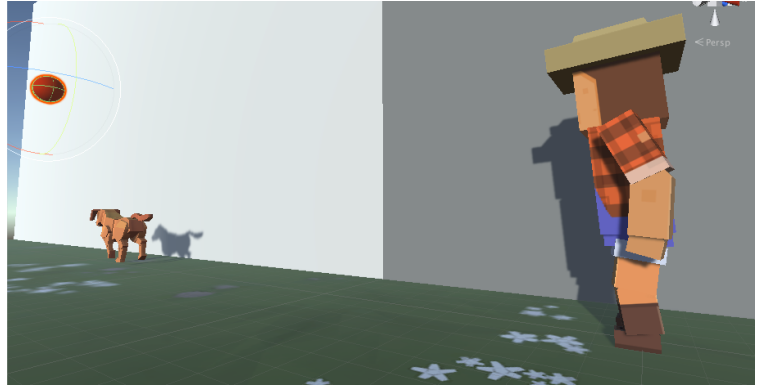# Challenge 2
Play Fetch

Challenge Overview:

Use your array and random number generation skills to program this challenge where balls are randomly falling from the sky and you have to send your dog out to catch them before they hit the ground. To complete this challenge, you will have to make sure your variables are assigned properly, your if-statements are programmed correctly, your collisions are being detected perfectly, and that objects are being generated randomly.

Challenge Outcome:

- A random ball (of 3) is generated at a random x position above the screen
- When the user presses spacebar, a dog is spawned and runs to catch the ball
- If the dog collides with the ball, the ball is destroyed
- If the ball hits the ground, a "Game Over" debug message is displayed
- The dogs and balls are removed from the scene when they leave the screen

Challenge Objectives:

In this challenge, you will reinforce the following skills/concepts:
- Assigning variables and arrays in the inspector
- Editing colliders to the appropriate size
- Testing xyz positions with greater/less than operators in if-else statements
- Randomly generating values and selecting objects from arrays

Challenge Instructions:

- Open your **Prototype 2** project
- **Download** the "Challenge 2 Starter Files" from the Tutorial Materials section, then double-click on it to **Import**
- In the *Project Window > Assets > Challenge 2 > **Instructions*** folder, use the "Challenge 2 - Instructions" and "Outcome" video as a guide to complete the challenge

Challenge		Task	Hint
1	Dogs are spawning at the top of the screen	Make the balls spawn from the top of the screen	Click on the Spawn Manager object and look at the "Ball Prefabs" array
2	The player is spawning green balls instead of dogs	Make the player spawn dogs	Click on the Player object and look at the "Dog Prefab" variable
3	The balls are destroyed if anywhere near the dog	The balls should only be destroyed when coming into direct contact with a dog	Check out the box collider on the dog prefab
4	Nothing is being destroyed off screen	Balls should be destroyed when they leave the bottom of the screen and dogs should be destroyed when they leave the left side of the screen	In the DestroyOutOfBounds script, double-check the lowerLimit and leftLimit variables, the greater than vs less than signs, and which position (x,y,z) is being tested
5	Only one type of ball is being spawned	Ball 1, 2, and 3 should be spawned randomly	In the SpawnRandomBall() method, you should declare a new random *int index* variable, then incorporate that variable into the Instantiate call

Bonus Challenge		Task	Hint
X	The spawn interval is always the same	Make the spawn interval a random value between 3 seconds and 5 seconds	Set the spawnInterval value to a new random number between 3 and 5 seconds in the SpawnRandomBall method
Y	The player can "spam" the spacebar key	Only allow the player to spawn a new dog after a certain amount of time has passed	Search for `Time.time` in the Unity Scripting API and look at the example. And don't worry if you can't figure it out - this is a *very difficult* challenge.