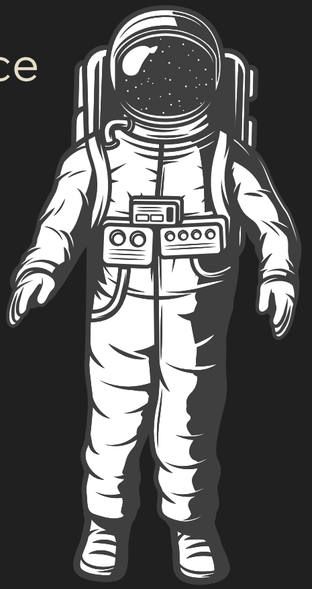
JANAS

Just A Normal Adventure in Space



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CONTENTS

CONTINUOUS MOVEMENT

SteamVR Input

JOYSTICK (L)

gives Vector2

- Vector2 actions are a combination of two analog values.
- These are used to move the player in X and Z directions. The defined speed in the script along with the direction and time gives displacement for the player.
- Character Controller component has been added to Player, that does not make use of Rigidbody physics. This integrates well with SteamVR prefab as it already has physical properties.

JUMPING

SteamVR Input

B BUTTON

gives Boolean

- Boolean actions are values that are either true or false.
- So on pressing the B button on the controller, the script gives an upward velocity to the Character Controller.
- To make it smooth and improve the user experience, we use square root function with jump height and gravity to calculate the velocity in Y direction.
- To prevent double jumping, the script first checks whether the player is grounded.

SteamVR Input

A BUTTON

gives Boolean

CROUCHING

Unlike jumping, pressing the A button reduces the height of the character controller to simulate the effect.

TELEPORTATION

SteamVR Input

X BUTTON

gives Boolean

When true, the player can see the teleport ray and is able to teleport to either teleport area.

Teleporting (Prefab) - This prefab sets up the entire teleport system. It gives the scene the ability to bring up the teleport pointer in the game.

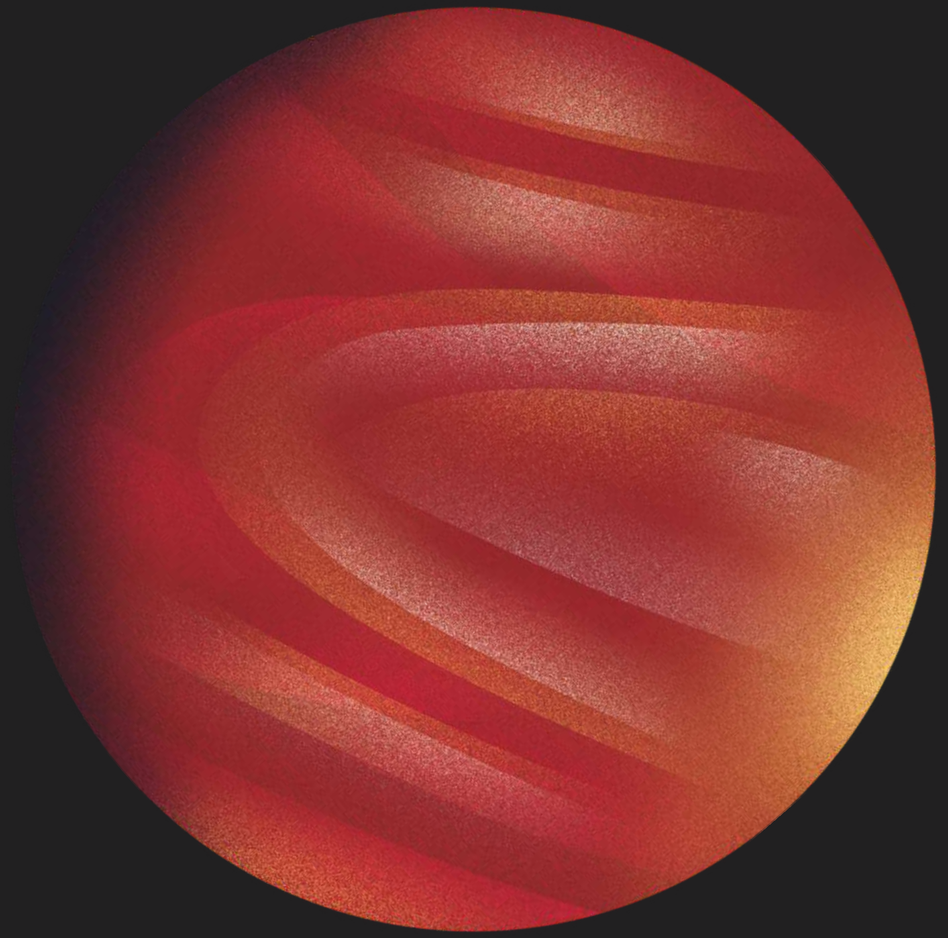
TeleportArea - When this component is added to any object with a collider and a mesh renderer it allows the player to teleport on it, exactly where they are pointing.

SNAP AND TURN

SteamVR Input

JOYSTICK (R)

gives Boolean



On moving the joystick to the left or right the player rotates about the Y axis by 45 degrees in that direction.

PUSHING BUTTON (GAMEOBJECT)

physical interaction

INETRACTABLE & HOVER BUTTON

On hovering over the button, it gets highlighted meaning it can be interacted with. On pressing down the button, the moving part moves downwards by a small amount. This ButtonClick event is detected by the button component (by HoverButton component) and the function for handling it is initiated from the defined script.

LEVER GAMEOBJECT

physical interaction

INTERACTABLE

with hinge joint

- On hovering over the lever, a yellow highlight appears which means it can be moved.
- This effect is a result of the intractable component of SteamVR.
- Each lever has a hinge joint component where the angular limits, anchor and axis have been set

LINE RENDERER

SteamVR Input

TRIGGER

gives Boolean

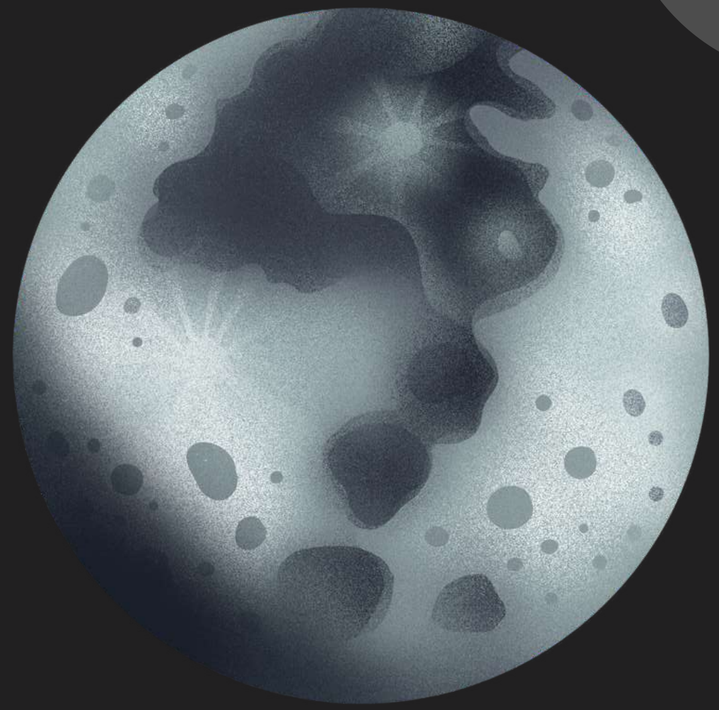
- Made use of Line Renderer for the laser component in the shooting scene
- Destroy the game object when the line renderer comes into contact with the game object collider to imitate it being shot down.
- Enable the trigger button pressed in the controller binding and when the trigger is pressed the laserGun function which has the transform position of the muzzle of the gun will initiate the lineRenderer component.

UI INTERACTION

SteamVR Input

LASER POINTER, TRIGGER

gives Boolean



SteamVR plugin provides a “SteamVR_Laser_Pointer” script that handles the heavy functionality of creating a pointer, physics raycaster & line renderer. It can target different identities like 2D, 3D and UI. This script is added as a component to the controller of the Player prefab. Then we create a scene-wide event handler that is one of the three following types of pointer interactions: on enter, on exit, & clicked.

CLIMBING

SteamVR Input

GRABGRIP

gives Boolean

- The SteamVR input system is used to detect when the player has grabbed onto a climbable object, and then moves the player up the object at a specified speed.
- This is done by casting a ray forward from the player's position to detect the climbable object, and then using the SteamVR action system to detect when the player is grabbing onto the object and move them up it using the transform.position property.

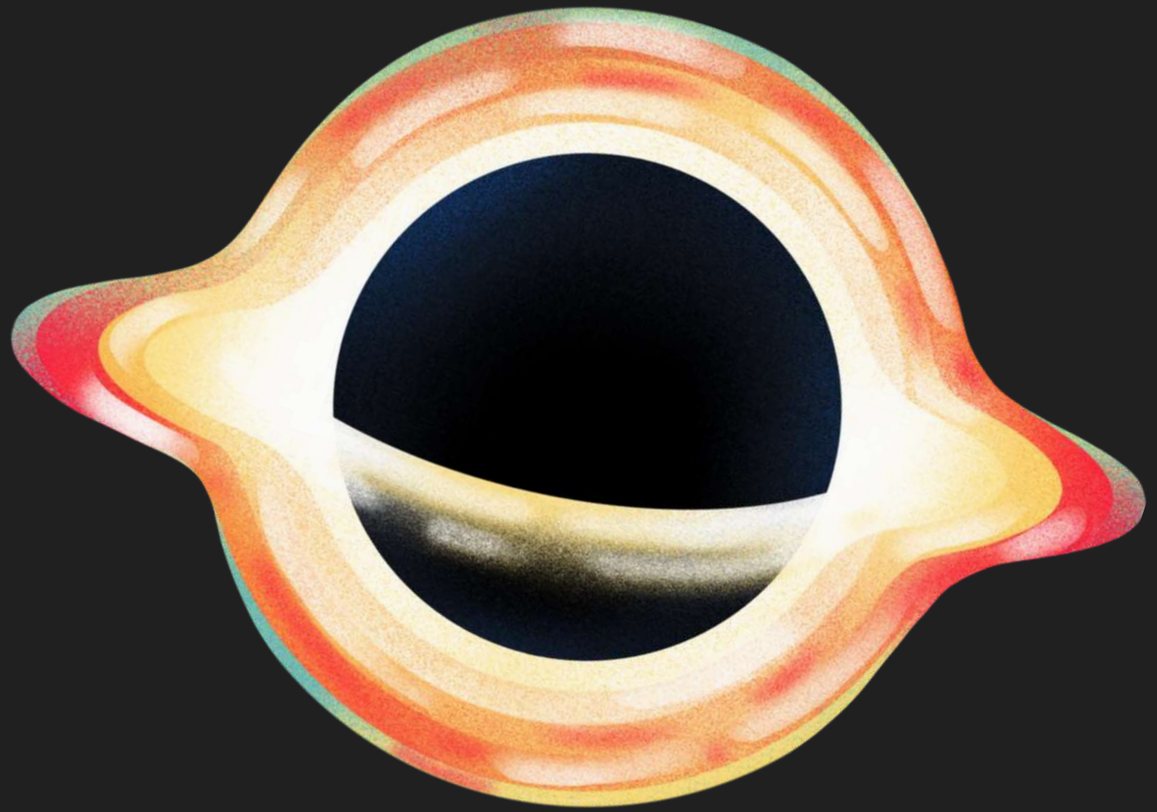
GRAB AND THROW

SteamVR Input

GRABGRIP

gives Boolean

- "Interactable" and "Throwable" components are used to enable the player to interact with and throw an object.
- SteamVR interaction system is used to detect when the player has grabbed onto an object.
- OnDetachedFromHand function used to detect when an object is released by the player.



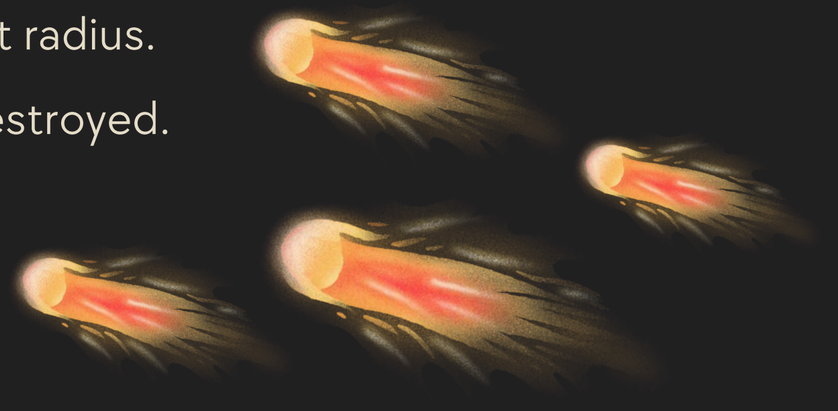
EXPLOSIONS

interaction between

OBSTACLES

with tags explosives & obstacles

- Initiate an explosion when an object tagged as an explosive is released by the player.
- OverlapSphere centered around the explosive to detect obstacles within its blast radius.
- Explosive force applied to detected obstacles, during which the obstacles are destroyed.
- Employ Unity Particle System to add visual effects to the explosion.

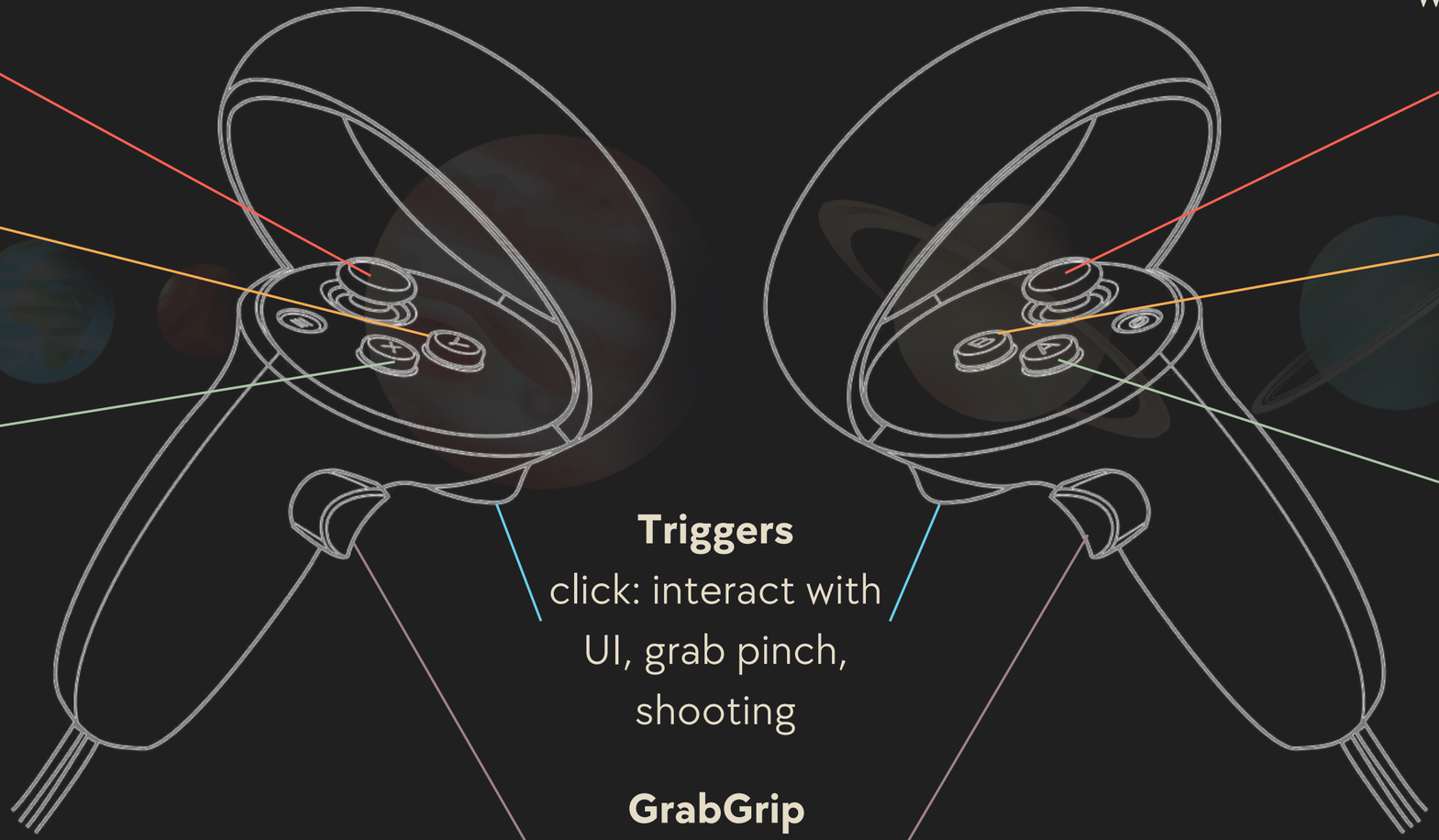


CONTROLLERS

Joystick (L)
position: touchpad

Y Button

X Button
click: teleport



Triggers
click: interact with UI, grab pinch, shooting

GrabGrip
click: grab grip
pull: squeeze

Joystick (R)
east: snap turn (R)
west: snap turn(L)

B Button
click: jump

A Button
held: crouch

THEME

Just A Normal Adventure in Space is an interactive obstacle course set in space, inspired by sci-fi media like Loki. The player is stuck on an unknown planet when aliens start attacking.

Destroy the aliens with a gun to gain access to the spaceship.

However, navigating the spaceship is not easy - complete all the obstacles to gain access to the control room of the spaceship and fly home!

THINGS TO NOTE

01

play the tutorial at the start to get familiar with the basic interactions then start the game.

02

if the player fails to cross an obstacle or collide with an object, they will respawn at the start of the scene

03

the player can only move onto the next obstacle after completing the current one

FLOW OF EVENTS

complete the tutorial then click on play (UI interaction)

defeat the aliens using the gun (Shooting)

enter spaceship and teleport across the moving platforms (teleportation)

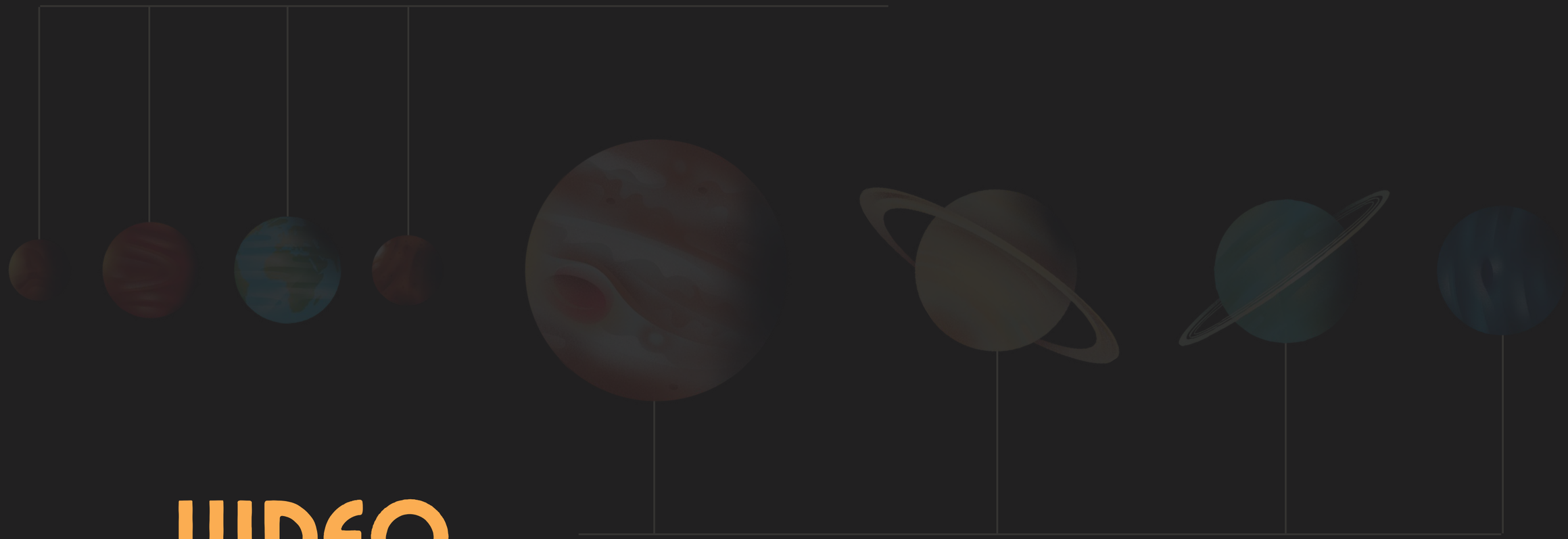
jump and crouch to avoid obstacles (continuous movement)

press the button and open the door (physical interaction)

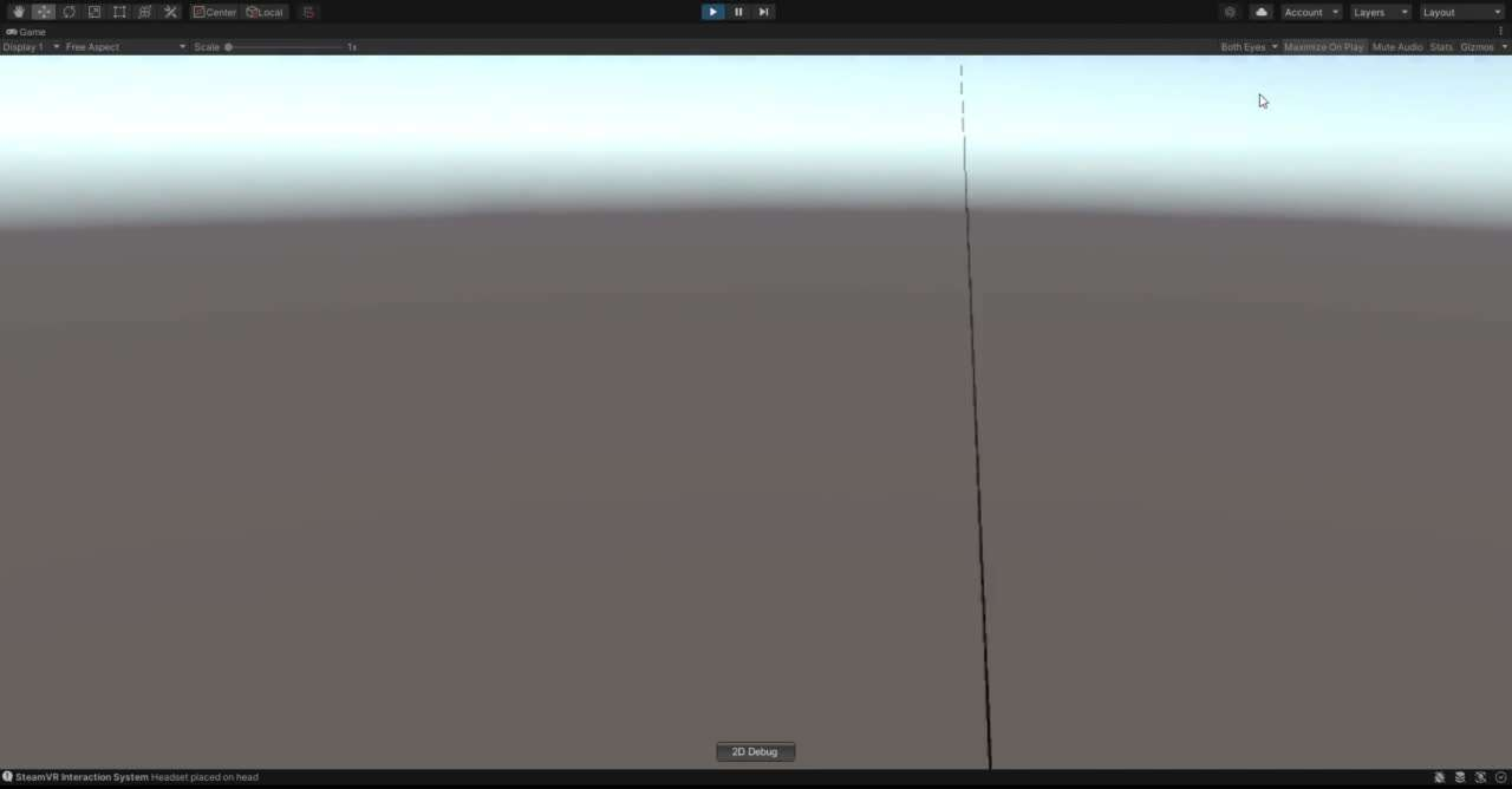
align the levers to match the picture (physical interaction)

grab and throw the grenade to destroy the blockers (grab and throw)

climb the ladder to enter the control room (climbing)



VIDEO


Center
Local
Account
Layers
Layout
Game
Display 1
Free Aspect
Scale
1x
Both Eyes
Maximize On Play
Mute Audio
Stats
Gizmos
2D Debug
SteamVR Interaction System Headset placed on head

CONTRIBUTIONS

NAME	CONTRIBUTION
Garg Astha	Continuous movement, jumping, crouching, teleportation, button gameObject, UI Interaction
Gupta Suhana	Climbing scene, UI design, slides
Jaheezuddin Aneez Ahmed	Grab and Throw, Explosions
Lee Jun Heng	Shooting Scene, UI Interaction
Ramasubramanian Nisha	Lever interaction scene

THANK YOU!