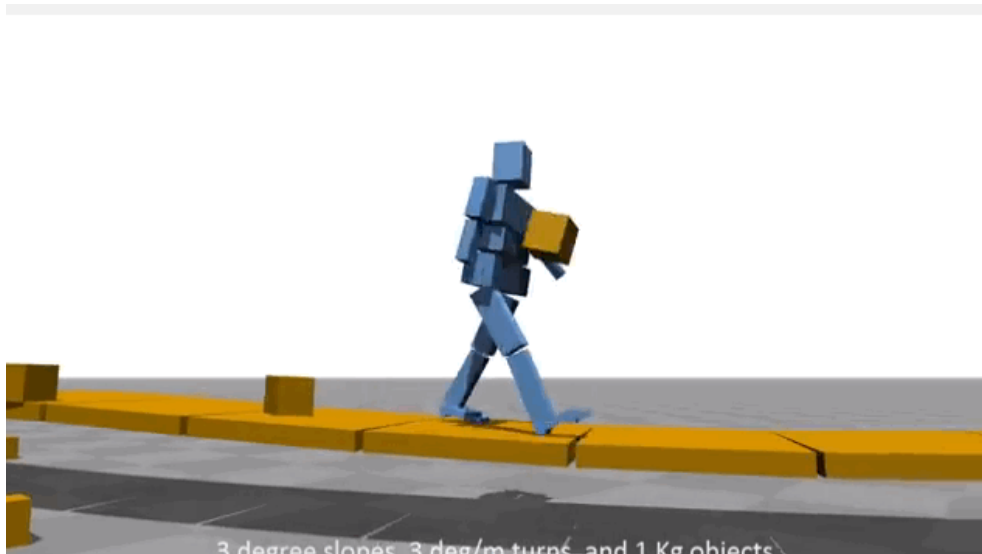


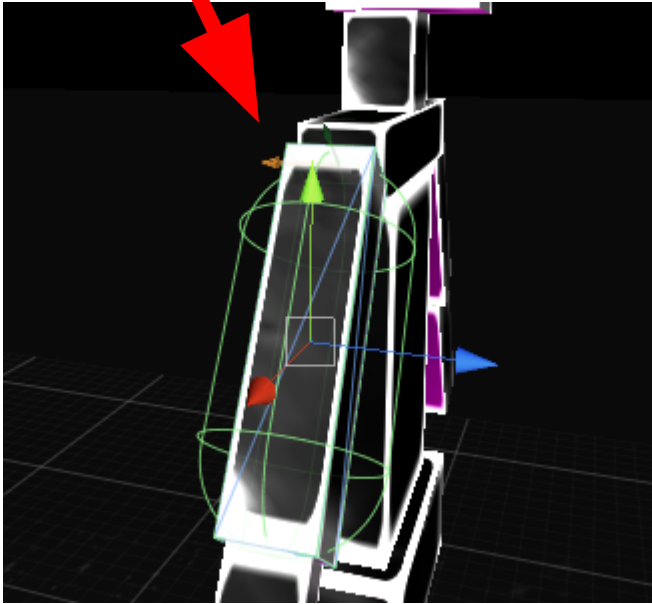
# **Silly Dance Generator**

# Goal:

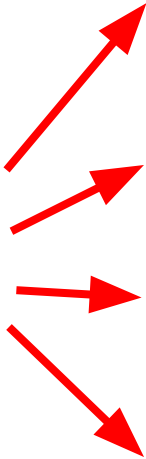
Make bodily motion that is entertaining in the same way this is (clumsy and awkward, yet still achieving the locomotive goal)



Set point of connection to another body part



Apply constraints to its range of motion



### Configurable Joint

Connected Body Shoulders (Rigidbody)

Anchor X 0 Y -0.07 Z -0.51

Axis X 1 Y 0 Z 0

Auto Configure Connected

Connected Anchor X -0.0149988 Y -0.01 Z 0.5

Secondary Axis X 0 Y 1 Z 0

XMotion

YMotion

ZMotion

Angular XMotion

Angular YMotion

Angular ZMotion

Linear Limit

Low Angular XLimit

Limit

Bounciness

Spring

Damper

High Angular XLimit

Limit

Bounciness

Spring

Damper

Angular YLimit

Limit

Bounciness

Spring

Damper

Angular ZLimit

Limit

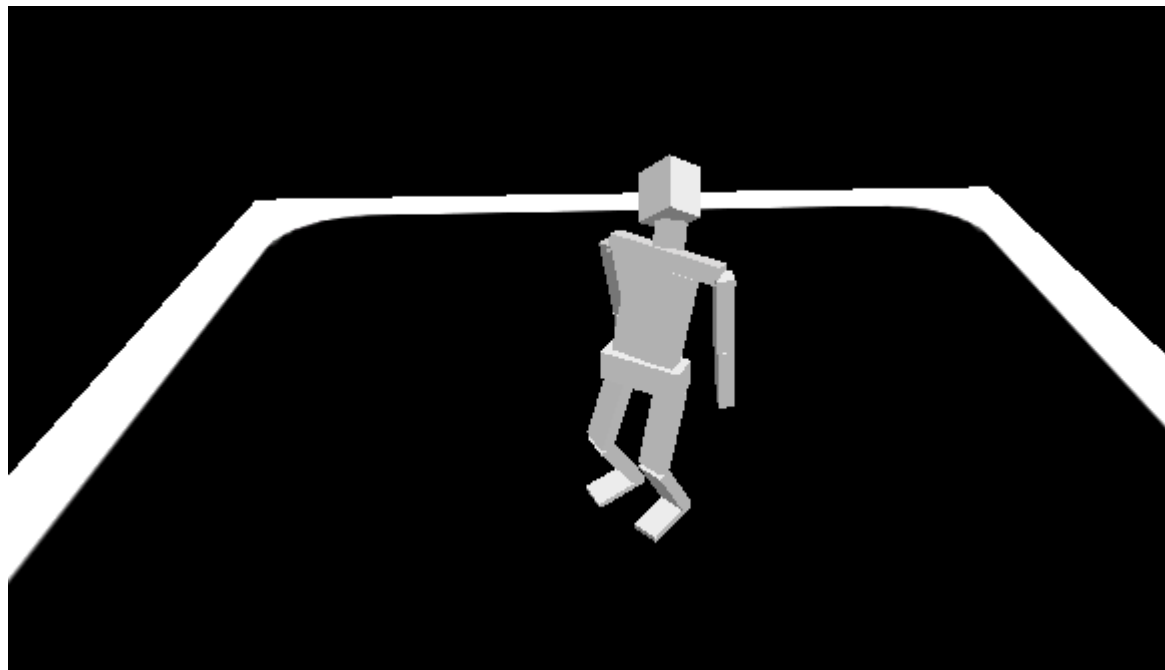
Bounciness

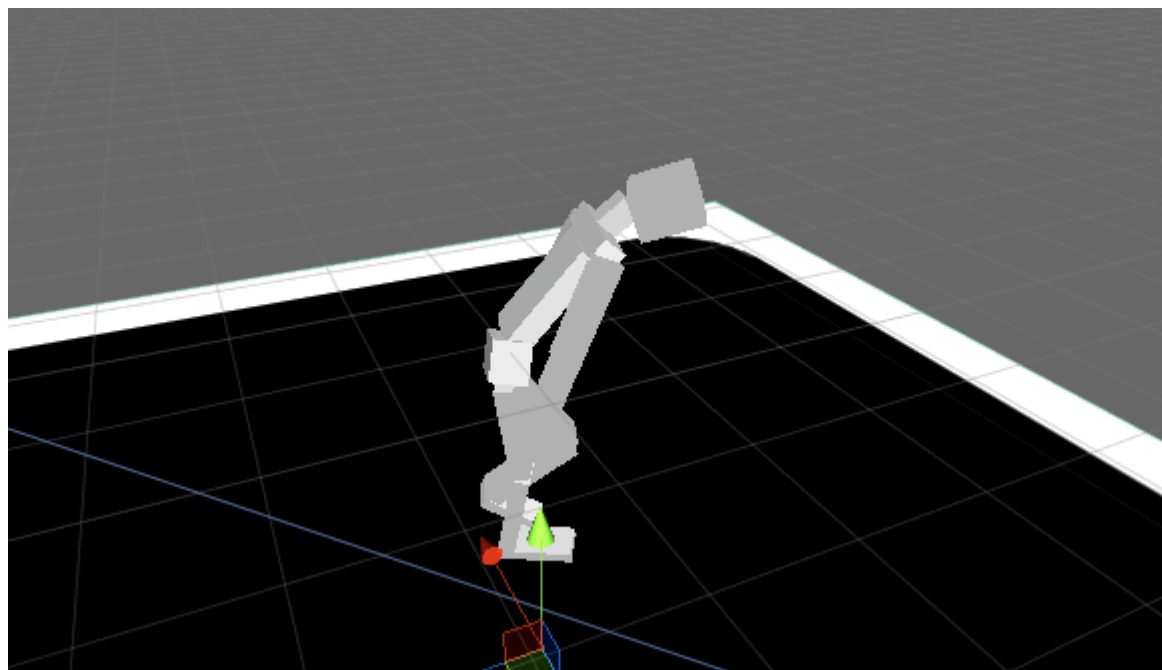
Spring

Damper

Target Position X 0 Y 0 Z 0

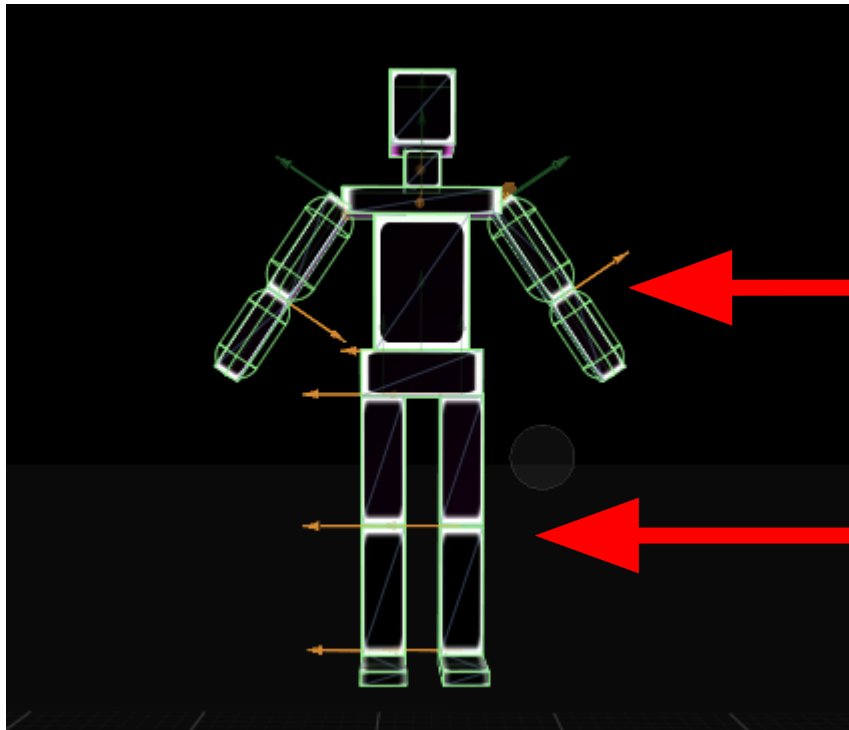
Target Velocity X 0 Y 0 Z 0







1



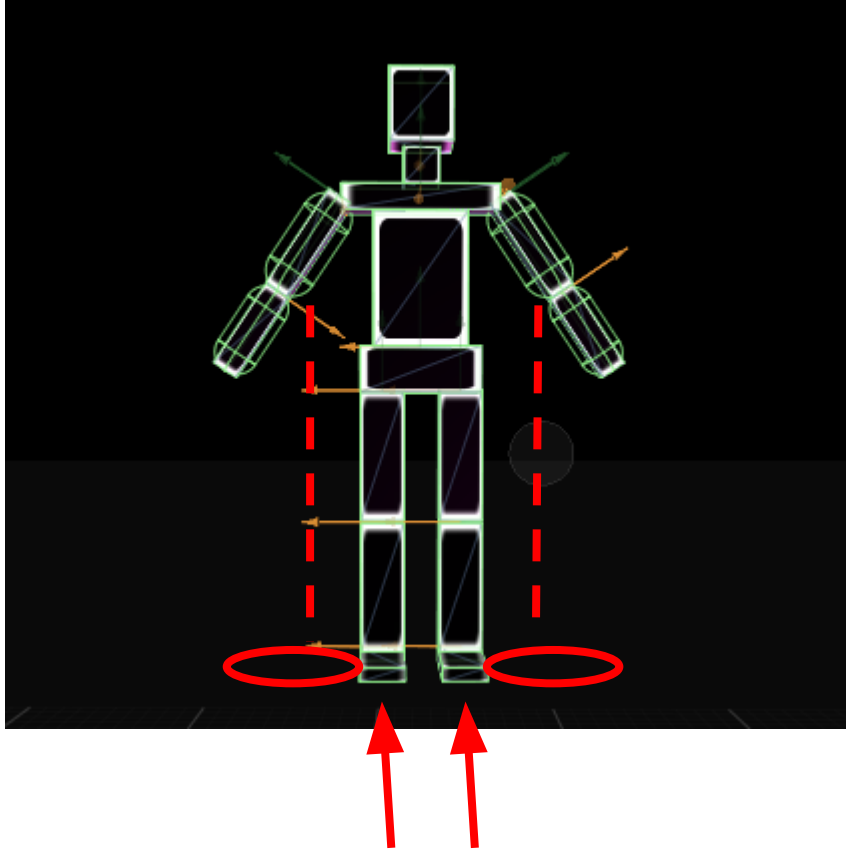
Elbows flex back and forth

Knees flex back and forth

The velocity of the flex is a random value between a preset max and min.

```
if((tooMuchResistance() || isFullyExtended())){  
    targetVelocity = Random.Range(minSpeed, maxSpeed);  
    contract ();  
}else if(tooMuchResistance() || isFullyContracted()){  
    targetVelocity = Random.Range(minSpeed, maxSpeed);  
    extend ();  
}
```

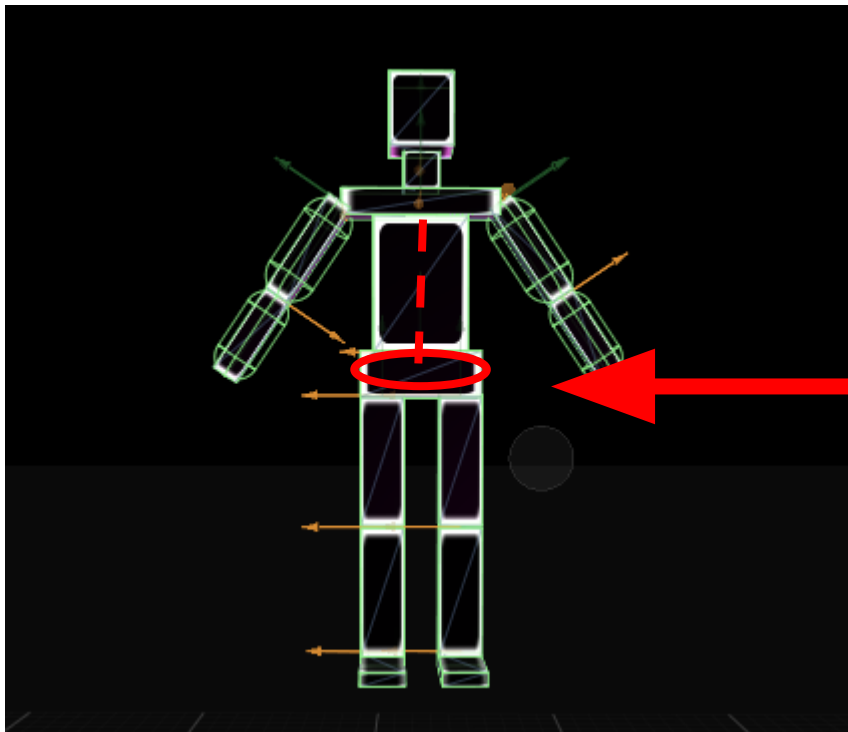
2



Feet try to move under directly underneath the upper arm on their side

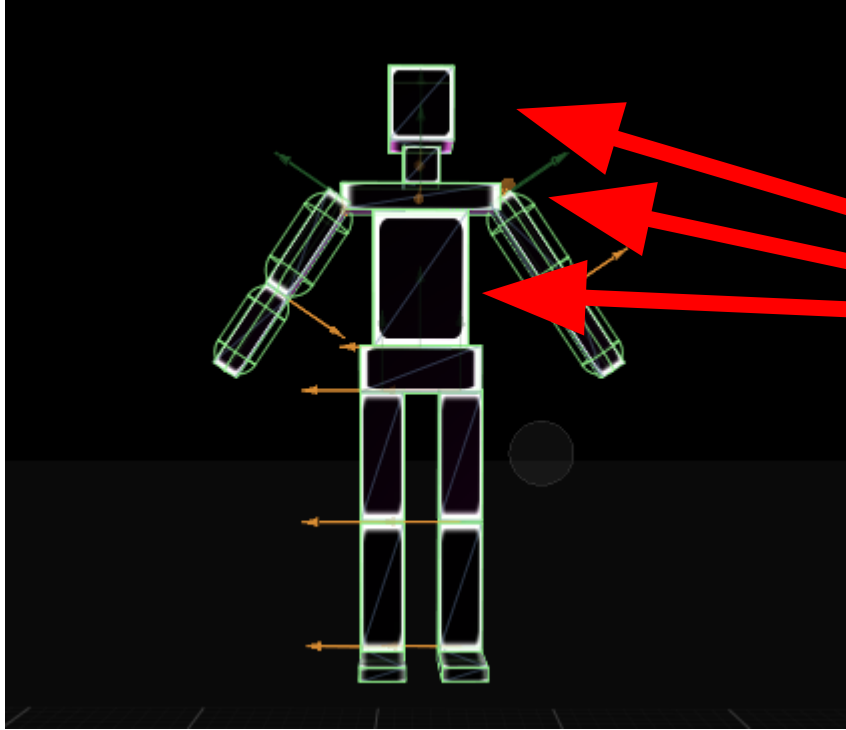


3



Hips try to move directly under the shoulders

4



Certain body parts sometimes given drag to increase stability

Web Build:

<https://cdn.rawgit.com/apiotrow/silly-walks/unity4/web/web.html>

Videos:

<https://www.youtube.com/watch?v=5DIskDDmYvE>

<https://www.youtube.com/watch?v=VqKN8i6pAPl>

# Techniques from class

Original plan:

1. Genetic algorithms
2. “Survival of the fittest,” i.e. some combinations of traits allow the character to walk/dance, while other cause it to lose balance and fall over

# Discoveries

- It doesn't take much skill to dance
- Having the right joint constraints adds a significant amount of realism to a human model
- The amount of joint gyration plays a big role in the nature of a dance