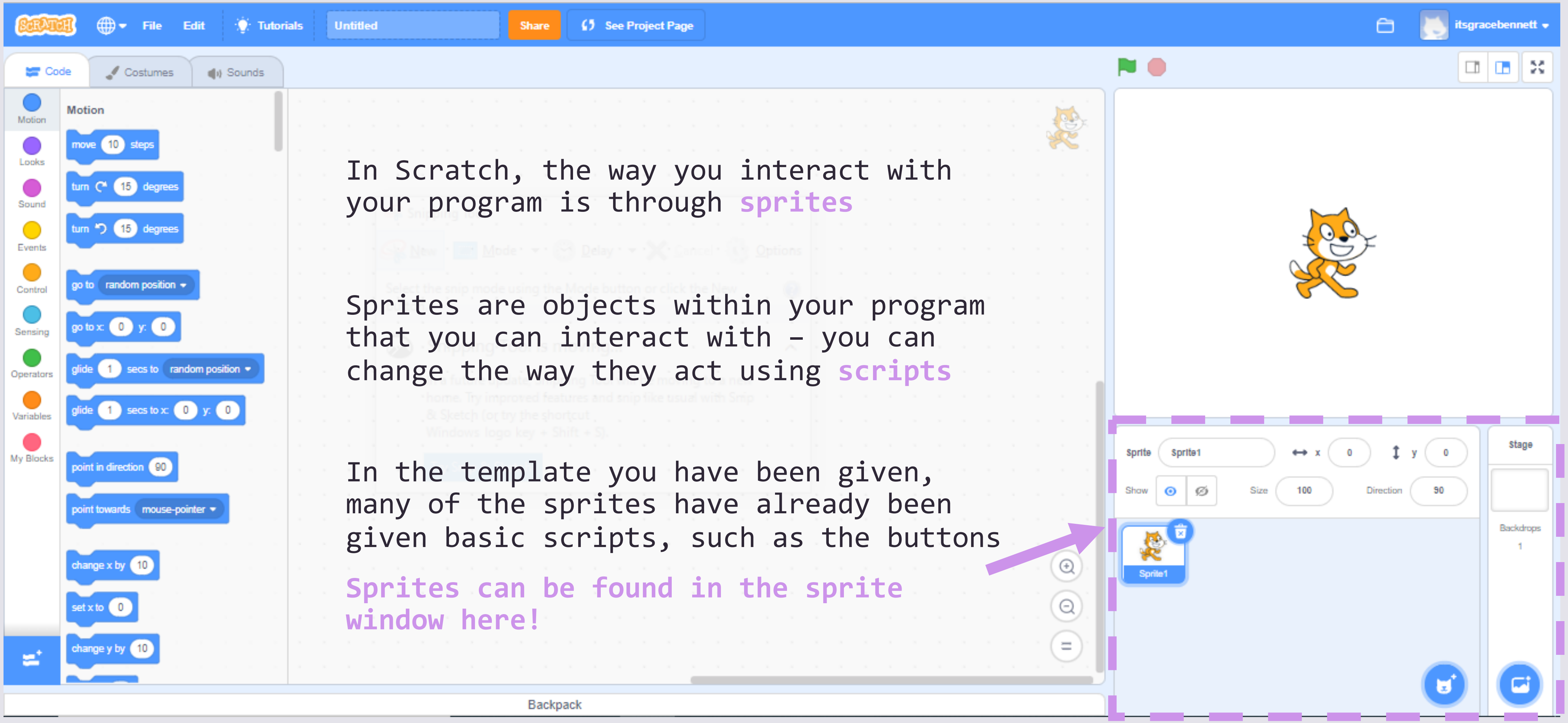
Process

Your code should

- Create 2 players – one controlled by W and S, the other controlled by the Up and Down arrow keys.
- Code the ball to bounce around the screen, bounce and interact with players
- Allow the users to score goals and earn points

How does SCRATCH work?



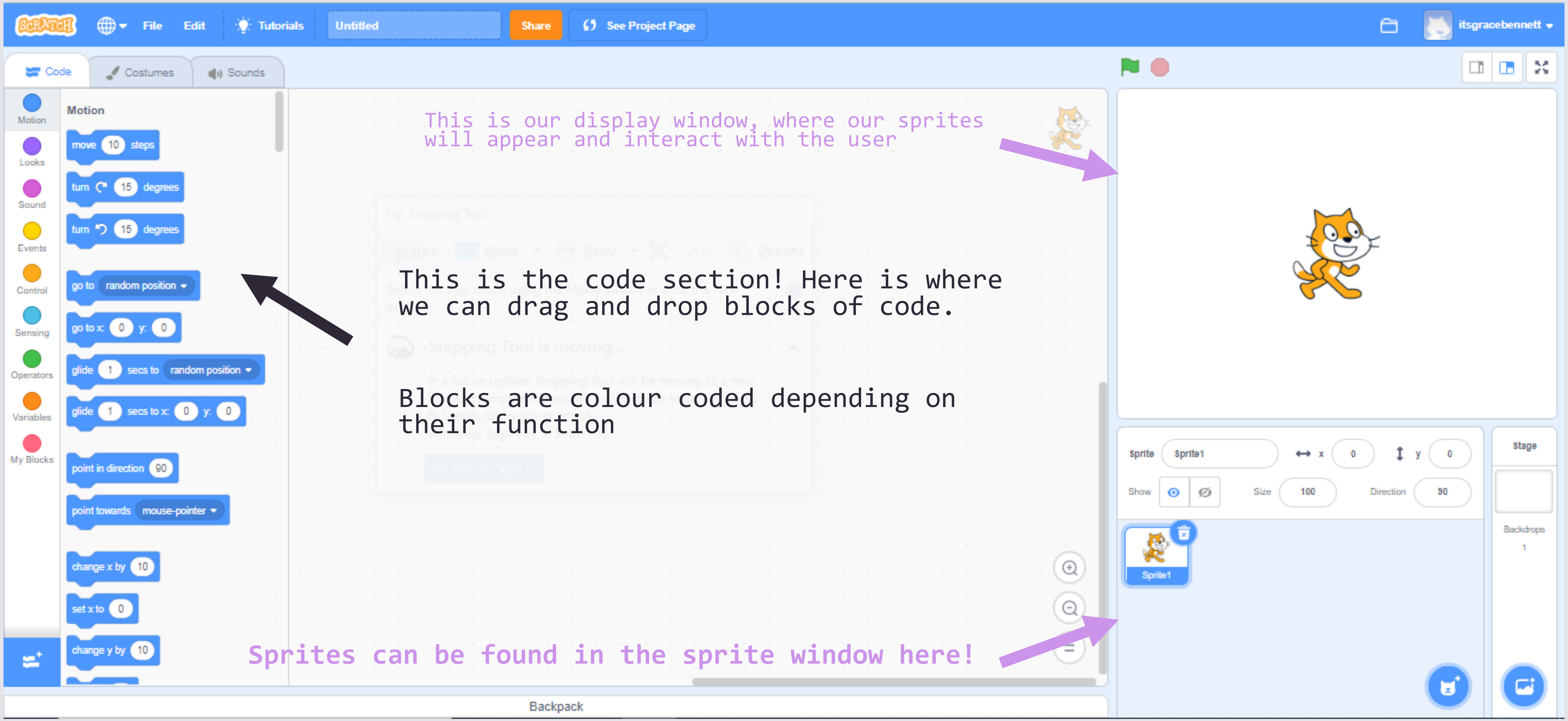
In Scratch, the way you interact with your program is through sprites

Sprites are objects within your program that you can interact with – you can change the way they act using scripts

In the template you have been given, many of the sprites have already been given basic scripts, such as the buttons

Sprites can be found in the sprite window here!

How does SCRATCH work?



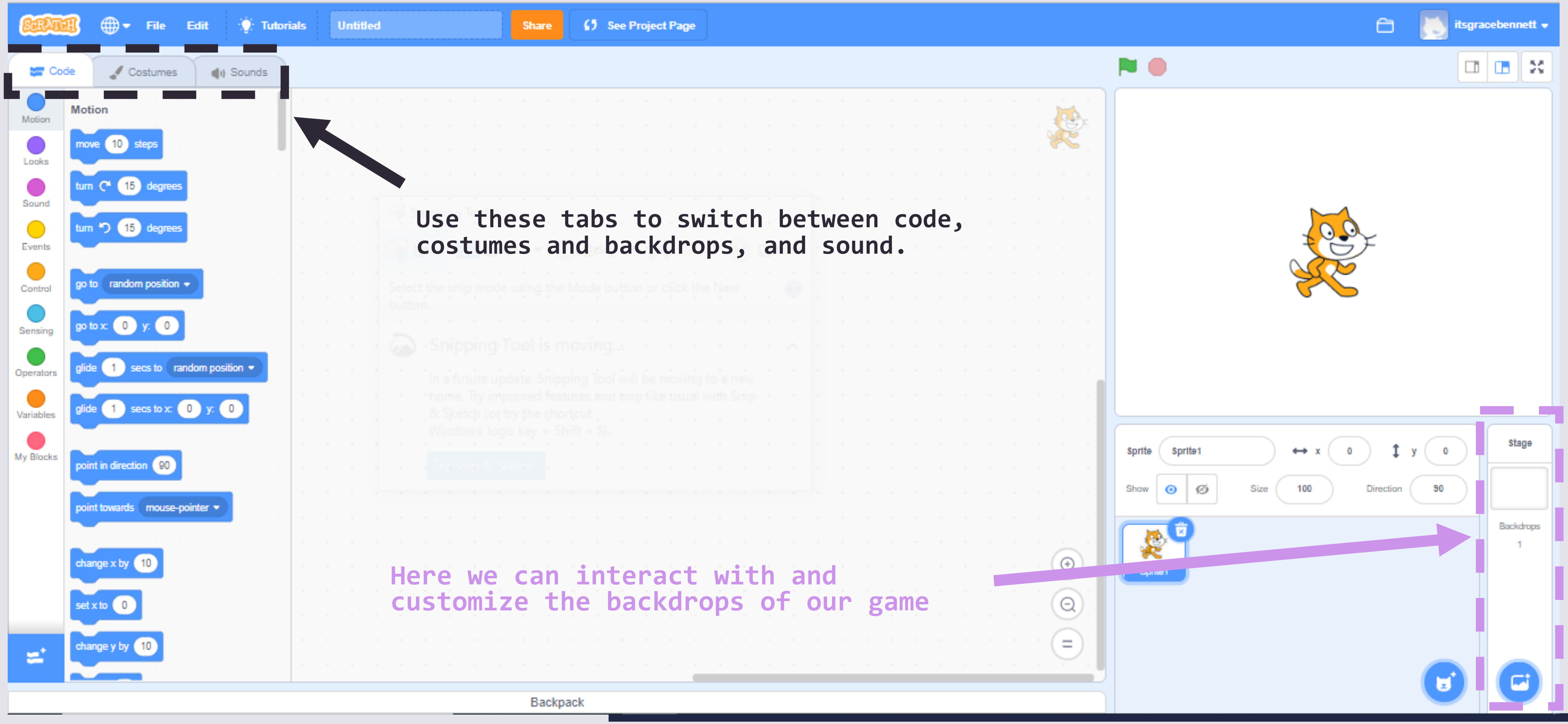
This is our display window, where our sprites will appear and interact with the user

This is the code section! Here is where we can drag and drop blocks of code.

Blocks are colour coded depending on their function

Sprites can be found in the sprite window here!

How does SCRATCH work?



```
Motion
move 10 steps
turn ↻ 15 degrees
turn ↺ 15 degrees
go to random position
go to x: 0 y: 0
glide 1 secs to random position
glide 1 secs to x: 0 y: 0
point in direction 90
point towards mouse-pointer
change x by 10
set x to 0
change y by 10
```

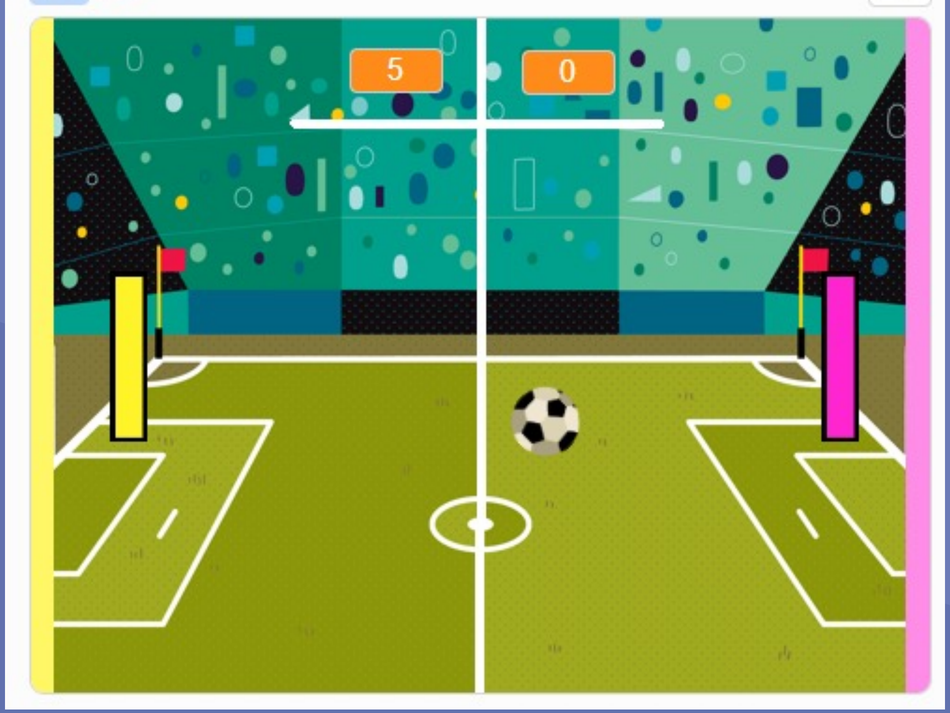
Sprite Sprite1 ↔ x 0 ↕ y 0

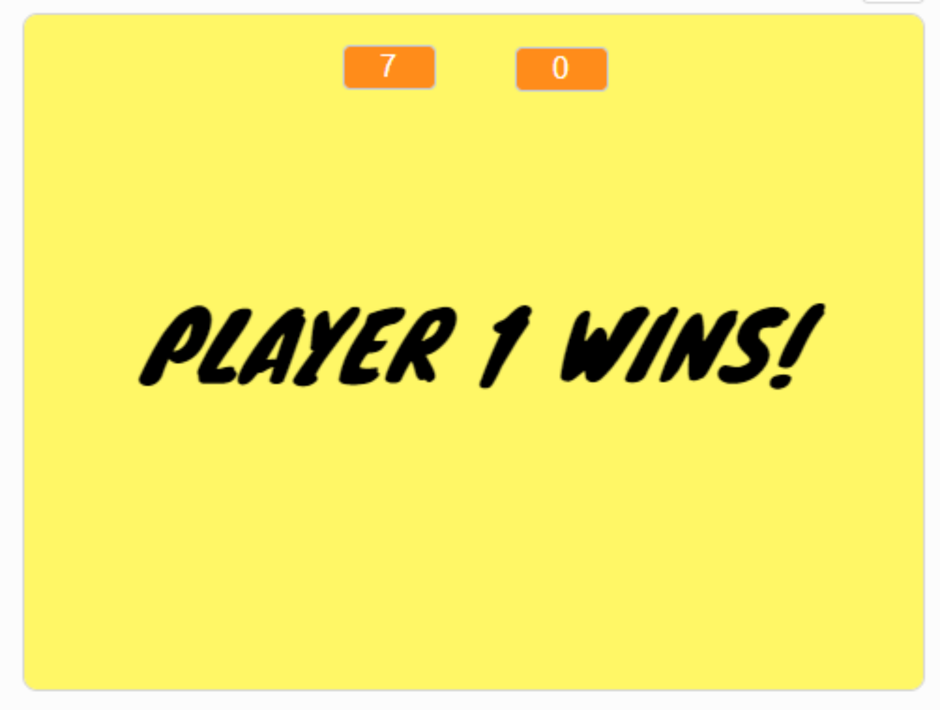
Show Size 100 Direction 90

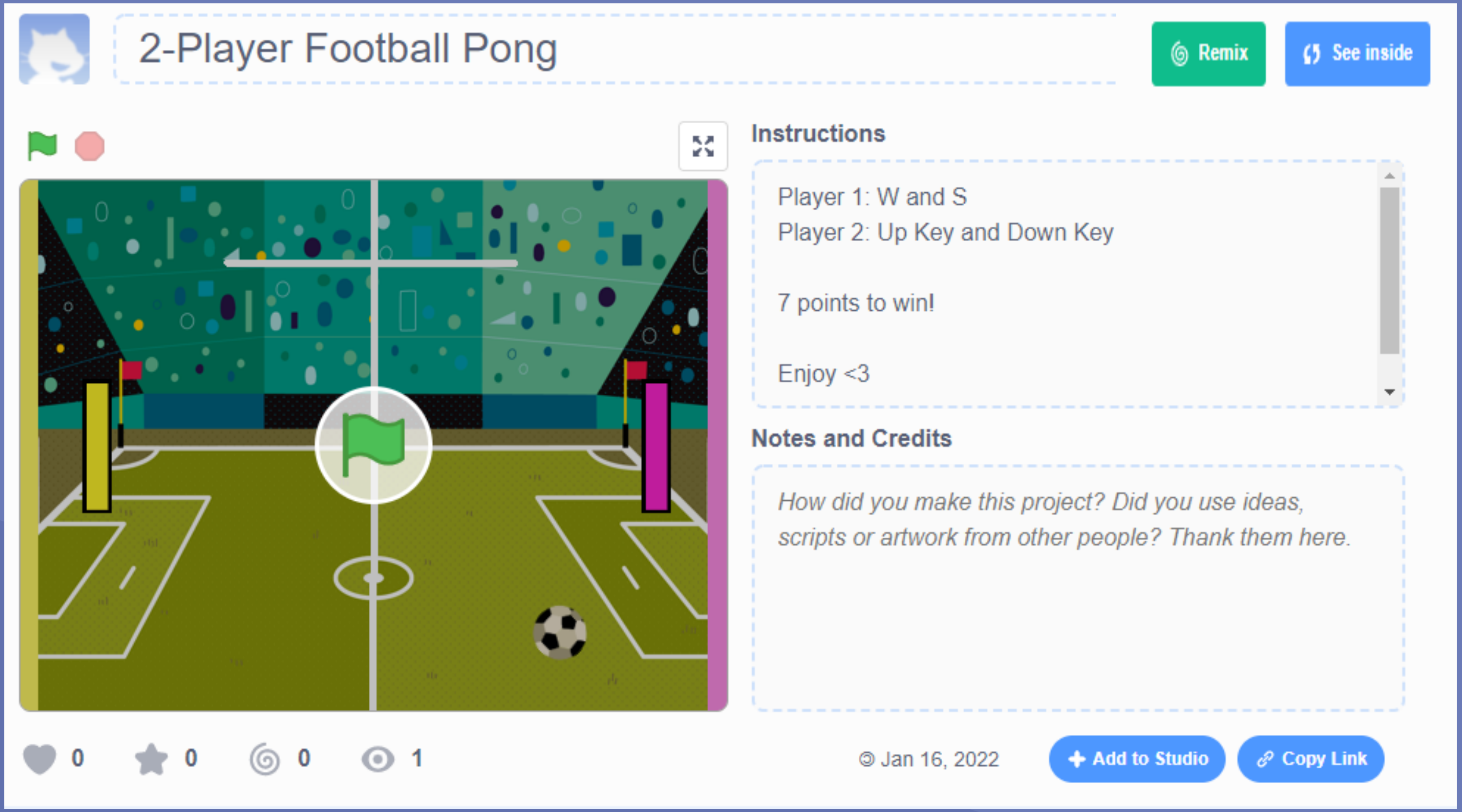
Use these tabs to switch between code, costumes and backdrops, and sound.

Here we can interact with and customize the backdrops of our game

What our game will look like…







2-Player Football Pong

Instructions

Player 1: W and S
Player 2: Up Key and Down Key

7 points to win!

Enjoy <3

Notes and Credits

How did you make this project? Did you use ideas, scripts or artwork from other people? Thank them here.

© Jan 16, 2022

Once you have logged into Scratch…

Click here to access the template to our project!

*Click **Remix** to get started with your project*

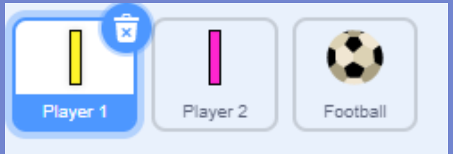
By the end of this resource, your project should look like this! (Use this if you get stuck)

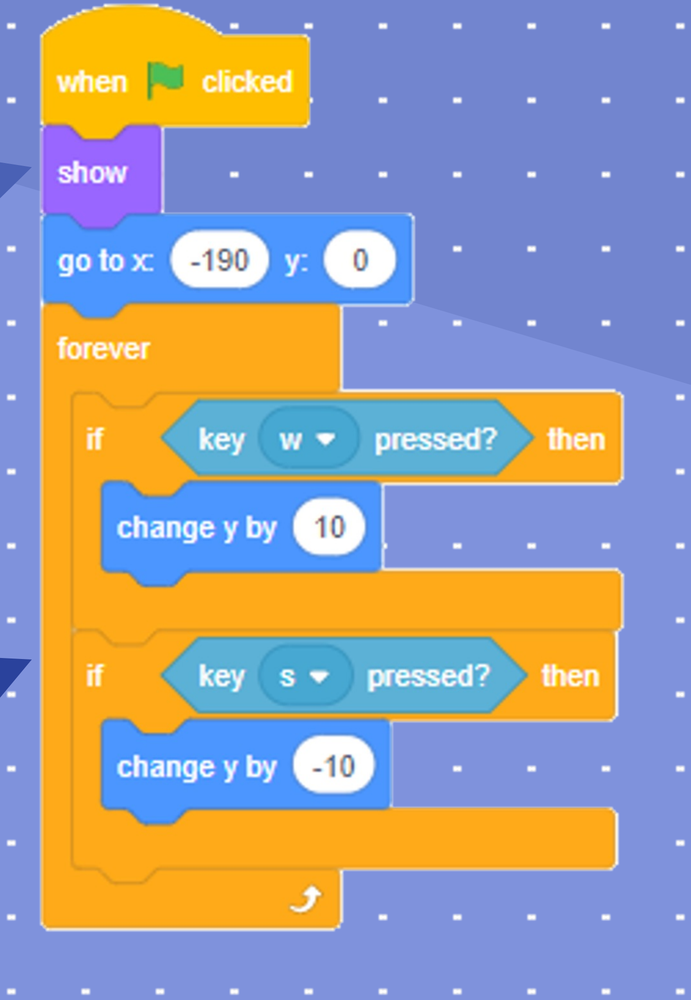
Step 1

Coding player movement…

Inside of the Player 1 sprite, we want to set the initial position of our player and show the player’s sprite when the green flag is clicked.

Then, using a forever block, we want to constantly check is the ‘W’ and ‘S’ keys are being pressed, and change the player’s position accordingly.

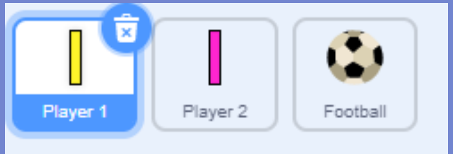




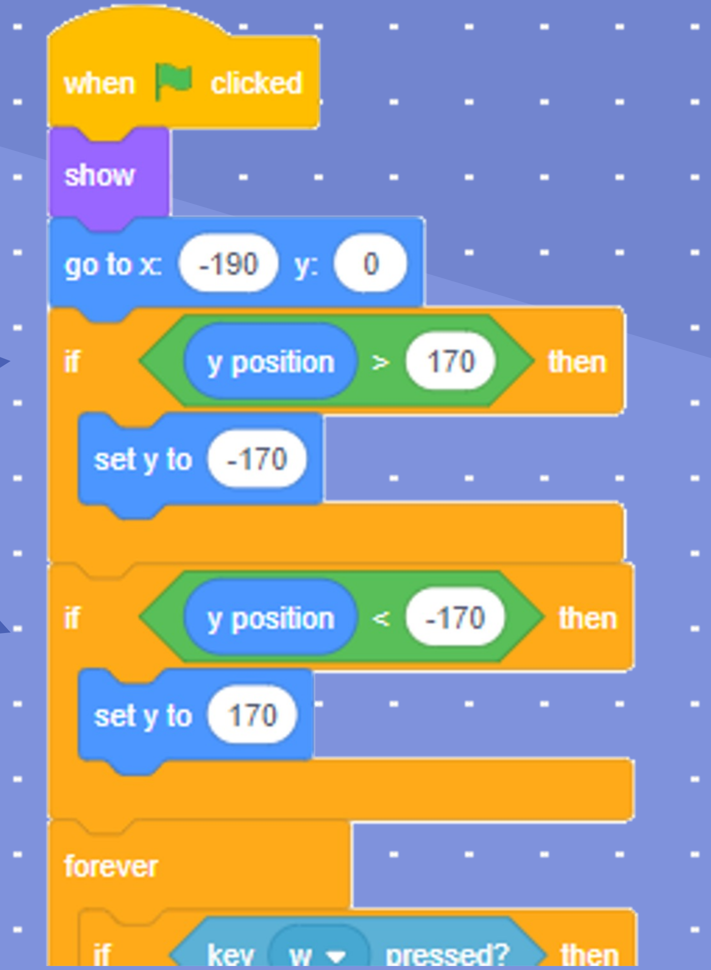
```
when 🏁 clicked
show
go to x: -190 y: 0
forever
    if key w ▾ pressed? then
        change y by 10
    if key s ▾ pressed? then
        change y by -10
```

Step 2

Coding player movement...



Inside of the Player 1 sprite, we want to set the initial position of our player and show the player’s sprite when the green flag is clicked.

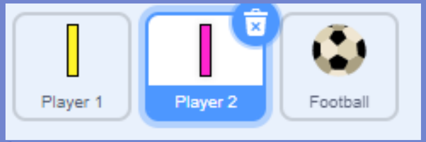


```
when ⚑ clicked
show
go to x: -190 y: 0
if y position > 170 then
    set y to -170
if y position < -170 then
    set y to 170
forever
    if key w ▾ pressed? then
```

Step 3

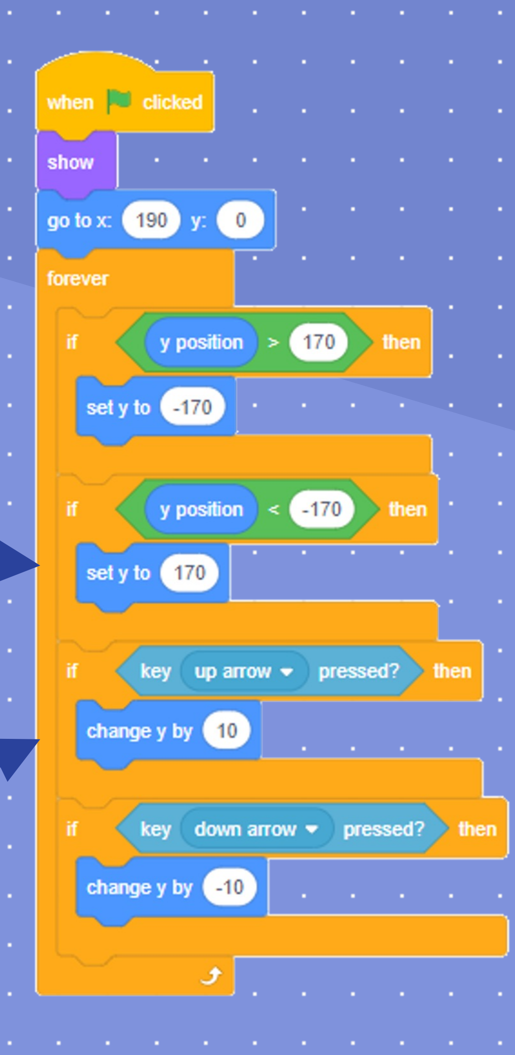
Coding player movement for player 2…

We want to repeat this process for our Player 2 sprite, but we need to change the IF blocks slightly.



We need to change our co-ordinate values

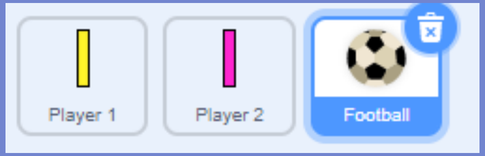
We now need to check IF the ‘up arrow’ and ‘down arrows’ are pressed



```
when 🏁 clicked
show
go to x: 190 y: 0
forever
    if y position > 170 then
        set y to -170
    if y position < -170 then
        set y to 170
    if key up arrow ▾ pressed? then
        change y by 10
    if key down arrow ▾ pressed? then
        change y by -10
```

Step 4

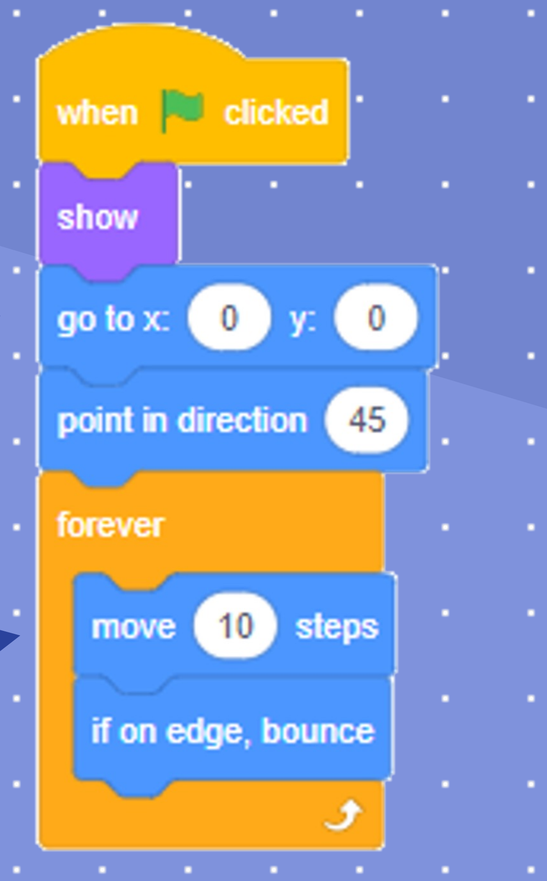
Coding movement of the ball…



cair 4 YOUTH

Inside of the football sprite, we need to set the ball’s starting position and direction

Then, using a forever block, constantly move the ball 10 steps and make it bounce when it hits an edge



```
when 🏁 clicked
show
go to x: 0 y: 0
point in direction 45
forever
    move 10 steps
    if on edge, bounce
```

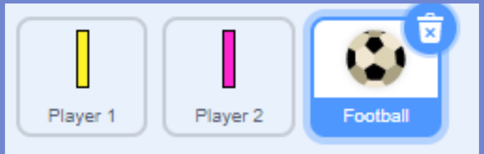
cair 4 YOUTH

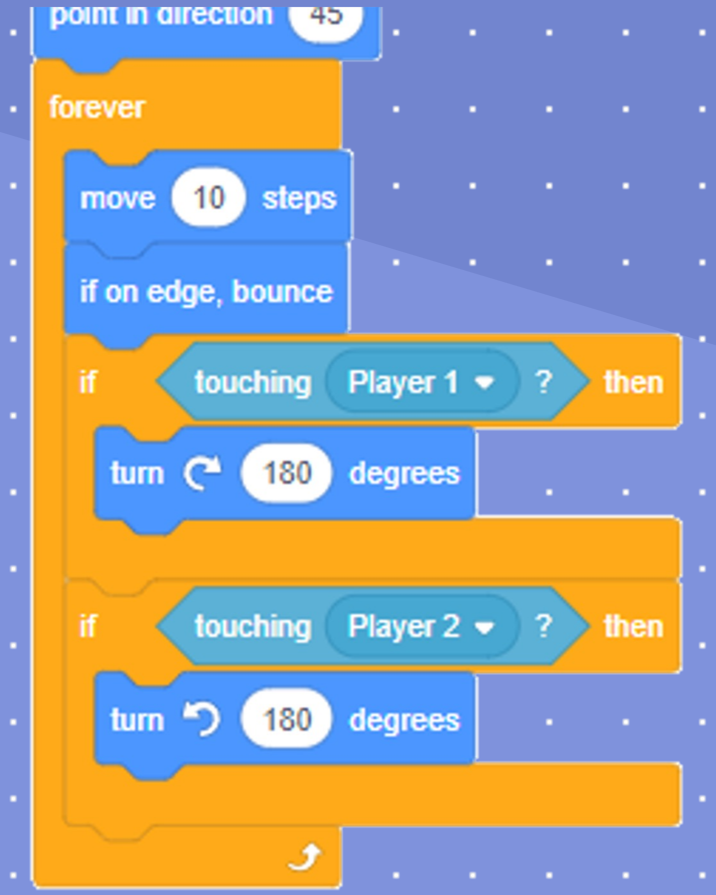
Step 5

Coding movement of the ball…

Then we add two IF blocks that check, IF the ball touches the Player, it should turn 180 degrees.

At this point, the ball should bounce around the screen!





```
point in direction 45
forever
    move 10 steps
    if on edge, bounce
    if touching Player 1 ? then
        turn ↻ 180 degrees
    if touching Player 2 ? then
        turn ↺ 180 degrees
```

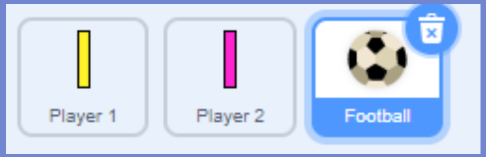
Step 6

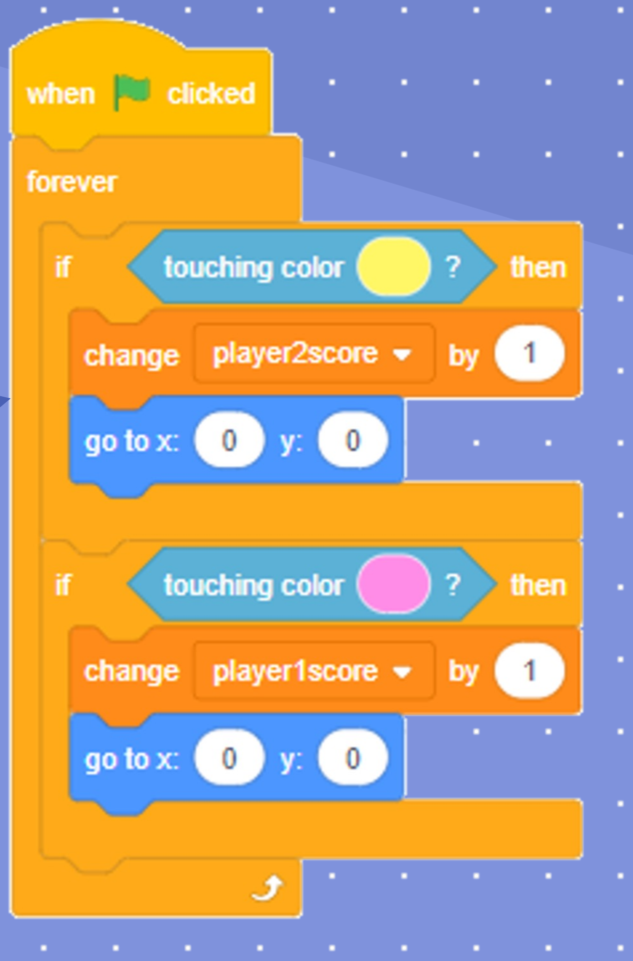
Adding to the player’s score…

In the Football sprite, we want to add some code that will check when the ball hits either goal.

If the ball hits Player 1’s side, Player 2’s score goes up by 1 – and vice versa.

At this point, the scory system wont reset itself. This is what we’ll fix next!





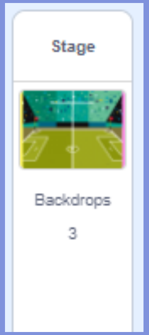
```
when ⚑ clicked
forever
    if touching color ● ? then
        change player2score ▾ by 1
        go to x: 0 y: 0
    if touching color ● ? then
        change player1score ▾ by 1
        go to x: 0 y: 0
```

Step 7

Deciding a winner…

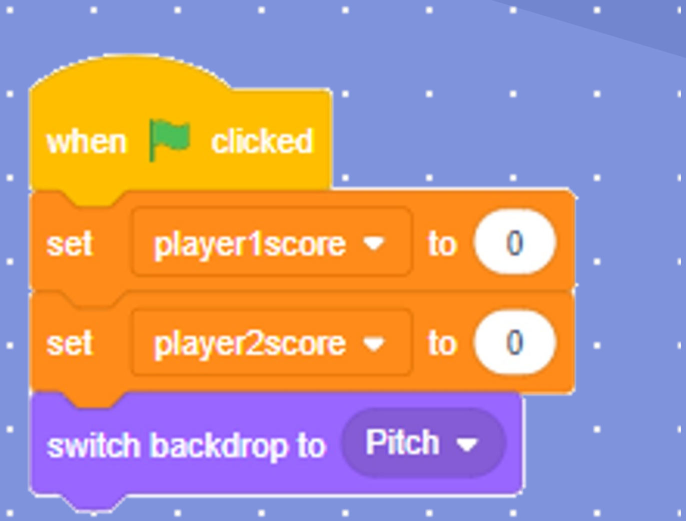
In order to decide a winner, we need to add some code to the backdrop section of our game.

To do this, select the Backdrop icon on the right hand side of the screen.



Add some code that will reset the screen when the green flag is clicked.

It will set the scores back to zero and make sure the correct backdrop is showing!



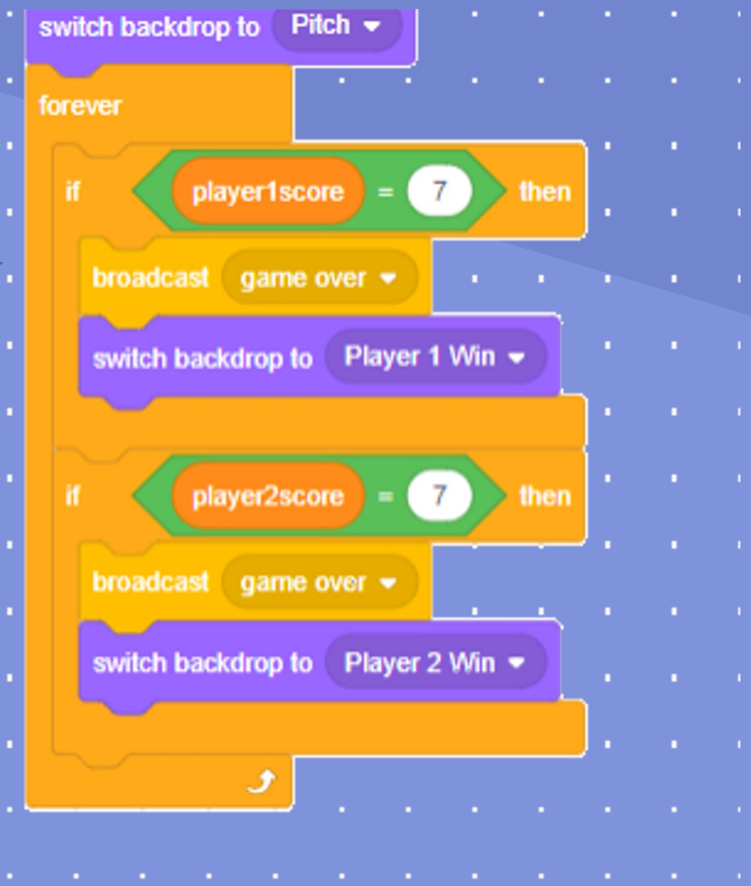
```
when 🏁 clicked
set player1score ▾ to 0
set player2score ▾ to 0
switch backdrop to Pitch ▾
```

Step 7

Deciding a winner…

Then, using a forever block, we check to see if either player has a score of 7.

If they do, broadcast a 'game over' signal and set the backdrop to a celebration message!



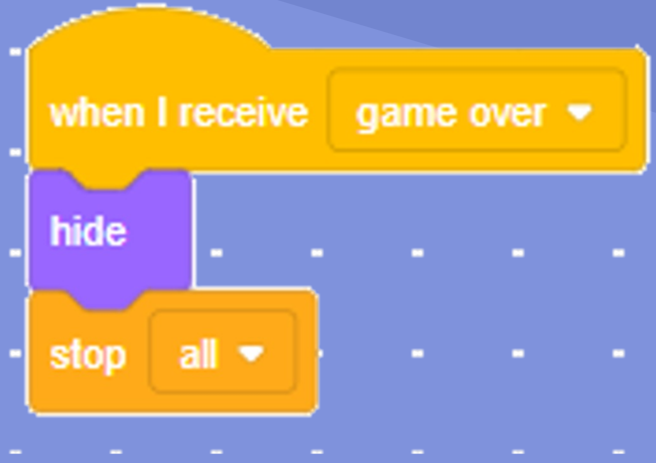
```
switch backdrop to Pitch ▾
forever
    if <(player1score) = 7> then
        broadcast game over ▾
        switch backdrop to Player 1 Win ▾
    if <(player2score) = 7> then
        broadcast game over ▾
        switch backdrop to Player 2 Win ▾
```

Step 8

Clearing the screen…

When the player wins, we need to clear each sprite off of the screen. To do this, add this code into:

- The player 1 sprite
- The player 2 sprite
- The football sprite



```
when I receive [game over ▾]
hide
stop [all ▾]
```

Extension

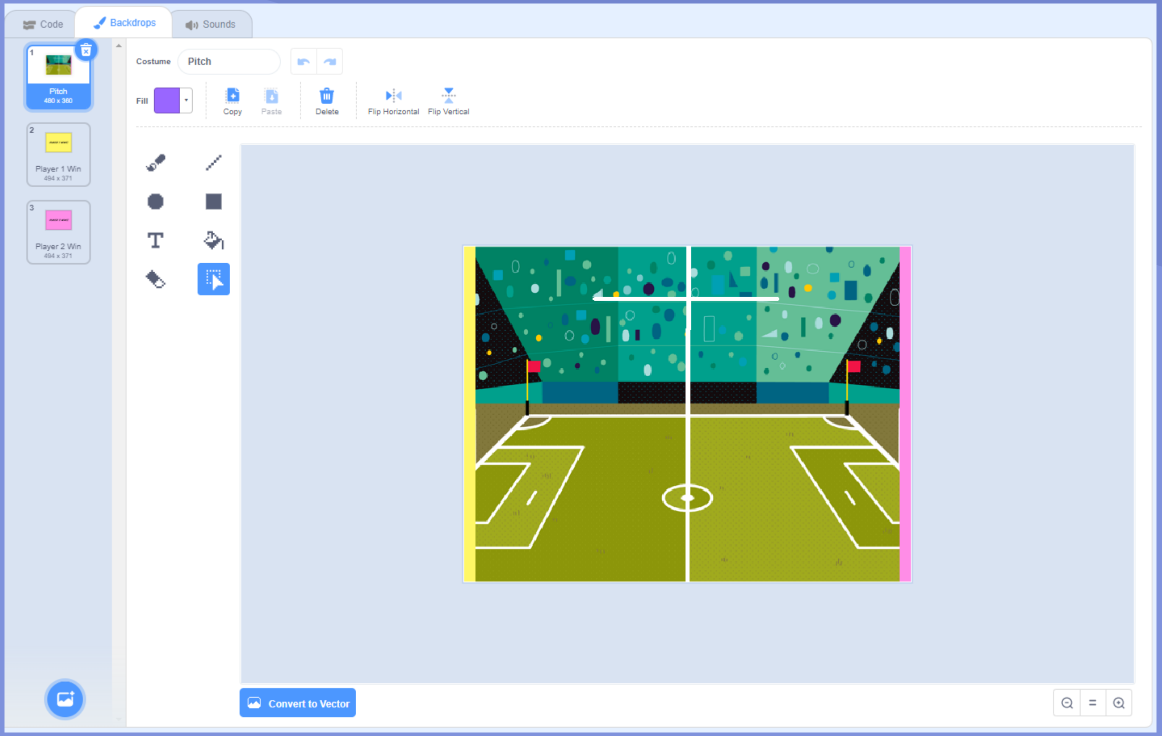
Making the game your own...

In the backdrops and sprite editors, have a go at experimenting with different backgrounds and images!

Could you make a space or battleship themed pong game?

Get creative!

To take it even further, could you find a way of adding sound affects?


Code
Backdrops
Sounds
1
Pitch
480 x 360
2
Player 1 Win
494 x 371
3
Player 2 Win
494 x 371
Costume
Pitch
Fill
Copy
Paste
Delete
Flip Horizontal
Flip Vertical
Convert to Vector
=