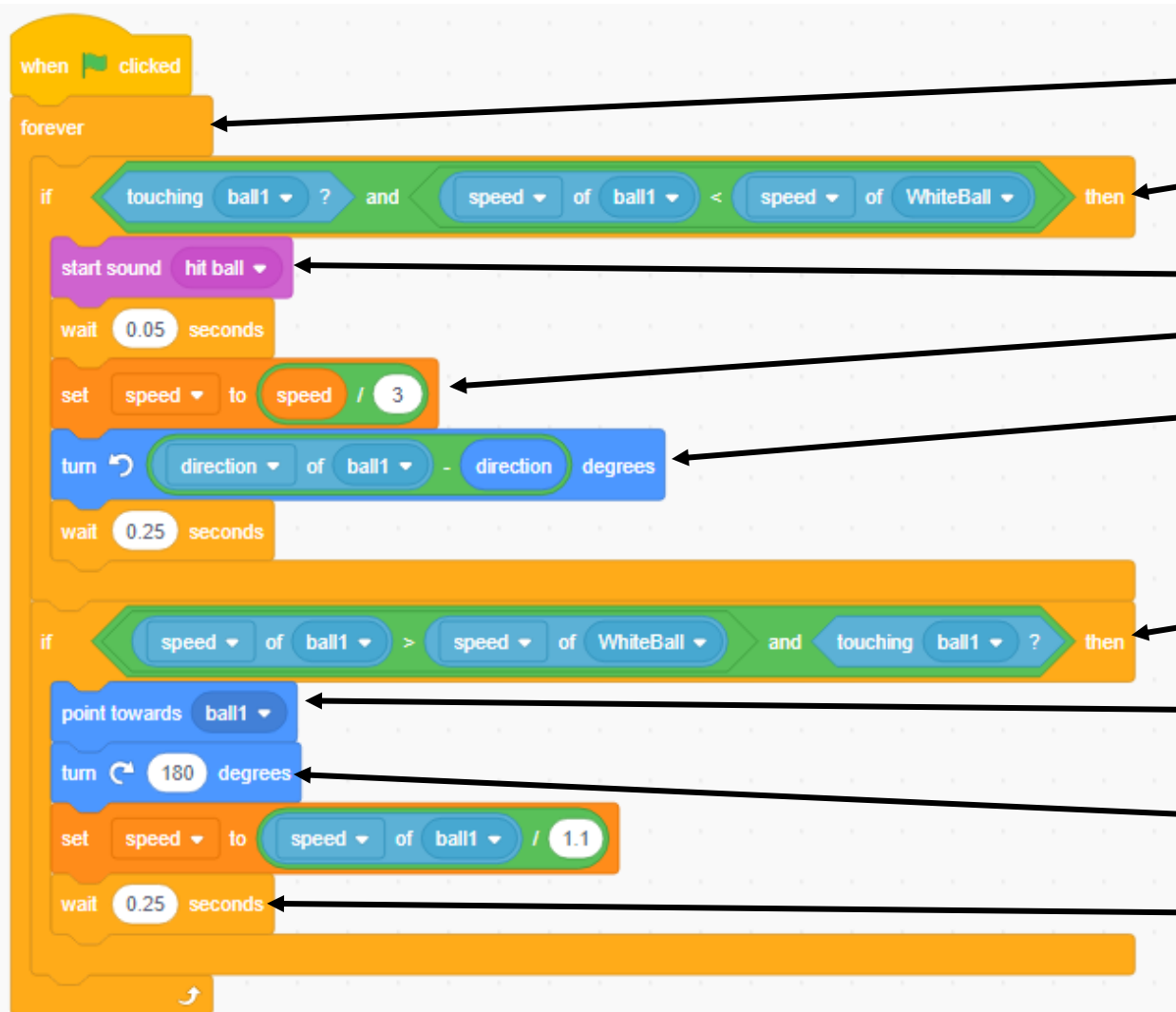


# **Using Scratch to Teach Event-Driven Coding Skills**

## **Commented Code**

<https://tapggc.org/>

This portion of the code effects how the white ball interacts with the other billiard ball



The code is a Scratch script starting with a 'when clicked' event block, followed by a 'forever' loop. Inside the loop, there are two 'if' conditional blocks. The first 'if' block checks if the white ball is touching 'ball1' and if the speed of 'ball1' is less than the speed of 'WhiteBall'. If true, it starts a 'hit ball' sound, waits 0.05 seconds, sets the speed of 'WhiteBall' to its current speed divided by 3, turns 'WhiteBall' to the opposite direction of 'ball1', and waits 0.25 seconds. The second 'if' block checks if the speed of 'ball1' is greater than the speed of 'WhiteBall' and if 'WhiteBall' is touching 'ball1'. If true, it points 'WhiteBall' towards 'ball1', turns it 180 degrees, sets its speed to its current speed divided by 1.1, and waits 0.25 seconds.

when clicked

forever

if touching ball1 ? and speed of ball1 < speed of WhiteBall then

start sound hit ball

wait 0.05 seconds

set speed to speed / 3

turn direction of ball1 - direction degrees

wait 0.25 seconds

if speed of ball1 > speed of WhiteBall and touching ball1 ? then

point towards ball1

turn 180 degrees

set speed to speed of ball1 / 1.1

wait 0.25 seconds

While the game is running this code block will continue loop

This checks if the white ball is hitting the other pool ball

This will play a sound of two pool balls hitting

This will divide the speed of the white ball by 3

This will set the angle that the white ball will bounce off of the other pool ball

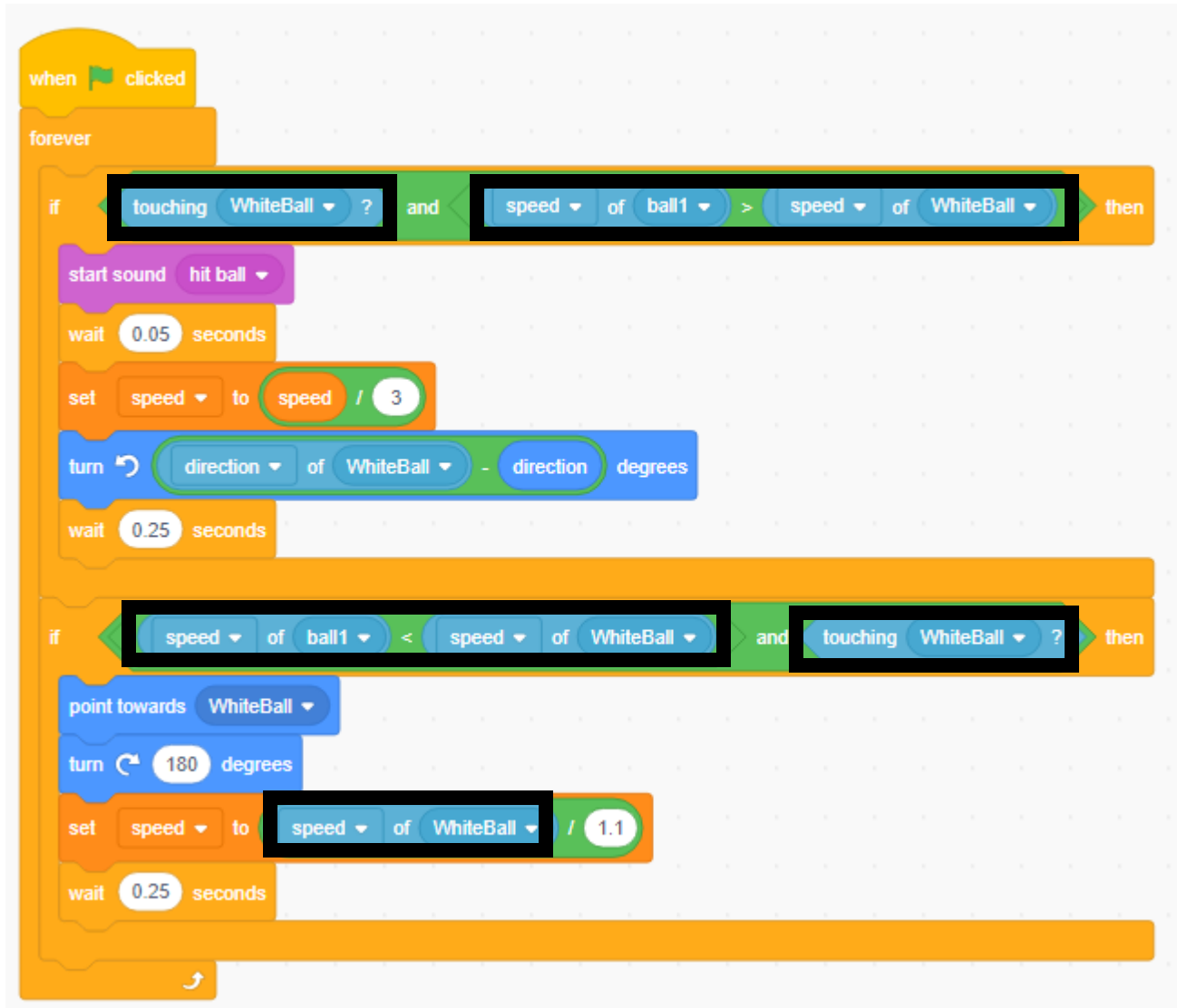
This checks if the white ball is colliding with the other ball again while it's moving around the table

This sets the directional vector of the white ball towards the other pool ball

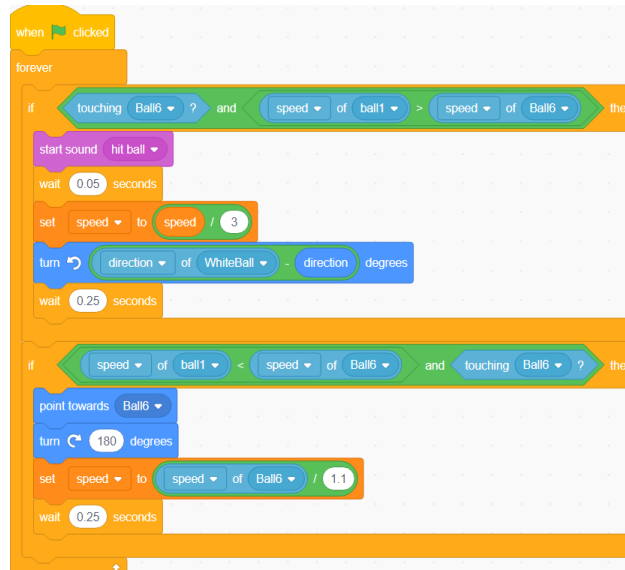
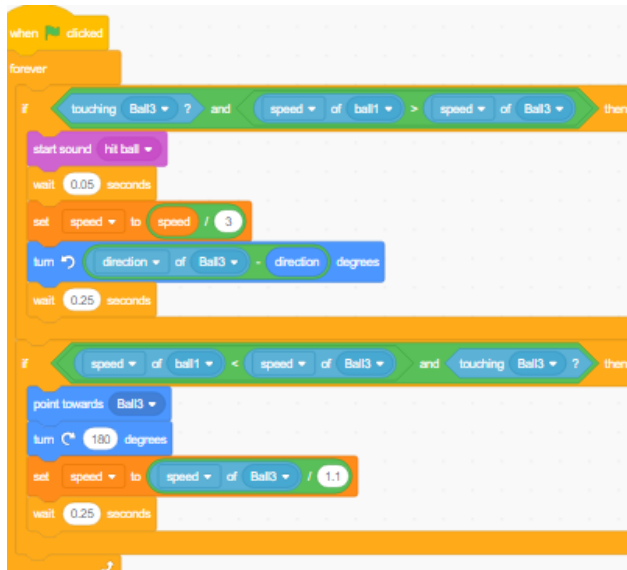
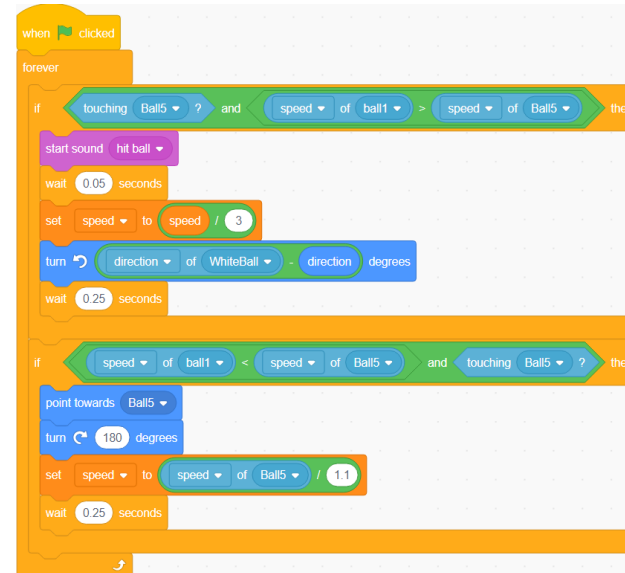
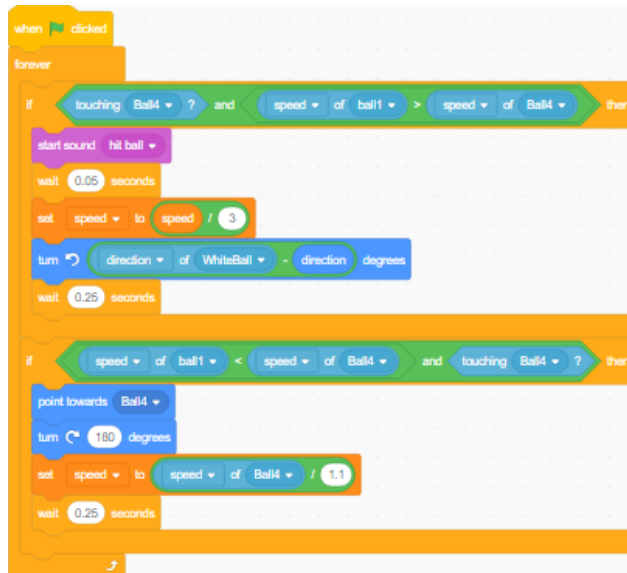
This causes the white ball to bounce off the other ball in the opposite direction

This will divide the speed of the white ball by 1.1

This portion of the code effects how one of the other pool balls will interact with the white ball. The code is generally the same. Only variables and operators are changed. Use the previous page to help with the small changes.

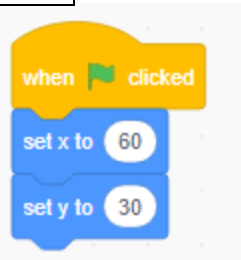


The code below shows interactions between four different pool balls. Notice that the values are the same, but the variables are different.



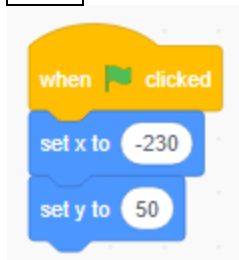
The following code blocks set the locations of the barriers for the level 3 code. Each code sets them at a specific x and y-values

1



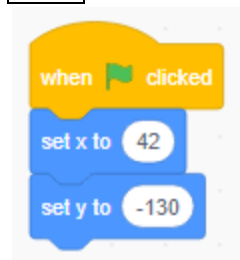
This puts the barrier in the top right corner

2



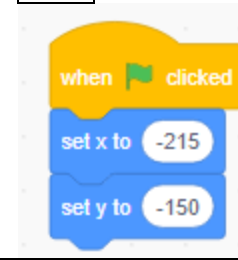
This puts the barrier in the top left corner

3



This puts the barrier in the bottom right corner

4



This puts the barrier in the bottom left corner

