Beta Presentation
Mobile Train Handling Simulator

The Capstone Experience

Team Union Pacific

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Project Sponsor Overview

- Union Pacific Railroad company first founded in 1862 under direct approval of Abraham Lincoln.
- Oversees 8,300 locomotives over 32,200 miles.
- Union Pacific employs subsidiary called PS Technology for software-based solutions which are mainly sold to other large railroad companies.
- PS Technology created the physics API for the train simulator we are using.
- Contact, named Jeff Girbach, is an MSU and Capstone alum from 2013. Specializes in simulation software at PS Technology.
Project Overview

• Distributed power handling simulator.
• Built in Unity with PS Technology’s Physics API.
• Control throttle and braking of train.
• Keep buff and draft forces in check.
• Complete level to unlock next level.
• On-the-go training for locomotive engineers.
• Cost-effective.
System Architecture

Core Technologies
- Microsoft C# .NET
- PST Physics API

Development Tools
- Unity: Development Environment, Game Engine
- Visual Studio: Code Editor

Build Platform
- Windows

User
Main Menu

Mobile Train Handling Simulator

- Start Game
- Options
- Quit
Level Select

Track: Tutorial
Train: 2x0x2
135 Cars

1-1  1-2  1-3  1-4  1-5
Welcome to 1-4! This track has a valley, that is, a decline immediately followed by an incline. Act quickly, and combine the techniques from the previous two levels! The force threshold timer has been increased greatly to account for the difficulty. Good luck!
Victory Screen

VICTORY
You have successfully completed the level!

Main Menu

Next Level
What’s left to do?

• Stretch Goals
  ▪ Custom Level and Train combinations
  ▪ Custom Sound Input

• Other Tasks
  ▪ Fix weight graph display
  ▪ Update milepost markers
  ▪ Fix terrain interaction bugs
  ▪ Finalize main menu UI
Questions?