Project Plan
House of Hazards
The Capstone Experience

Team Auto-Owners
Matt Drazin
Brian Wong
Kenneth Stewart
Frederick Lee
Kevin Nickolai

Department of Computer Science and Engineering
Michigan State University
Fall 2017
Functional Specifications

• Educate employees on home safety using virtual reality (VR)
• Competitive yet fun environment
• Prototype for future VR projects
Design Specifications

• VR-object interactivity
• Game environment for user
• User interface to review performance at round end
Screen Mockup: Difficulty UI
Screen Mockup: In-game UI

Score: 200
Time Remaining: 1:23
Hints: 3
Technical Specifications

• C# Scripting
• Auto-CAD 3D models
• Unity game engine
• Oculus Rift & peripherals
• Oculus Runtime
System Architecture

Oculus Rift Headset

Game Engine

Oculus Sensors

Senses Motions

Renders Game

Transfer data

Senses Motions/Controller input

Oculus Rift Touch Controller

Team Auto-Owners Project Plan
System Components

• Hardware Platforms
  ▪ Oculus Rift headset
  ▪ Oculus Rift sensor
  ▪ Oculus Touch controllers

• Software Platforms / Technologies
  ▪ Unity
  ▪ Visual Studio 2017
  ▪ Oculus Runtime
Testing

• Verify object placements
• Scoring unit tests
• Collision detection
• Hardware validation
• User experience tests
Risks

• Risk 1
  ▪ Adapting prefab scripts with current Unity version
  ▪ Code review scripts

• Risk 2
  ▪ Motion sickness
  ▪ Check Oculus documentation for solutions

• Risk 3
  ▪ Movement with Oculus in physical space
  ▪ Brainstorm safe way to manage Oculus cables

• Risk 4
  ▪ No available Unity assets for some objects
  ▪ Model assets
Questions?