Trolley of Terror

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Primary Goal

• Race against the clock and score as many points as possible within five minutes
• Pick up and then deliver students to their destination to increase score and extend play time
• Challenge friends and try to achieve the highest score!
Mechanics - Driving

• Drive the Trolley of Terror around campus with no regard for the safety of pedestrians
• Using the ‘w’, ‘s’, ‘a’, ‘d’ keys, control the acceleration, braking, and maneuvering of the Trolley
Mechanics – Picking Up

• Trolley stops will glow green when there are people waiting to be picked up
• Park the trolley within close proximity of the trolley stop for 4 seconds to pick up new passengers
Mechanics – Picking Up

03:24

Score: 15

Passengers: 1
Mechanics – Dropping Off

- Passengers will decide a new trolley stop as their destination
- These trolley stops will glow red when passengers are ready to be dropped off
- Park the trolley within close proximity of the trolley stop for 4 seconds to drop off passengers
Mechanics – Dropping Off

02:07

Score: 290

Passengers: 10
Pick Up and Drop Off
Rewards

• Running over passengers rewards the player with a single point
• Picking up pedestrians rewards the player 10 points and an additional 5 seconds of play time
• Score big and drop passengers for 50 points and 10 seconds of additional play time
Level Design

- Fully recreated and modeled roads, buildings, and trolley stops of the F.I.T. campus
- Accurate representation using OpenStreetMap and Google Maps data
Level Design
Sound Effects

• Real engine sounds when driving the trolley
• Pedestrians scream and yell when being crashed into by the Trolley of Terror
• Running into obstacles such as buildings or stops lets the player hear the damage done to the trolley
Artificial Intelligence

- Pedestrians start at one of the many entrances of the buildings on campus
- Running to a randomly selected destination
  - 5% chance to run to a trolley stop
  - 95% chance to run to another building
- Pedestrians will wait at a trolley stop until picked up
- While riding the trolley, NPCs select a new destination
  - The closest Trolley stop to this destination will be illuminated
  - NPCs then walk to their destination after being dropped off
Lessons Learned

• What worked?
  – Working on the project regularly kept us on schedule
  – Unity is easy to learn
  – Splitting the workload

• What didn’t work?
  – Editing the map
    • Can’t texture buildings individually
    • Can’t change their size individually
Tools (1)

• Unity Engine v5.0.1
  – The game engine
• OpenStreetMap
  – An open source version of Google Maps. One of its functions is to export a portion of the map into a .osm file (see below)
• OSM2World
  – Uses the .osm files exported from OSM and creates a 3D model of the area. It can be exported in .obj, which Unity can use directly.
Tools (2)

• Blender
  – Mainly used for the modeling of the trolley

• Unity Asset Store
  – There’s a lot of free assets that can be directly imported into the project. We obtained the following:
    • Imported character models and scripts
    • Imported scripts for the driving mechanic of the trolley
Demonstration
Questions?