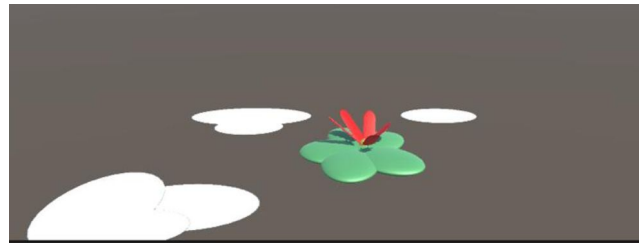# VR Final Project

Neal and Sommer

AR vs. VR

AR vs. VR
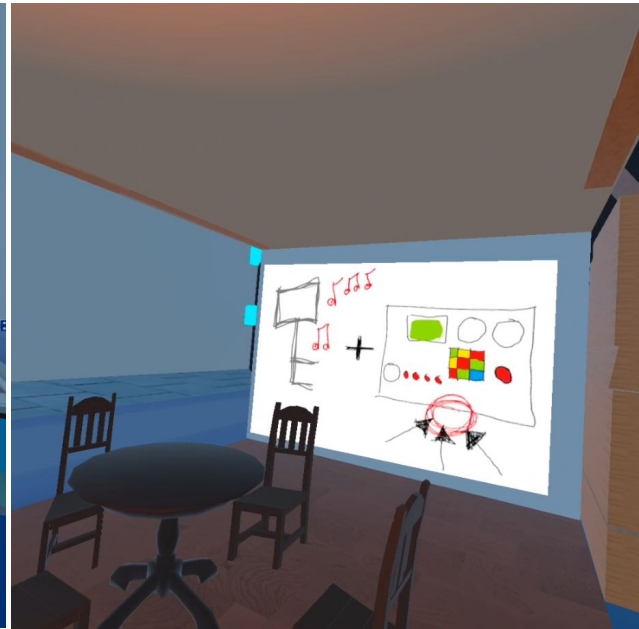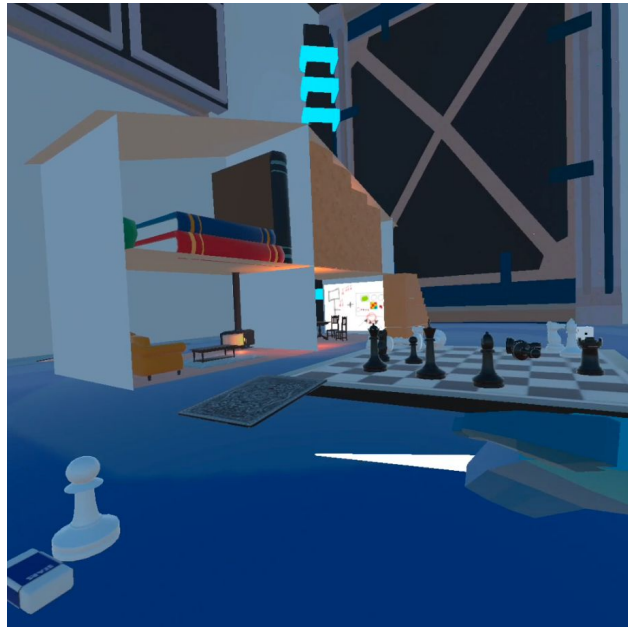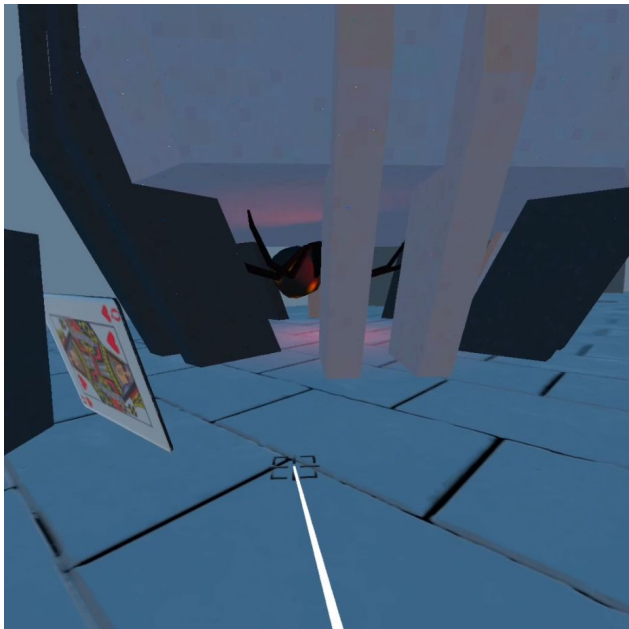

-Many more steps for configuration and deployment in VR than in AR

-We chose to create one large scene: scheduling and prefab scenes

-No pre-existing environment gave more freedom to add detail: change size

-Reverb Zones

-Haptic feedback!

"Fantasy of what is within arms reach"
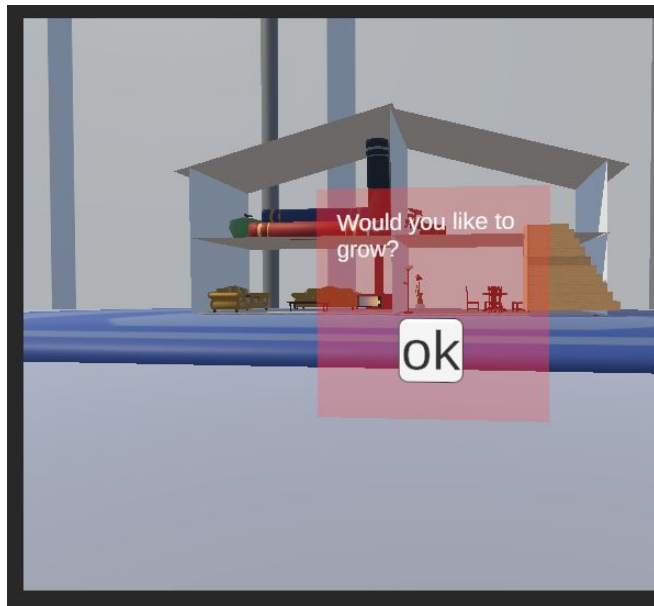
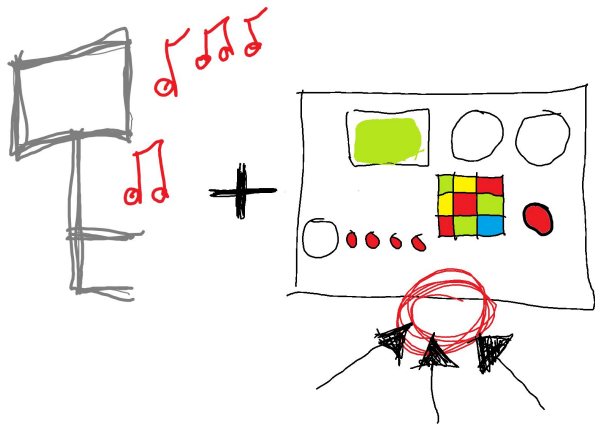Areas Only Accessible When Small

Scene 1: Dollhouse
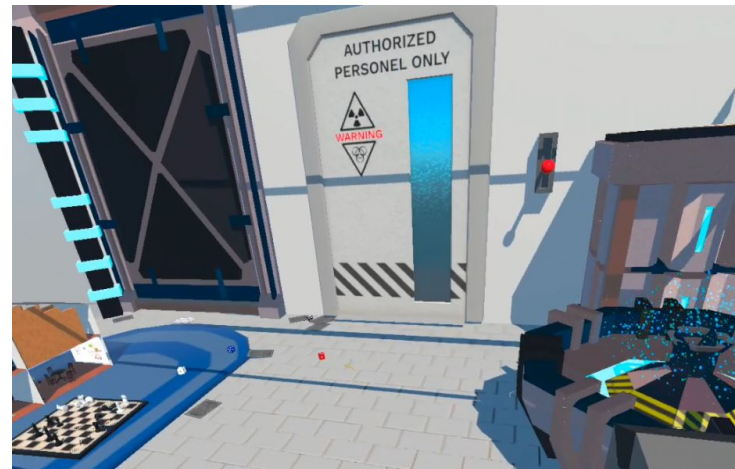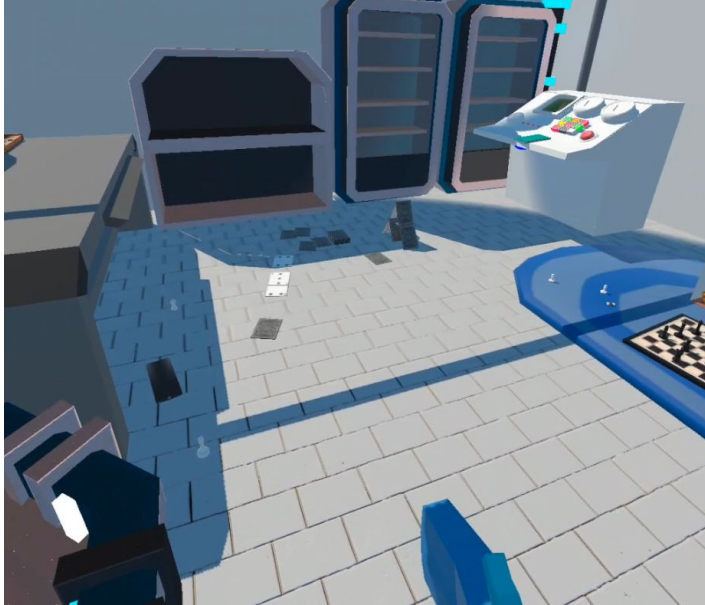
Play!

cabinets ——————————→ appearing key
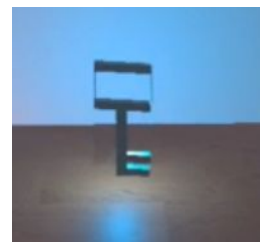
Grabbable stairs? Teleportation system?

Remote: fireplace, audio, key, stairs

Scene 2: Laboratory
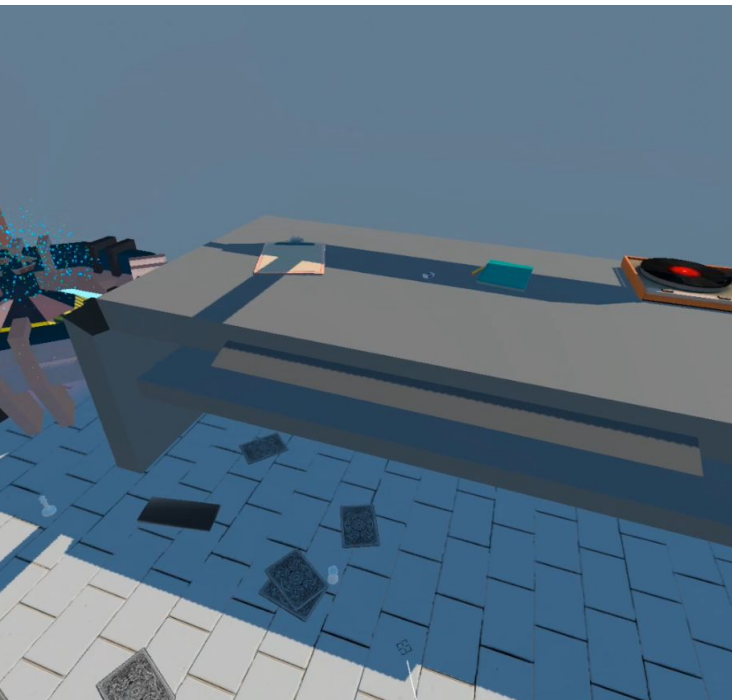
Reverb Zones/3D audio
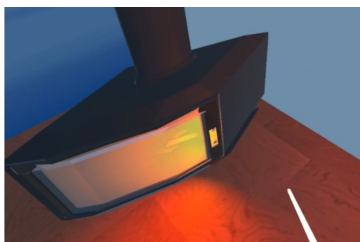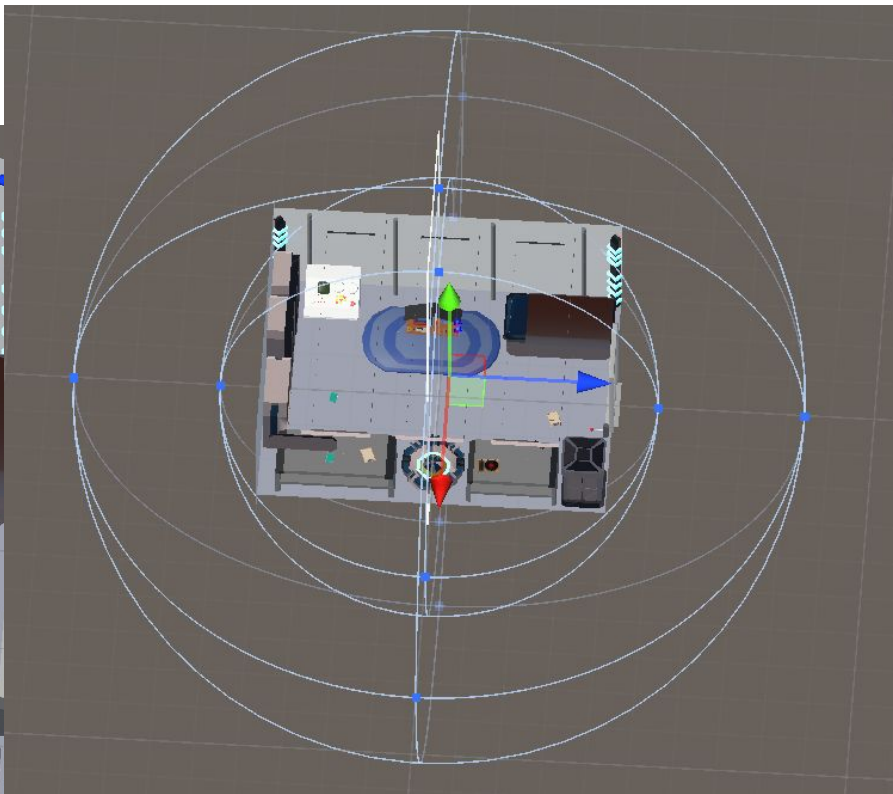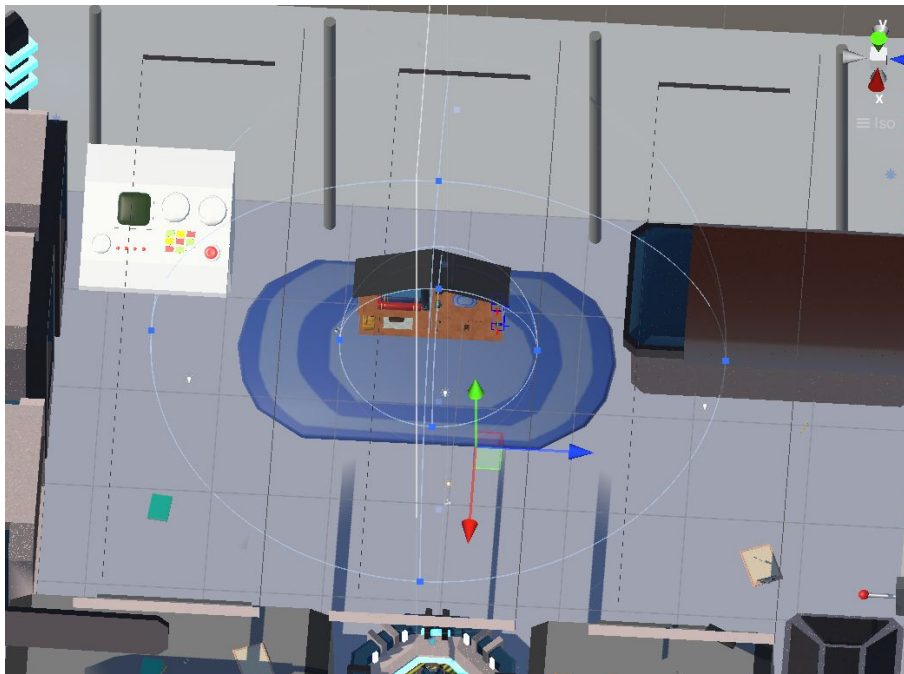
Technical Difficulties

Resize

Scale the Player

Scale the Scene

Scaling the Room

Adding in 3 variables for size distortion (minimum X, minimum y, minimum z) instead of just one minimum value for all three allowed more customization in scaling our objects.

Scaling the XR Rig


```
public void resize()
{
    Vector3 newScale = transform.localScale;
    if (small)
    {
        newScale *= scale;
    }
    else
    {
        newScale /= scale;
    }
    small = !small;
    transform.localScale = newScale;

}
```

Hinge Joints

Cabinet_Traditional
- Cabinet_Traditional
- **Cabinet_Traditional_Door_Left**
  - handle
- Cabinet_Traditional_Door_Right
  - handle
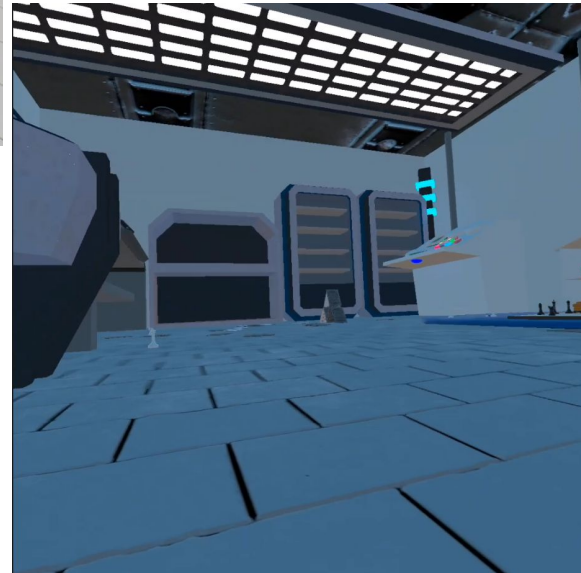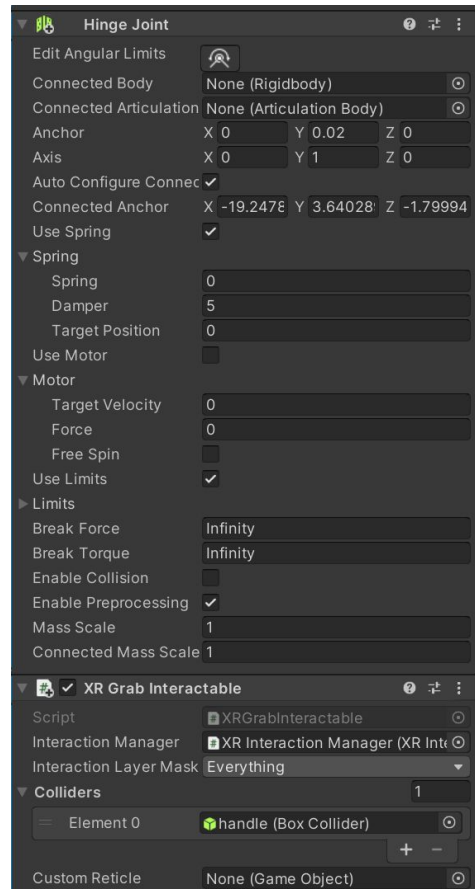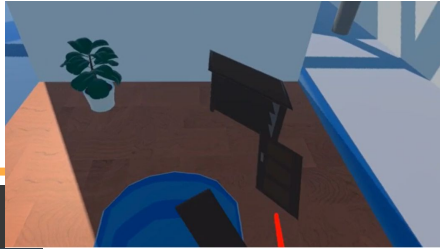
XR Grab Interactables

doesn't work well with

Hinge Joints

Hinge Joint

Edit Angular Limits	
Connected Body	None (Rigidbody)
Connected Articulation	None (Articulation Body)
Anchor	X 0 Y 0.02 Z 0
Axis	X 0 Y 1 Z 0
Auto Configure Connec	✔
Connected Anchor	X -19.2478 Y 3.64028 Z -1.79994
Use Spring	✔

Spring
Spring	0
Damper	5
Target Position	0
Use Motor	☐

Motor
Target Velocity	0
Force	0
Free Spin	☐
Use Limits	✔

Limits

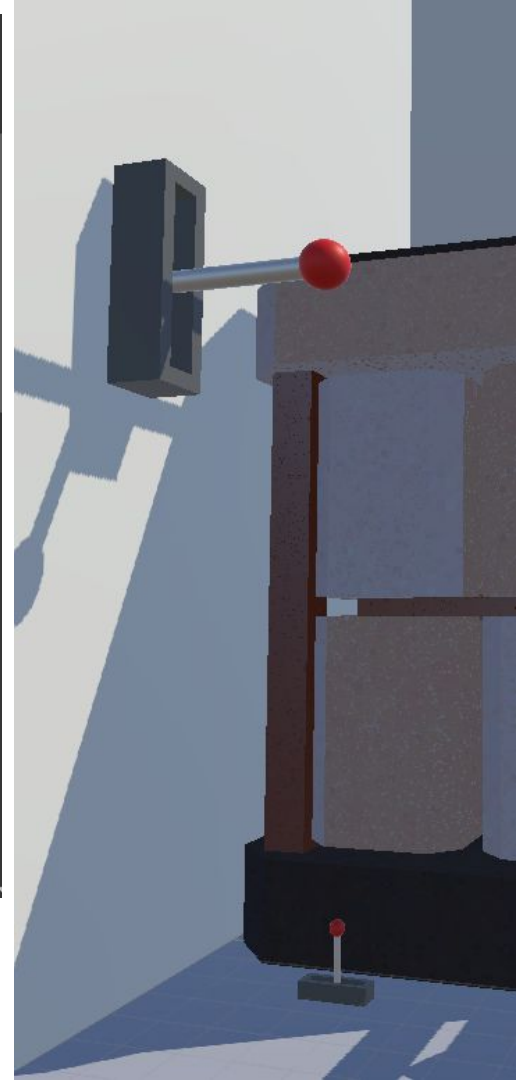|	
Break Force	Infinity
Break Torque	Infinity
Enable Collision	☐
Enable Preprocessing	✔
Mass Scale	1
Connected Mass Scale	1

✔ XR Grab Interactable

Script	XRGrabInteractable
Interaction Manager	XR Interaction Manager (XR Int
Interaction Layer Mask	Everything

Colliders | | 1 |
| Element 0 | handle (Box Collider) |

| Custom Reticle | None (Game Object) |

Hinge Joints

Convince the Player

Different Audio Reverb

Dollhouse Funhouse Distortion

Floor Texture
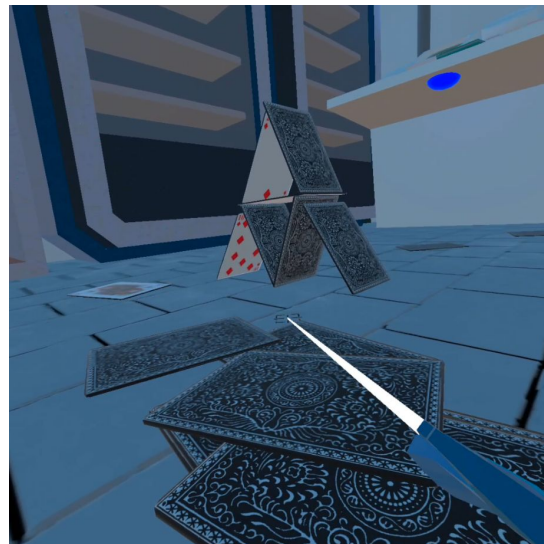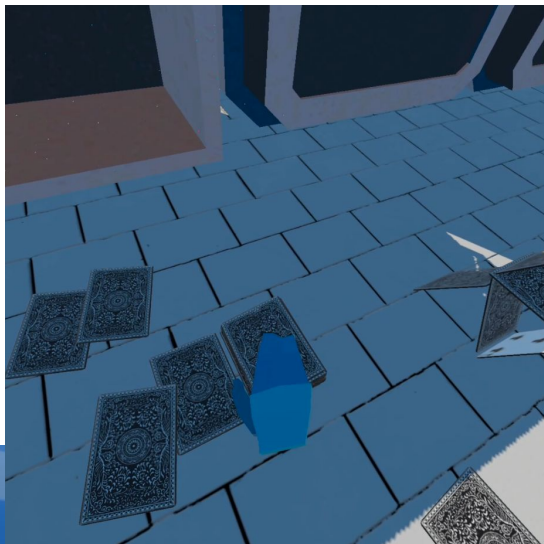
Places only accessible when small

Size Reference

More

Stuck in Wall   growing pain

Tiny Hands   hands doesn't scale with the XR Rig

Key Physics   attached invisible cube with separate physics

Invisible Colliders   a big one in the middle of the room and the colliders on the hands

Future Improvements

Future Improvements

Better Hand Physics

Nuance Interaction

More Gameplay