Crazy Cat Claws

A game where you control a cat who wants to knock birds out of the sky. Attack the birds with your crazy cat claws!


Create a new Project

1. Go to scratch.mit.edu
2. Sign in or Join Scratch (Upper right corner)
3. Click Create (Upper left corner)

Task One - Let's make the cat move

What we want is for the cat to move across the bottom of the screen.

- Pressing and holding "A" should make the cat walk left
- Pressing and holding "D" should make the cat walk right

Instructions
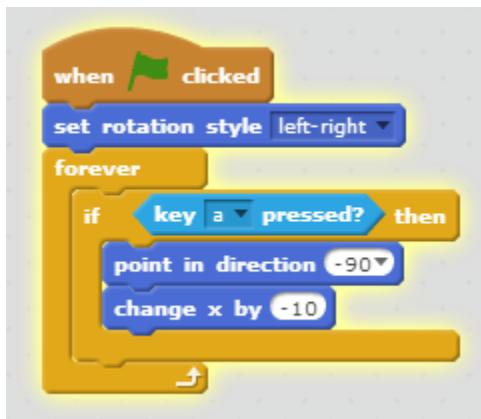
1. Copy the above script into your Cat sprite
2. Click the green flag
3. Press a. Does the cat move?
4. Press d. Hmm… it doesn't seem like the cat moves the other way…
5. Fix this code to make the cat move right when you press "d"

Important information:

- Scratch uses a coordinate system (http://wiki.scratch.mit.edu/wiki/Coordinate_System). To make the cat move right, you have to change his "x" coordinate by a positive value. To make the cat move left, you have to change his "x" coordinate by a negative value.
- "Set rotation style left-right" allows us to flip the cat when we change his direction so he looks like he is pointing in the same direction he is walking. Try changing this for a minute to see how funny full rotation would make it look! You can read more about rotation style on the Scratch wiki: http://wiki.scratch.mit.edu/wiki/Rotation_Style.

Tips + Tricks:

- You can make the cat smaller by using the "shrink" tool (arrows pointing in) at the top of the screen (next to the scissors, expand, and question mark)
- You can rename "Sprite1" to "Cat" or maybe the name of your favorite cat.
    - On the left hand side in the "Sprites" section, you should see Sprite1, click that and click "i" in the corner of it.
    - Type a new name in the text box.
    - Click the Left arrow in the same place where you pressed the "I"
- You can duplicate code blocks by right clicking on it and pressing duplicate, or by going to the top of the screen and hitting the stamp.
- We could've used the event "When key pressed", but that would make the cat pause for a second after pressing the key.

Bonus challenges
+2 - Make the cat walk when he moves.

    - Hint 1: Maybe a block in "Looks" will help you
    - Hint 2: Notice he already has another costume.

+1 - Change the backdrop to something you want.

    - On the left hand side you can click on "Stage".
    - At the top of the screen, go to the "Backdrops" tab.
    - Here you can paint whatever you want on the backdrop. Maybe the cat is in a nice field with a sunny sky? Or maybe birds will be flying into a house through a window? It's up to you!

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Task Two – Fire some claws

Before doing this step, your Cat sprite should have:
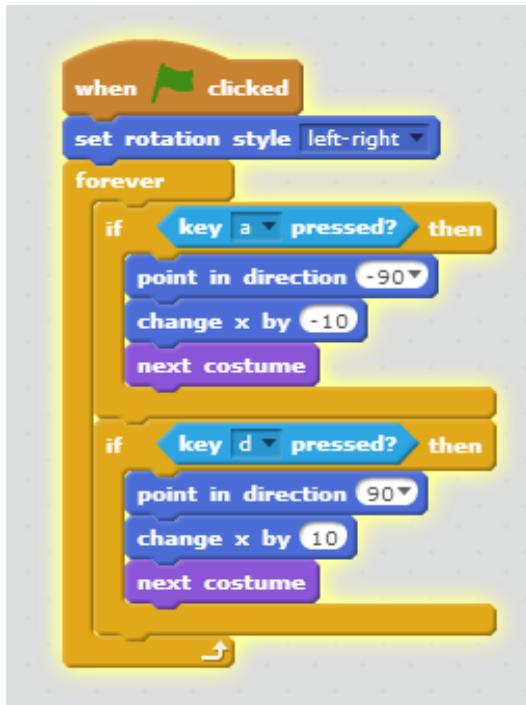
Task

We want to be able to shoot our claws at birds.

- When "w" is pressed, shoot a cat claw up in the air.

Instructions

Make your cat claw.

1. Make a new sprite. We need cat claws.
    a. Choose paint a new sprite so we can draw it ourselves.
2. You can draw it however you want. It could be just a circle, or you can draw a complex claw.
3. Rename the sprite to "Claw"

Tips and tricks

- You can get the color of the cat by going to the Cat sprite, costume tab, and clicking on the color-picker next the colors at the bottom and clicking on the cat.
- You can make the claw smaller on the game screen by clicking on it with the "shrink" tool

Make claw move. The claw should go up until it hits the top of the screen and then destroy itself.
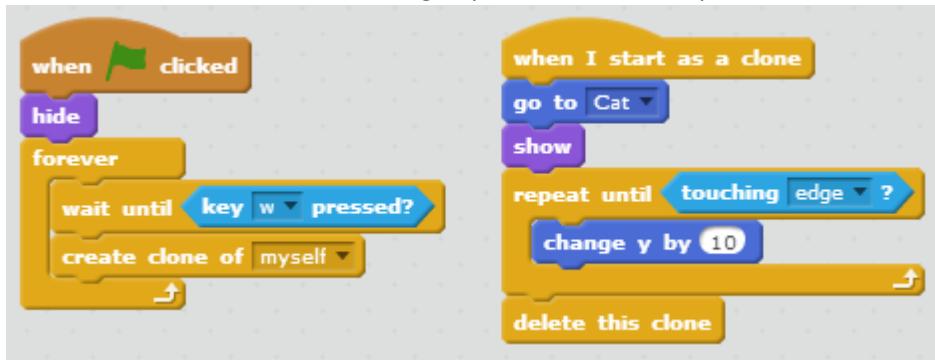
1. Paste the above script into your Claw sprite.
2. Play around with it. You should be able to move and shoot at the same time!
3. Look how fast it fires though? That might be too fast. Look at the script under the green flag and see if you can figure out why we shoot so many claws.
4. You can fix this by making a semi-automatic projectile. See http://wiki.scratch.mit.edu/wiki/Shooting_Projectiles
   a. Hint: wait until "w" isn't pressed anymore.

Let's make the bird

1. Create the bird sprite. You can create it from a picture.
2. Create a script for the bird to make the bird move across the screen from left to right.

Tips and tricks

- The claws fly up, the birds fly left. Should the birds change x or y?

Bonus Challenges

+3 – Create a variable for Ammo and make it decrease when you shoot!

+3 – Make the bird flap its wings when it moves

Task Three – Hit the bird

Your bird sprite should have this by now:

Goal

- Make the bird disappear when it is hit or reaches the end of the screen.
- Give the player points when his claw hits a bird

Instructions

1. We can make the bird clone itself over and over again, waiting a second between each time.
2. We can make the bird start on the left hand side of the screen
3. Let's change the forever to a repeat until the bird touches an edge.
4. After the repeat loop, we can delete the bird.
5. Inside the loop, we should see if it is touching a claw
6. If it is touching a claw, we can delete the clone.
7. We can make a variable called "P1 Score". Set this to 0 when the flag is clicked.
8. Then if the bird touches the claw, we can give the player points.

The script for the Bird ends up looking something like this:
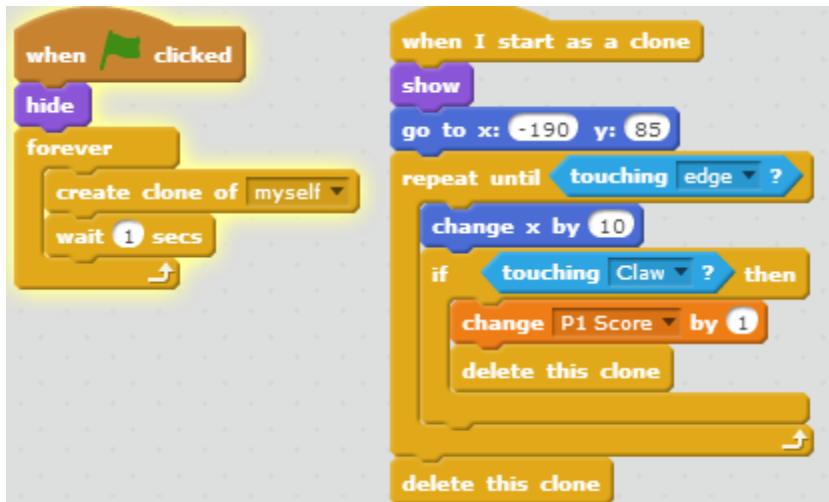
Bonus Challenges

+1 – When the game starts, set the "P1 Score" to 0.

+2 - Right now when the bird touches the edge, it just disappears. Make the bird fly smoothly off the edge.

+1 – Make the bird start at a random y-value

+3 – Use More Blocks to make a block to fly. Then put the part of the script that makes the bird fly under the fly block.

Catch Up

Here is everything you should have by now in one page:

Bird:
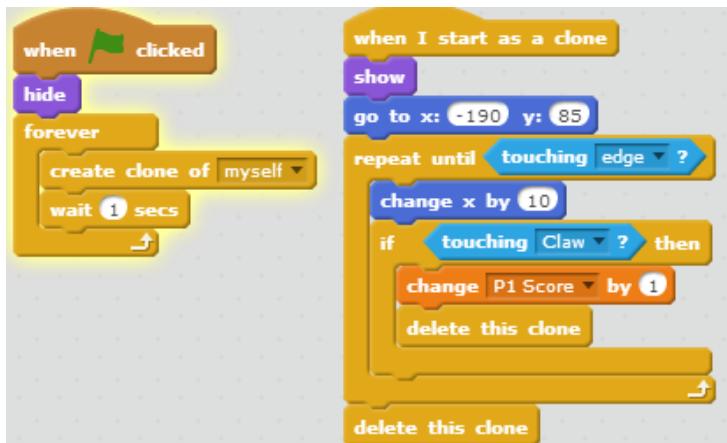
Cat:
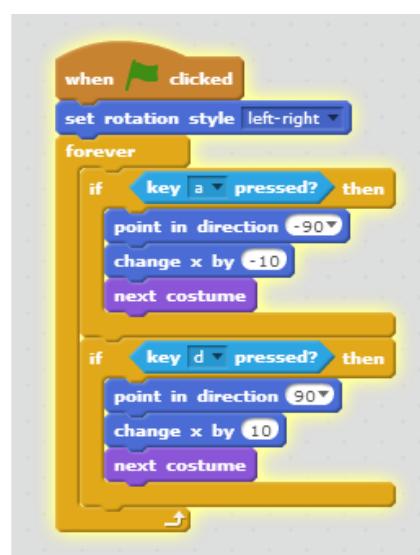
Claw:
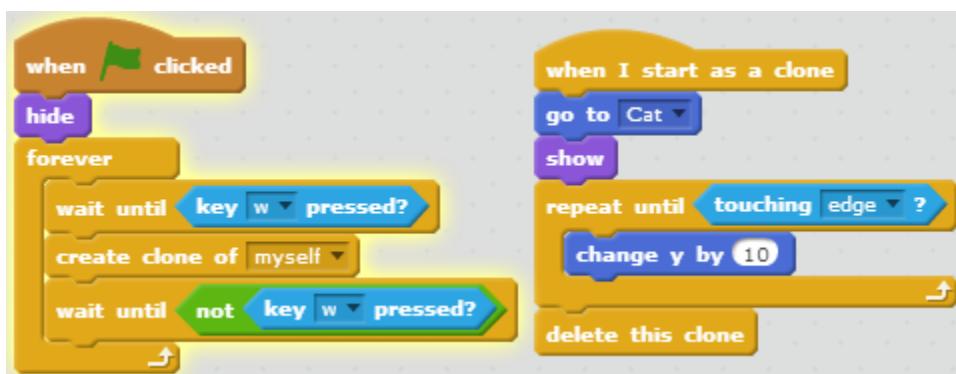
Task 4 – Let's make the game harder

It's really easy now. How to make the game harder?

- Birds with random speeds
- Give the cat something else to do: Catch the bird!

Let's give the bird random speeds.

1. Create a new variable called speed. Select "For this sprite only"
   a. Next to the variable in the data menu, uncheck the box to remove it from the screen.
2. When the bird starts as a clone, set the speed to a random value (between 5 and 15 seems to be good, but you can do anything)
3. Instead of changing x by 10, change it by speed.
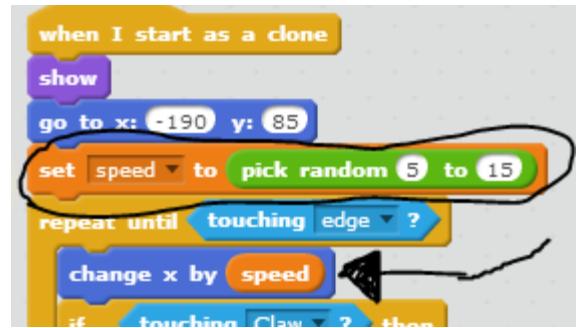
Let's make the bird fall

1. Go to more blocks. Make a new block called "Fall"
2. When the bird gets hit, make it fall.
3. Falling just means to make it go down until it hits the edge
   a. I chose to make it keep flying forward too.
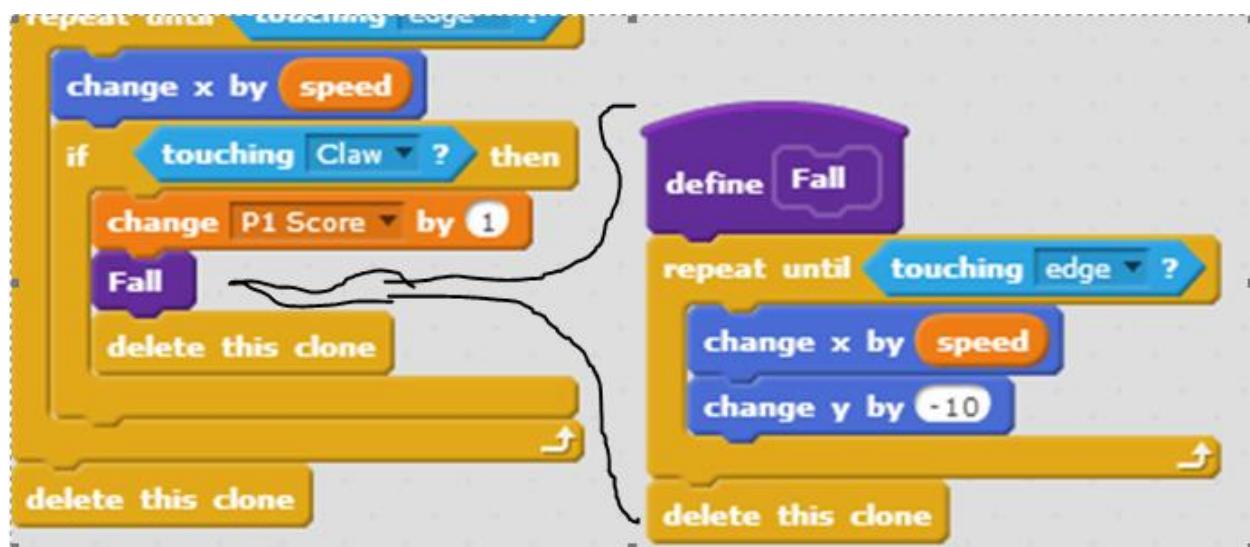
Bonus challenges

+3 – Give the player points for touching the bird when it falls

+4 – Right now, the bird falling is very unrealistic. Make the bird fall with gravity.

- To do this you can make a variable for "fall speed", and while it's falling, change fall speed by a small number. Then instead of changing y by -10, you can change it by (-1 * "fall speed")

Now it's a fairly complete game but can you make it better?

Easy:
- Make the player be able to speed up by pressing space
- Shooting/Catching Faster birds give more score
- Birds come faster when your score is higher
- Birds speed up as your score gets higher

Medium:
- Birds flying the opposite way
- Birds you aren't allowed to attack
- Shooting some other projectile with "s" key
- New type of bird immune to claws
- Animations when you catch a bird

Hard:
- 2nd cat that uses Arrow Keys to move and shoot (2 Player)
- Birds that pour water on the cat
- Red birds are poison for the cat if he catches them

All bonus challenges in one place:

Task 1

+2 - Make the cat walk when he moves.
- o Hint 1: Maybe a block in "Looks" will help you
- o Hint 2: Notice he already has another costume.

+1 - Change the backdrop to something you want.
- o On the left hand side you can click on "Stage".
- o At the top of the screen, go to the "Backdrops" tab.
- o Here you can paint whatever you want on the backdrop. Maybe the cat is in a nice field with a sunny sky? Or maybe birds will be flying into a house through a window? It's up to you!

Task 2

+3 – Create a variable for Ammo and make it decrease when you shoot!

+3 – Make the bird flap its wings when it moves

Task 3

+1 – When the game starts, set the "P1 Score" to 0.

+2 - Right now when the bird touches the edge, it just disappears. Make the bird fly smoothly off the edge.

+1 – Make the bird start at a random y-value

+3 – Use More Blocks to make a block to fly. Then put the part of the script that makes the bird fly under the fly block.

Task 4

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