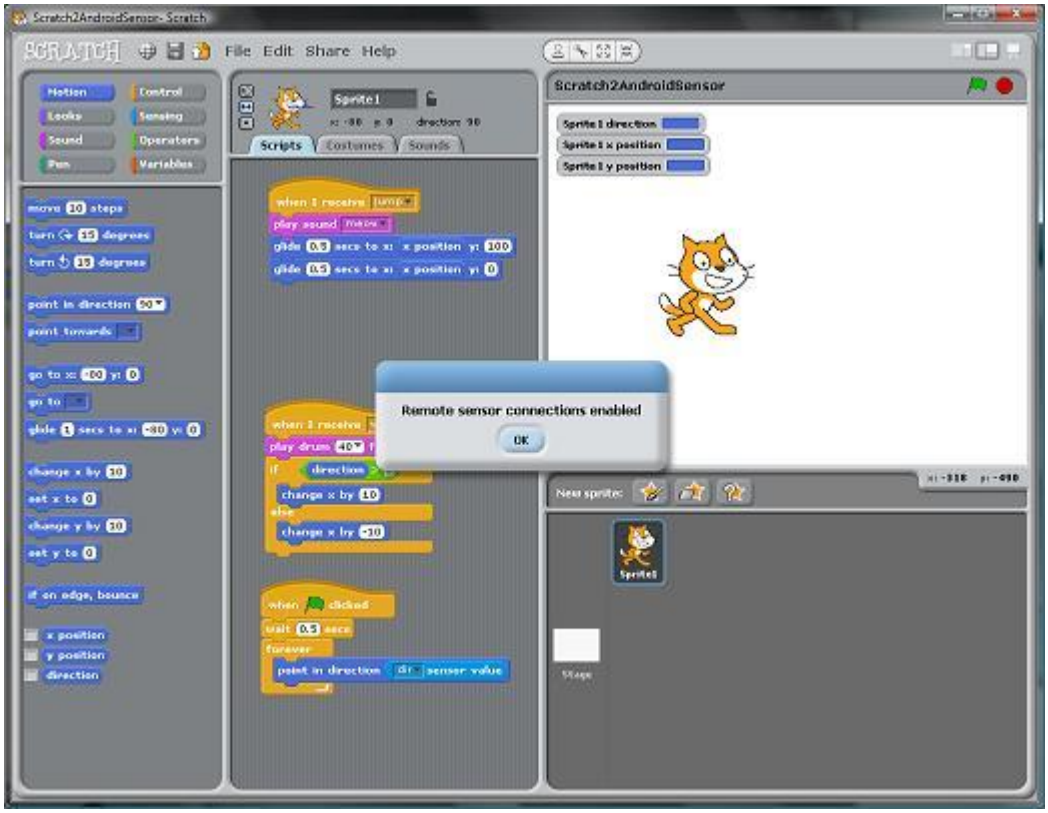
1. Download Scratch Sensor from the Android Market.

2. Download the example Scratch project.

3. Note your Computer IP Address. Click the **Start** icon in the Windows taskbar. Paste **cmd /k ipconfig** into the search bar and press Enter. The screenshot shows the IP Address for the Wireless Network is **192.168.1.2**.



4. Load the example Scratch project. A Remote sensor connections enabled dialog should appear. Click OK. Click the green flag to Start.



5. Start Scratch Sensor on your Android smartphone. If your smartphone wifi is not enabled, you need to enable it now. Enter your Computer IP Address that you obtained earlier. Press the Connect Button. You should see a Connected status.

6. Hold the Android Smartphone in an upright position. When you rotate the phone, the direction value should change. The sprite faces only left and right due to the sprite setting (see Scratch programming).
7. When the phone is moved up and down, the jump message is broadcast.
8. When the phone is moved side to side, the walk message is broadcast.

To find out more, see: http://www.smartphonedaq.com/scratch-sensor.page