Project Plan Presentation
Railroad Switch Alignment Training

The Capstone Experience

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Project Sponsor Overview

• The Union Pacific Railroad system is the biggest in the United States. Operates in 23 states
• Over 32,100 route-miles in 23 U.S. states west of Chicago.
• As of 2022, Union Pacific Railroad recorded a $147.23B U.S dollars market evaluation
Project Functional Specifications

• Misaligned switches lead to safety risks and property damage
• Web learning application
• Provide real footage of rail switches
• Help new and experienced conductors stay sharp
• Ultimately help prevent derailments
Project Design Specifications

• Tutorial – Teaches controls and identifying rails switches
• Levels – Test player on identifying a set number of rail switches using real footage
• SCORM – Reports player performance back to instructor
Screen Mockup: Start Screen

Railroad switch alignment training

Press any directional key to start
Screen Mockup: Tutorial

Which way is the track aligned?
Screen Mockup: Gameplay
Screen Mockup: Level Complete

LEVEL COMPLETE
Score: 10
Elapsed Time: 4:00

Press any directional key to continue
Project Technical Specifications

- Unity – 2D and 3D game development engine using C#
- WebGL – JavaScript library allowing unity software to run in a web browser
- SCORM – Industry standard specifications for learning content
Project System Architecture
Project System Components

• Hardware Platforms
  ▪ Desktop computer

• Software Platforms / Technologies
  ▪ Web browser
  ▪ C#
  ▪ LMS
Project Risks

• Risk 1
  ▪ Implementing SCORM into Unity
  ▪ Unity package to use that exports the WebGL build onto SCORM, but it needs work to function properly

• Risk 2
  ▪ Video playing in Unity
  ▪ Use dummy footage to test video player implementations

• Risk 3
  ▪ Importing/Exporting videos into application
  ▪ Create a prefab that can grab videos from an online database and test functionality to pull

• Risk 4
  ▪ Large files in WebGL
  ▪ Utilize the dummy video player and the SCORM interface throughout the semester
Questions?