Virtual Reality Escape Room

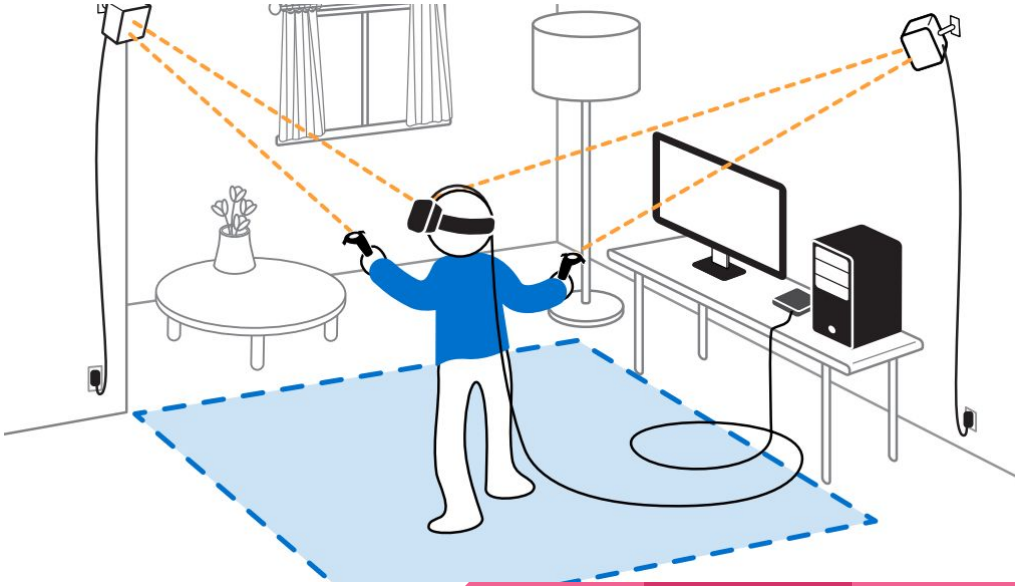
Mac Busby, Andrew Craig, Henry Kemp, Benjamin Wade

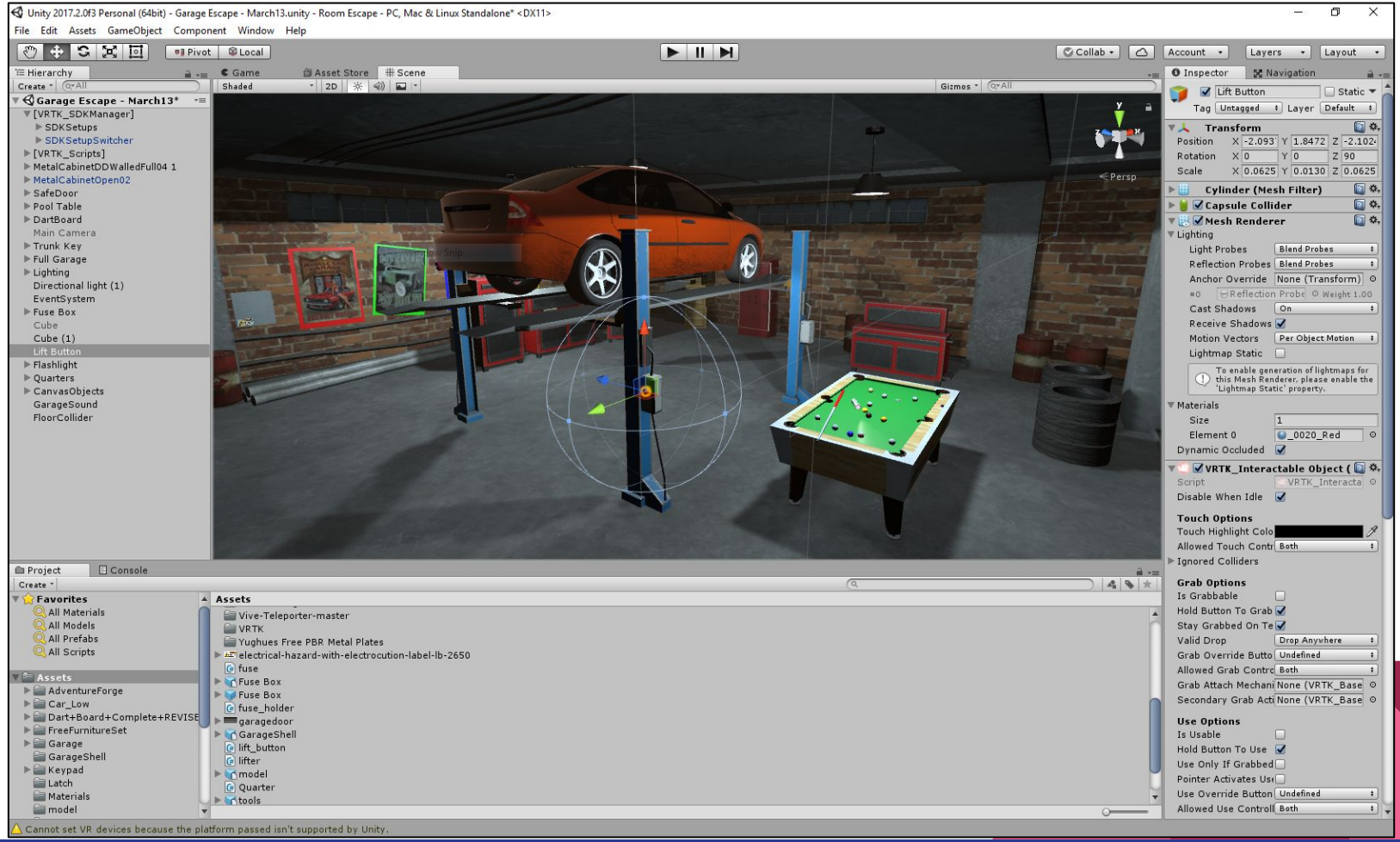
Presentation Outline

- Virtual Reality background
- Room escape games today
- Overview of our game
- Bugs that needed to be fixed
- New additions
- Project Timeline
- Challenges we faced

Virtual Reality and Unity

- Working in the Virtual Reality lab in Briggs
- Using Unity3D and the HTC Vive




Unity 2017.2.0f3 Personal (64bit) - Garage Escape - March13.unity - Room Escape - PC, Mac & Linux Standalone* <DX11>
File Edit Assets GameObject Component Window Help
Hierarchy
Garage Escape - March13*
[VRTK_SDKManager]
SDKSetups
SDKSetupSwitcher
[VRTK_Scripts]
MetalCabinetDDWalledFull04 1
MetalCabinetOpen02
SafeDoor
Pool Table
DartBoard
Main Camera
Trunk Key
Full Garage
Lighting
Directional light (1)
EventSystem
Fuse Box
Cube
Cube (1)
Lift Button
Flashlight
Quarters
CanvasObjects
GarageSound
FloorCollider
Game
Asset Store
Scene
Persp
Inspector
Navigation
Lift Button
Transform
Position
Rotation
Scale
Cylinder (Mesh Filter)
Capsule Collider
Mesh Renderer
Lighting
Materials
VRTK_Interactable Object (
Touch Options
Grab Options
Use Options
Project
Console
Favorites
All Materials
All Models
All Prefabs
All Scripts
Assets
AdventureForge
Car_Low
FreeFurnitureSet
Garage
GarageShell
Keypad
Latch
Materials
model
Vive-Teleporter-master
VRTK
Yughues Free PBR Metal Plates
fuse
Fuse Box
Fuse Box
fuse_holder
garagedoor
GarageShell
lift_button
lifter
model
Quarter
tools
Cannot set VR devices because the platform passed isn't supported by Unity.

Escape Rooms Today

- Big market; started with online computer games and evolved into real-life scenarios
- Physical adventure game in which players solve a series of puzzles using clues and hints in a given time period
- First started in 2007 in Japan, quickly expanded to over 2,800 locations worldwide as of July 2015
- Very popular among highly stressed students and overworked professionals
- Very few VR rooms exist; we purchased one in early 2017 to test of only 4 or 5 options on Steam

Project Background

- Project began in Fall 2016 as a project for the class: “Computer Graphics, HCI, and Virtual Reality”
- Aimed to create an escape room game in virtual reality
- Took the unfinished project and moved to complete it through our senior seminar
- Looking at a user’s sense of presence and immersion inside a virtual environment

Outline

- Trapped in a garage with a pool table, a car, and a workbench with cabinets
- All interactable

Outline

- Need to turn on the power to open the garage door, activate electrical items around the room, and escape

Outline

- Find fuses; put them in the fusebox in a specific order
- Puzzles throughout the room provide clues to players about fuse order, safe code, etc.

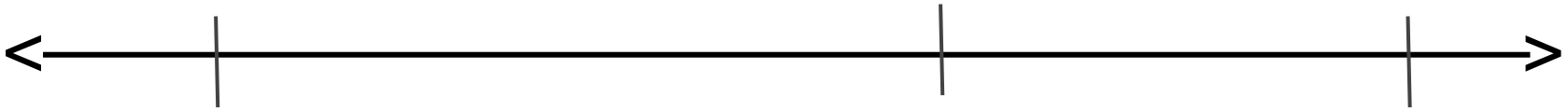
Features That Needed to be Fixed

- Major Issues
  - Teleportation
  - Physics of opening and closing doors
  - Picking up/putting down small objects
- Minor Issues
  - Interactable objects could fall through the floor
  - Cosmetic detailing

Features We Added

- Darkness/Flashlight
- Safe w/ keypad
- Locks and keys
- Dart board
- Car lift
- More items for users to interact with
- More puzzles/challenges

Timeline Goals

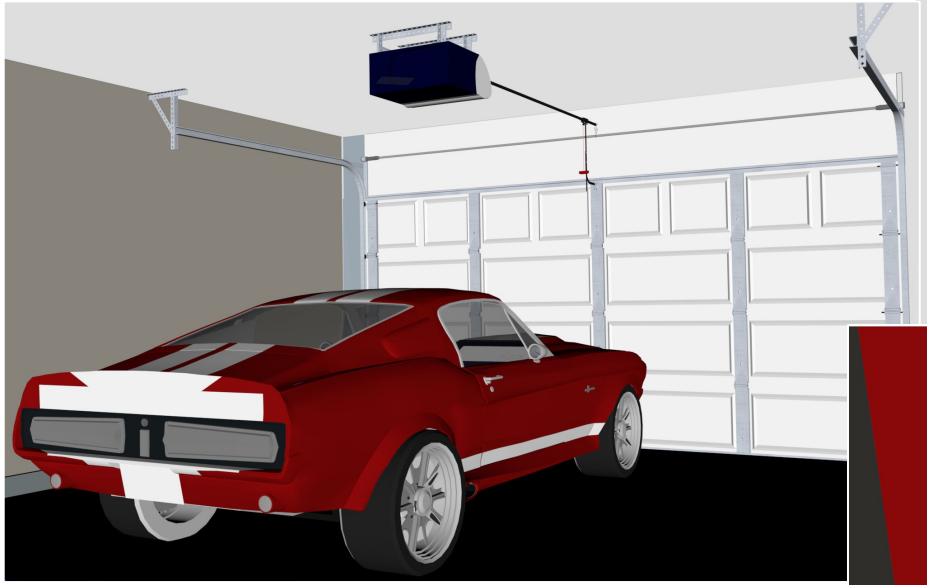


End of February: Fix all the bugs and begin testing for feedback

Beginning of April: Finish additions and begin second round of testing

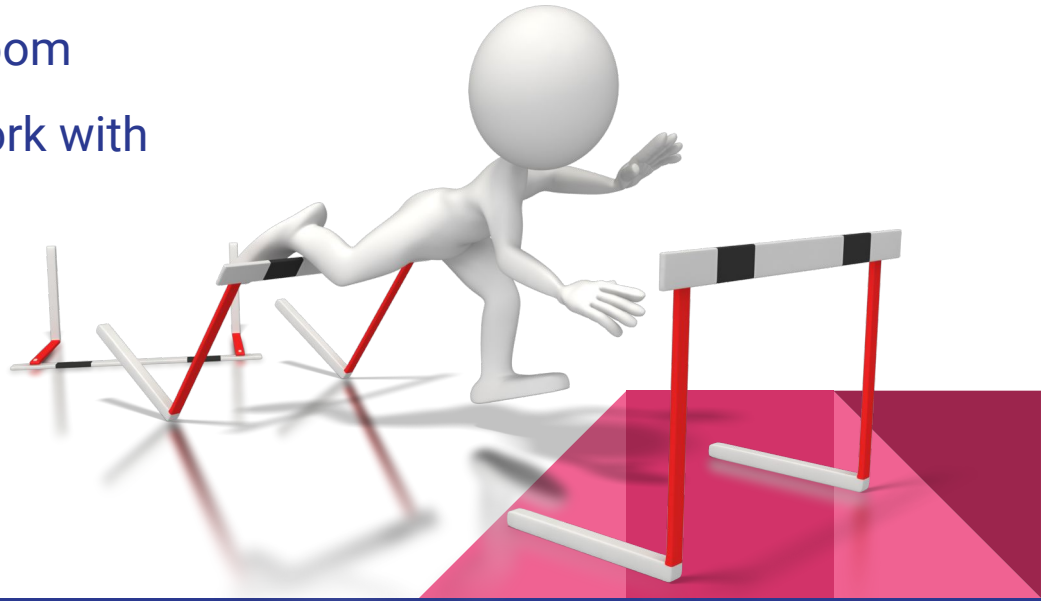
End of semester: Finished product

Starting Over



Challenges

- Project was deleted and not backed up properly
- Large scale project with small group that couldn’t always work together
- Importing new objects into the room
- Technology can be difficult to work with



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