CoderDOJO Athenry Platform game tutorial

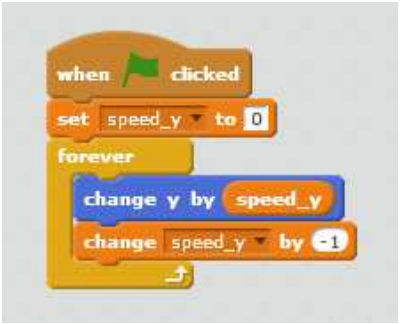
Contents

These are the instructions for a basic platform engine. This engine can be used to do all sorts of games – examples of famous platform games including Mario, Doodle-Jump and many many others! It's a fantastic type of game to be able to do.

1. Gravity

Gravity reduces your "Y". However this gravity isn't realistic as with real gravity, things get faster and faster as they fall. This is called acceleration!

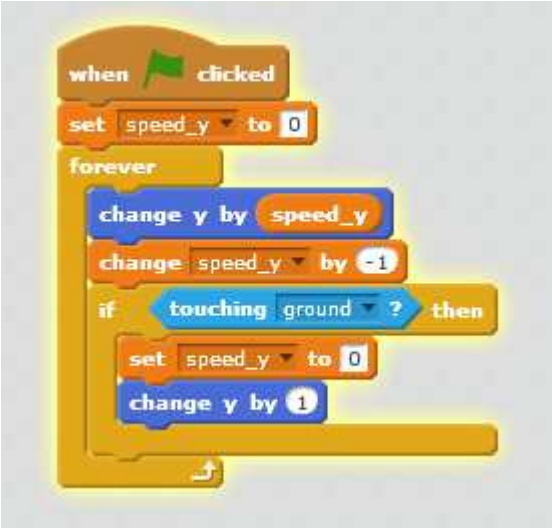
2. Add acceleration



This way, we are continuously getting faster. Your speed keeps increasing forever.. we need a ground!

First we draw a ground:

Next we write a script that makes him “come out” of the ground after he hits it. Remember, the faster he is falling, the deeper he will be into the ground when he hits it.



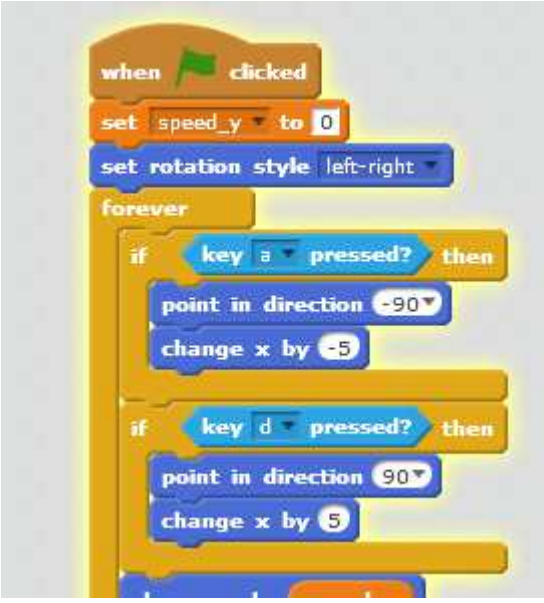
This works great, but you can see him come up out of the ground which is weird!. Custom blocks are the answer!

3. Fix the ground slide bug

Let’s convert this code to a block so we can come out of the ground without screen refreshes. Your computer is so fast that this will appear instant.

Remember to click “run without screen refresh!”

4. movement – left and right

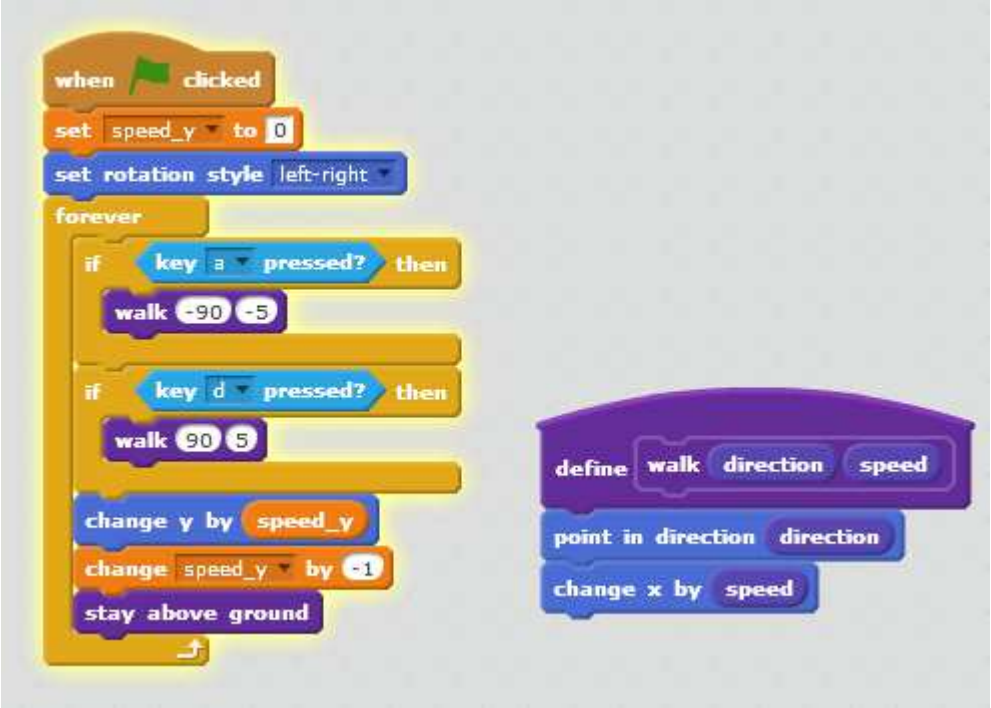


This does the trick, but we pretty much have the same code in two places. Remember the coding rule?

D.R.Y = DON’T REPEAT YOURSELF

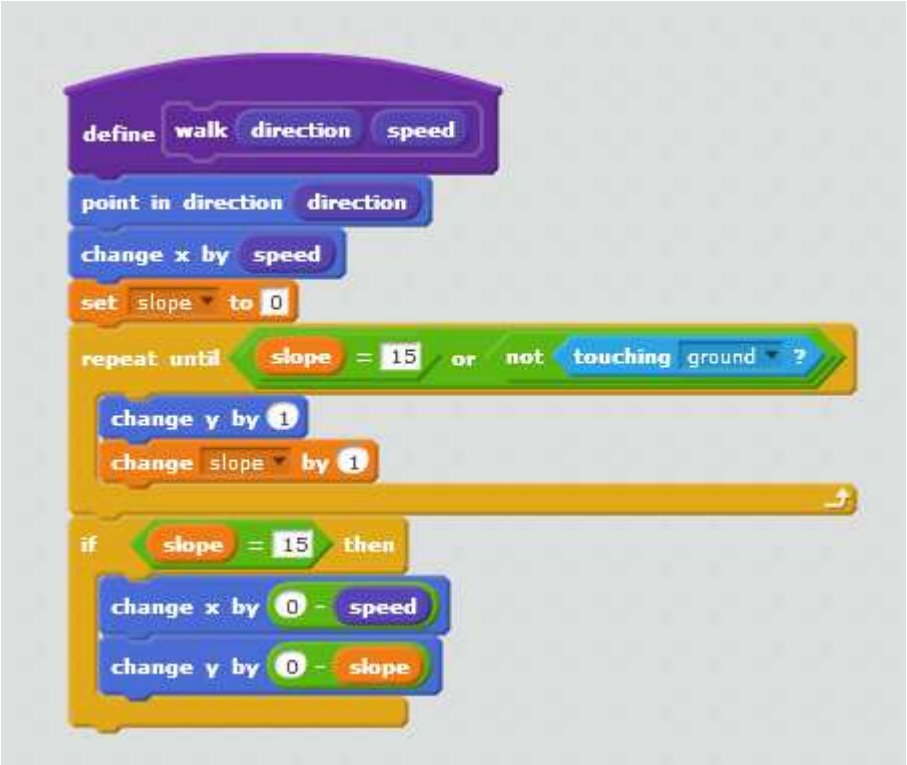
Anywhere you see code like this, it's a good idea to create a custom block.

5. Custom Block for Walking:



This means that as we add more checks in walking, it will be really easy to put it in one place. We are about to do that below to solve the "popping up on top of a pillar" problem.

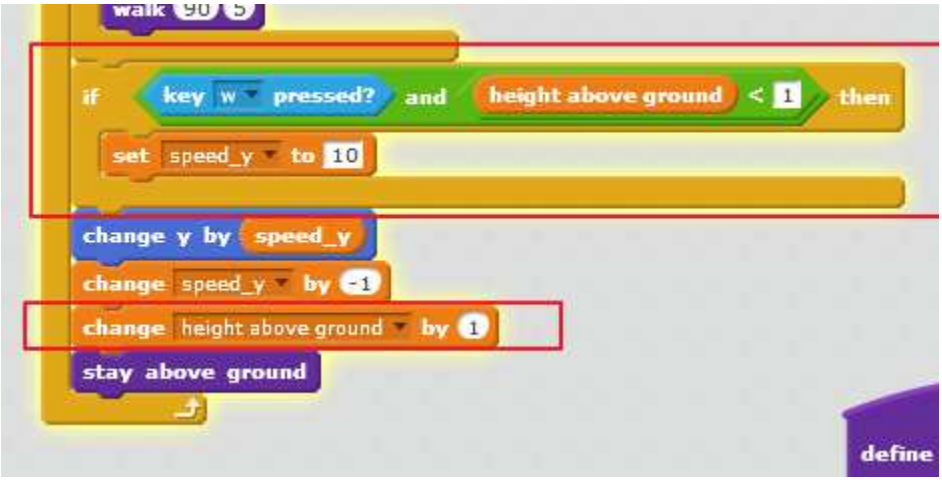
6. Maximum height for walls

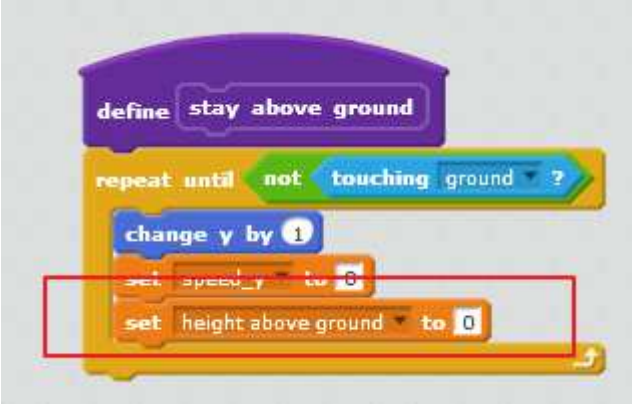


7. Jumping

Easy way!

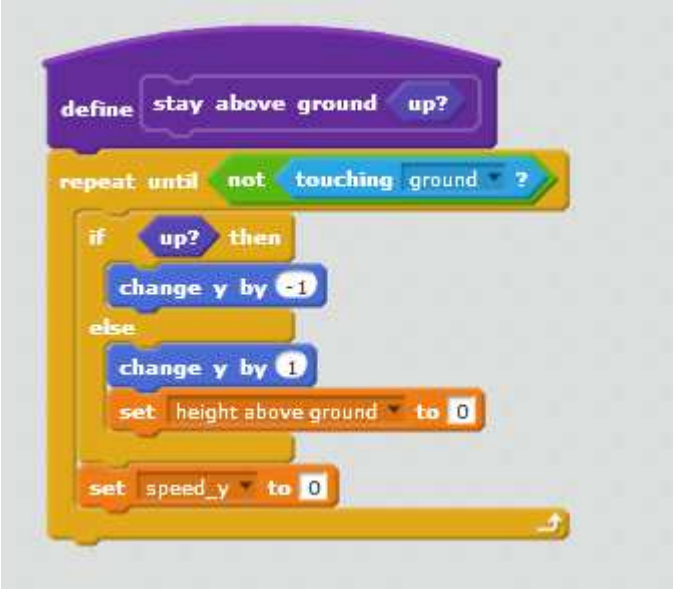
Better.. to avoid the double hops create a variable called “height above ground” that gets bigger when I’m not touching the ground. Only let the jump button work if this is small enough that you might be touching the ground. This makes sense right, you can’t jump when you’re in the air?





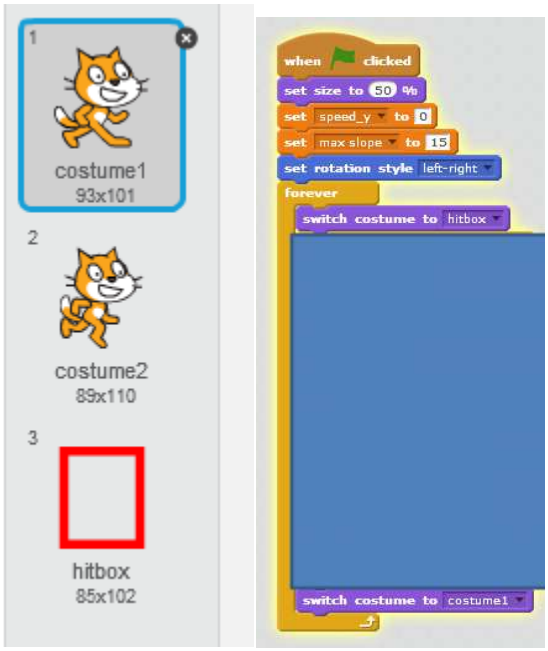
8. Ceilings

Ceilings – this is a tough one! We do the same as we do for falling, except we move the other way. Add a "Boolean" input to the block – for some reason this speed y > 0 check doesn't work from within the custom block – haven't quite figured out why yet!!



9. Add a hitbox

Another problem you might have noticed is that your cat gets caught on his whiskers, etc on ledges. Let's fix that by using a simple hitbox.


1
costume1
93x101
2
costume2
89x110
3
hitbox
85x102
when clicked
set size to 50 %
set speed_y to 0
set max slope to 15
set rotation style left-right
forever
switch costume to hitbox
switch costume to costume1

Full Script for week 1: