

The Tank Game

We begin this game by importing the backgrounds we will be using.

To do this we use the import button, select computer from the menu that pops up, select jdrive, select Coderdojo, select scratch and finally select the Tank Game folder.

Next up we need to make 7 Variables for this game.

Boss direction: Controls which way the boss will shoot.

Enemy Bullet: Lets the enemy bullet know when its tower has been destroyed.

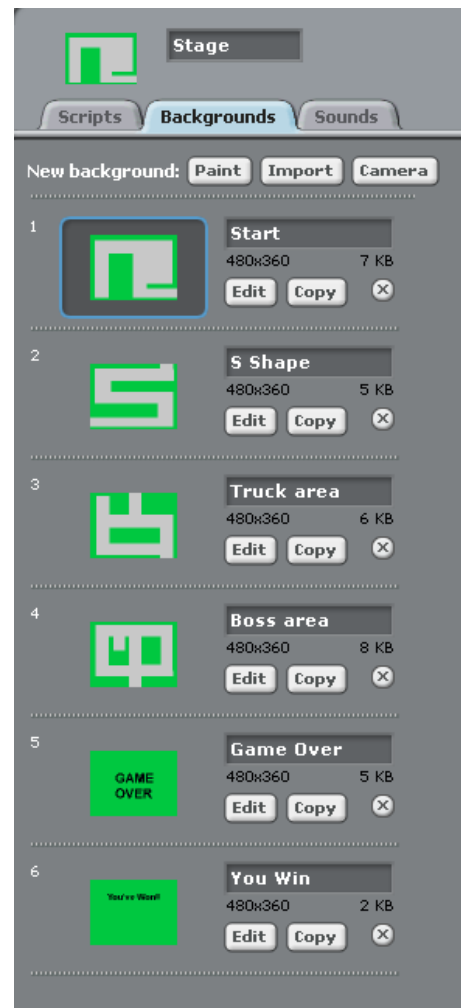
Health: The number of times our tank can get hit.

I Hit Them: Lets our bullet know when its hit something.

They Hit Me: Lets our tank know when it gets hit.

Left/Right: Used for moving onto a new background when we reach the side of a map

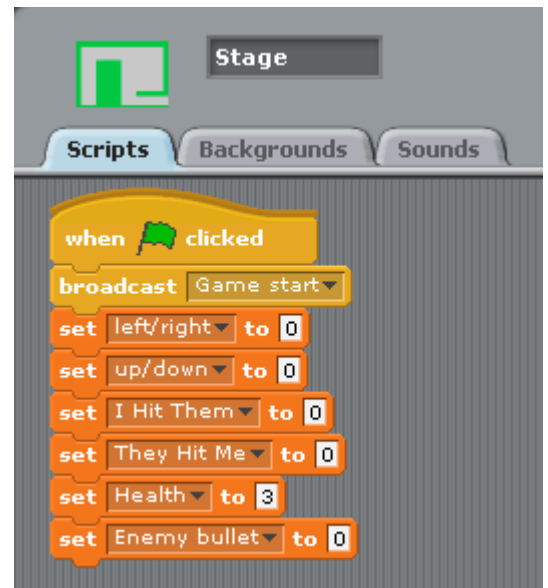
Up/down: Same as Left/Right But for the vertical directions



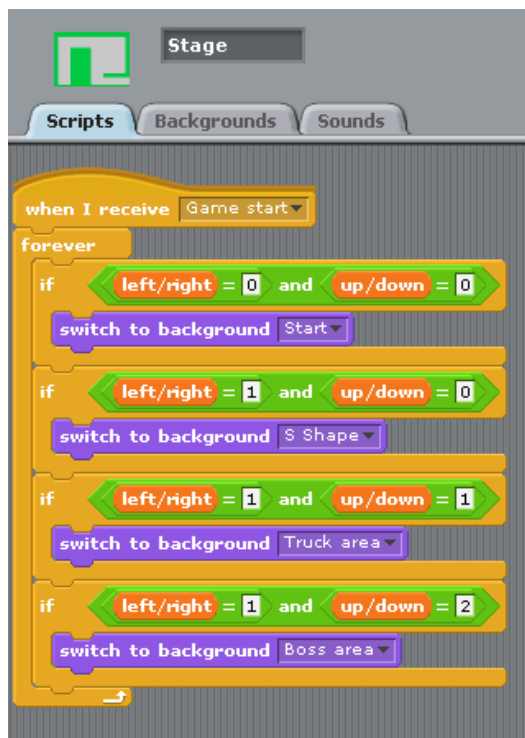
Next up we set all of our variables except boss direction.

Health is the only one not set to 0.

We also create a broadcast for the game to start.



Next we make the backgrounds swap depending on what left and right are.

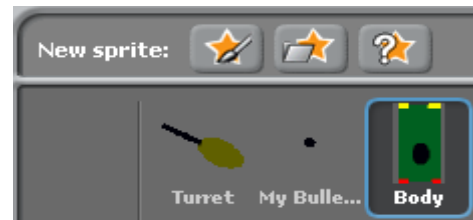


And finally we set our stage to swap if we win or lose by creating the appropriate broadcasts.



The Left/Right Up/Down system will control where our enemies will spawn. Its very important to understand how it works.

Now we can set up the sprites we will be using in the game. To start with we will only be setting up 3 sprites at the beginning. This allows us to set the sprites up properly and by using duplication we can save ourselves a lot of time.



The Turret, Bullet and Body are the only 3 sprites we need right now. We import them the same way we import the backgrounds.

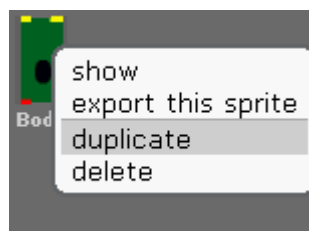
Next up on the sprite labelled body we are going to import extra costumes.

By using import we can add more costumes for our body. In this case we will be adding explosions 2_1 to 2_8 in order as shown here.

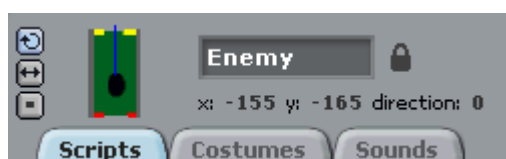
You can click and drag these into order as well if you made a mistake importing.



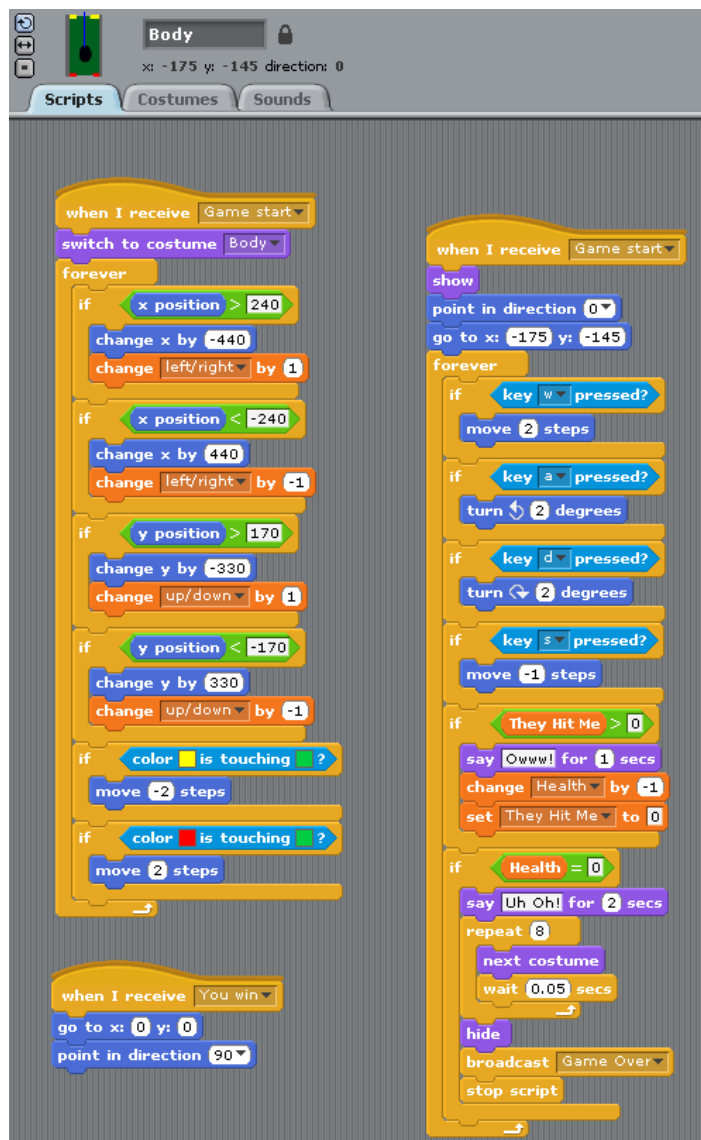
Now with our body set up we are going to duplicate it once.



We are going to rename our copy "Enemy"



The script for our body is going to look like this



It's split into 2 parts to make it easier to read.

The left Column tells our Tank body how to interact with the map. What happens if he gets close o an edge or goes off the grey road.

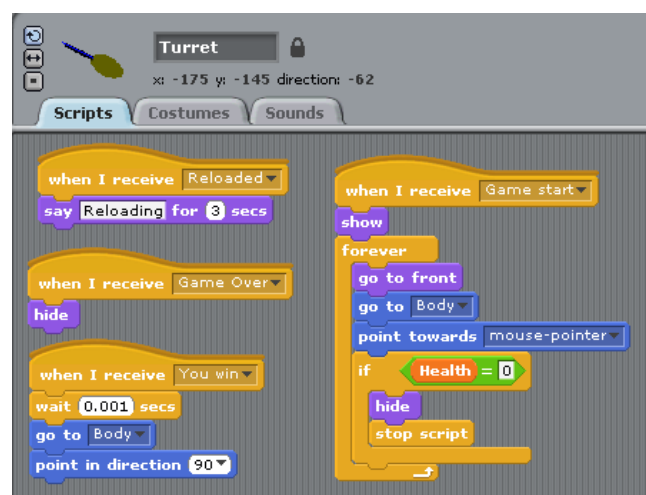
The right column controls the tank body we can move forward, backward and turn left or right.

We have hit detection for when an enemy hits us and a script for what happens if our health goes to 0.

Finally we have a script for what happens if we win.

Next we set up our turret. We create a broadcast called reloaded which will be used in the bullet.

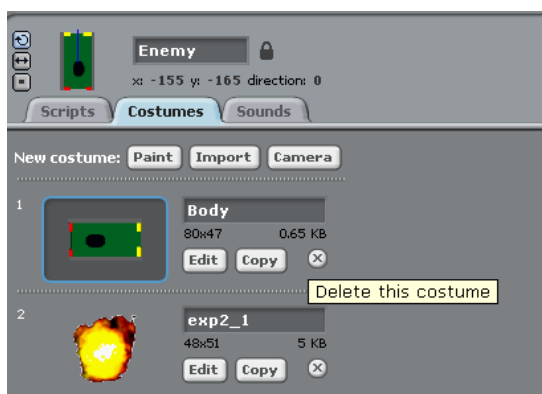
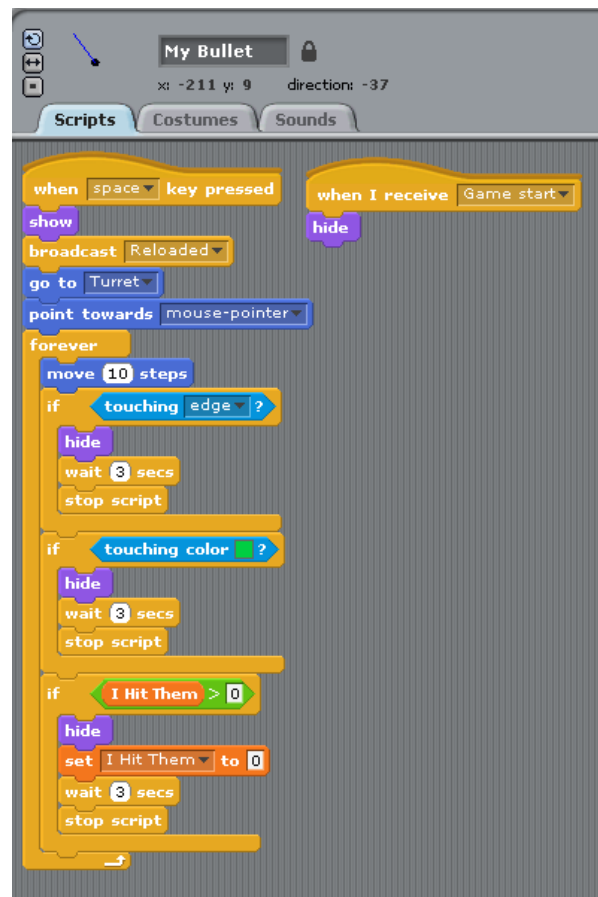
The right hand script is our main scrip it tells the turret to go to the tank body and point towards our mouse.



The bullet's script looks like this

I renamed it to my bullet and set it up to hide at the game start.

When space is pressed the bullet heads to the turret, Points at the mouse pointer and then forever moves until it hits an edge, the colour green, or it detects it has hit and enemy. It then hides and waits 3 seconds giving you a 3 second reload.



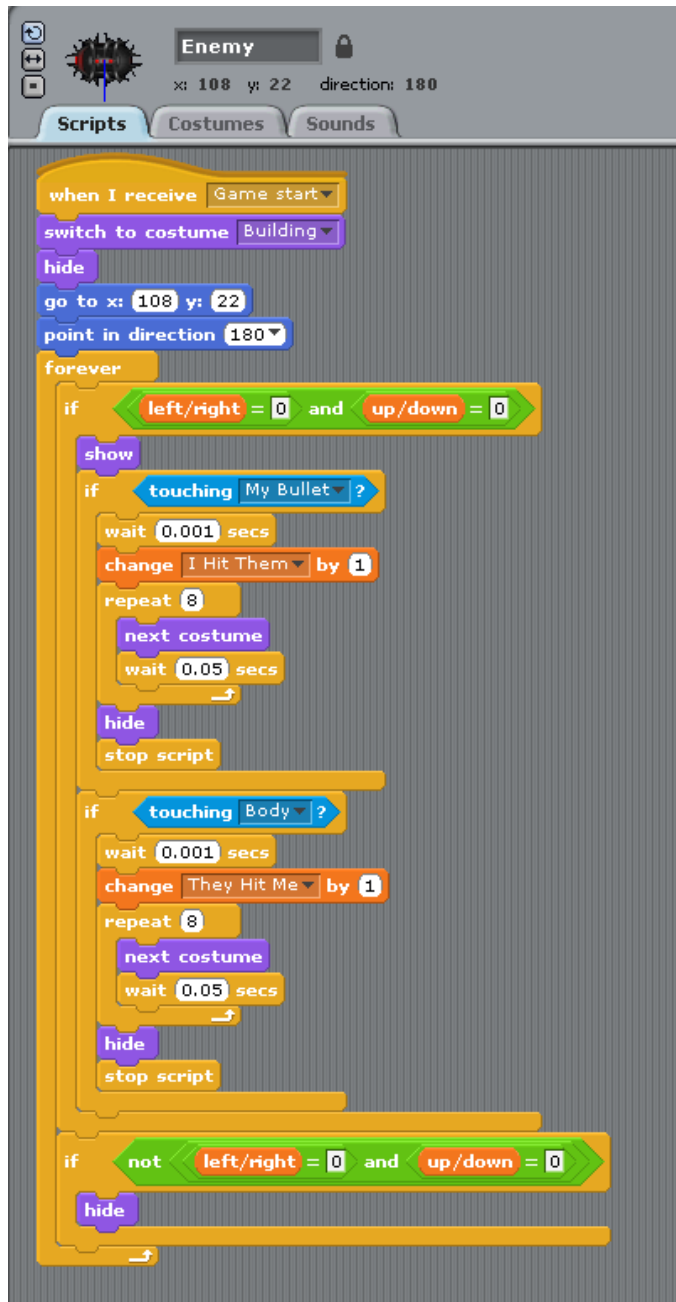
Now finally we have one sprite left the duplicated body that we renamed to enemy.

We delete the tank body from our enemy sprite and we replace it with one of the enemies in the tank game folder, in this case Building.

We now should have something that looks like this. We can now start adding scripts to this sprite and use it as our base enemy which we can duplicate.



Almost all enemies will have the following script with minor changes. The only major changes are the boss and the truck which both move.



At the top of the script we set the buildings costume.

We set where we want it to appear with go to x: y: (by dragging the sprite around the map with a mouse the go to x: y: updates every time you swap into the motion tab, this makes it easier to set where you want your enemy to appear.)

In this case our first enemy is set up for the start screen.

Our enemy appears if left/right and up/down both equal 0; or in other words when our tank is on the starting map.

Our enemy can be destroyed by either being hit by our bullet or being hit by our tank.

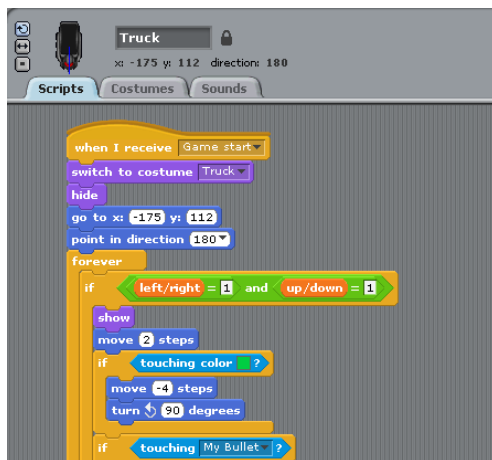
And finally the last if at the bottom of the script is to make sure if he survives that he hides when we move onto a new map.

We can now duplicate our enemy multiple times and changes only small bits of its script. **The most important things to change for all enemies is their if left/right = and up/down=** this is the part of the script that tells the enemies on which background they should appear.

Since we now have a basic enemy we can now duplicate it and add extra enemies.

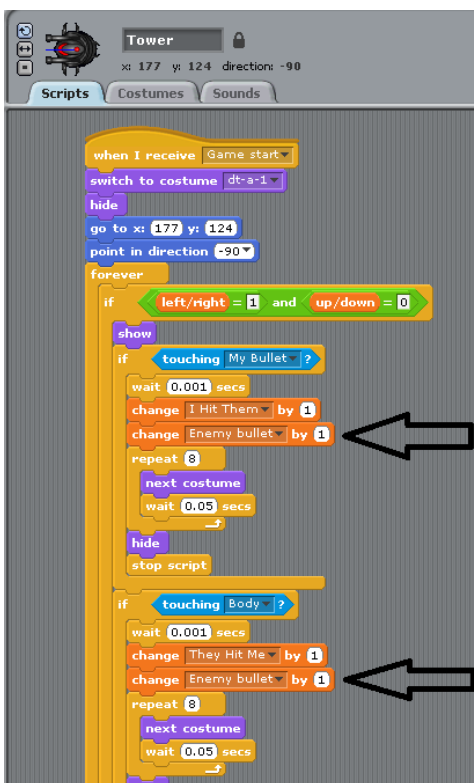
Truck:

The truck has 4 extra lines of script over a standard building. It is set up to turn right or left if touching colour green.



Tower:

The tower has 2 extra lines of code. Change enemy bullet by 1 to let the enemy bullet know when to stop shooting.



Tower Bullet:



This has some significant differences to a regular enemy however the base code is still the same.

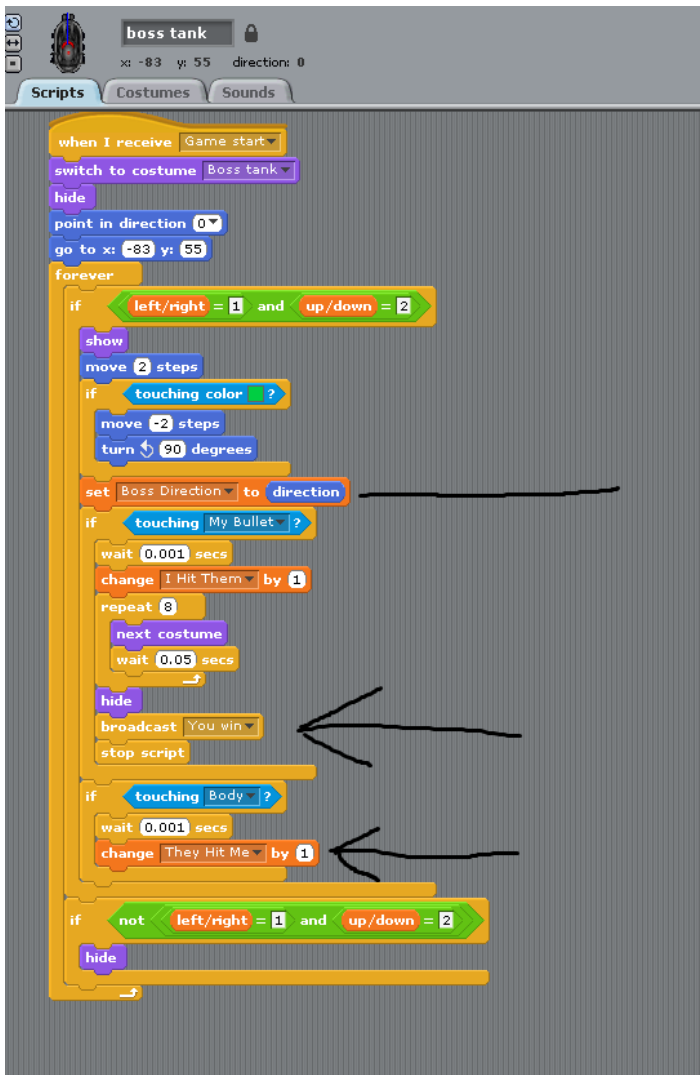
The changes have been highlighted.

We start off with going to the tower. In his case the tower is pointing only one direction and does not turn so we can point our bullet the same direction.

The bullet moves 9 steps and if it hits either the tank body or green it stops and hides for 3 seconds before firing again.

If the tower dies then the bullet stops and hides.

Boss tank:



For the boss tank we can copy a truck and modify its code as shown.

Set boss direction to (direction) means that we have a variable that tells us which way the boss is pointing. This allows us to give the boss a bullet to shoot.

The boss broadcast you win if it dies.

The boss does not die if you ram him

For the boss bullet we can duplicate a tower bullet and make the changes shown.

