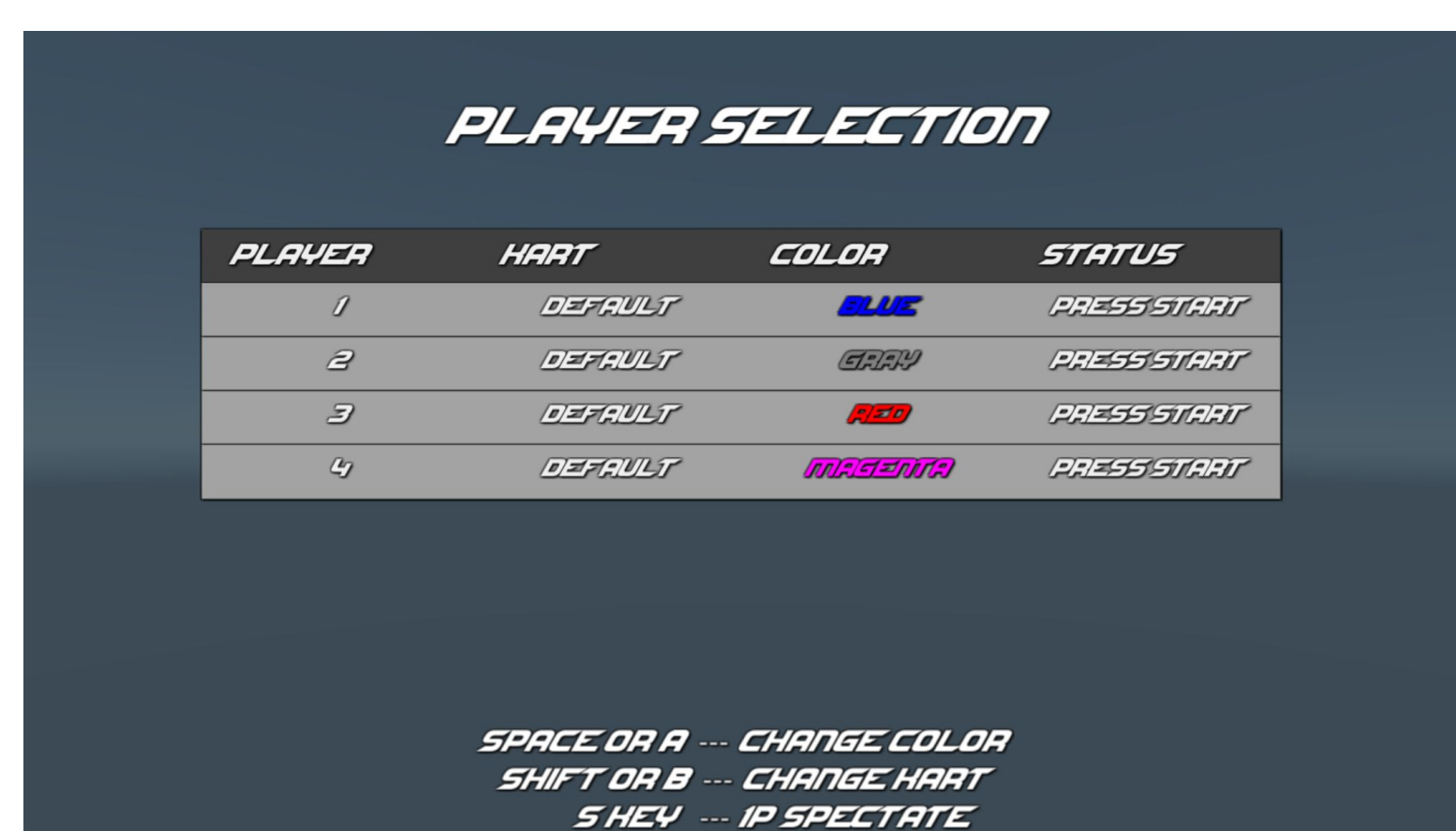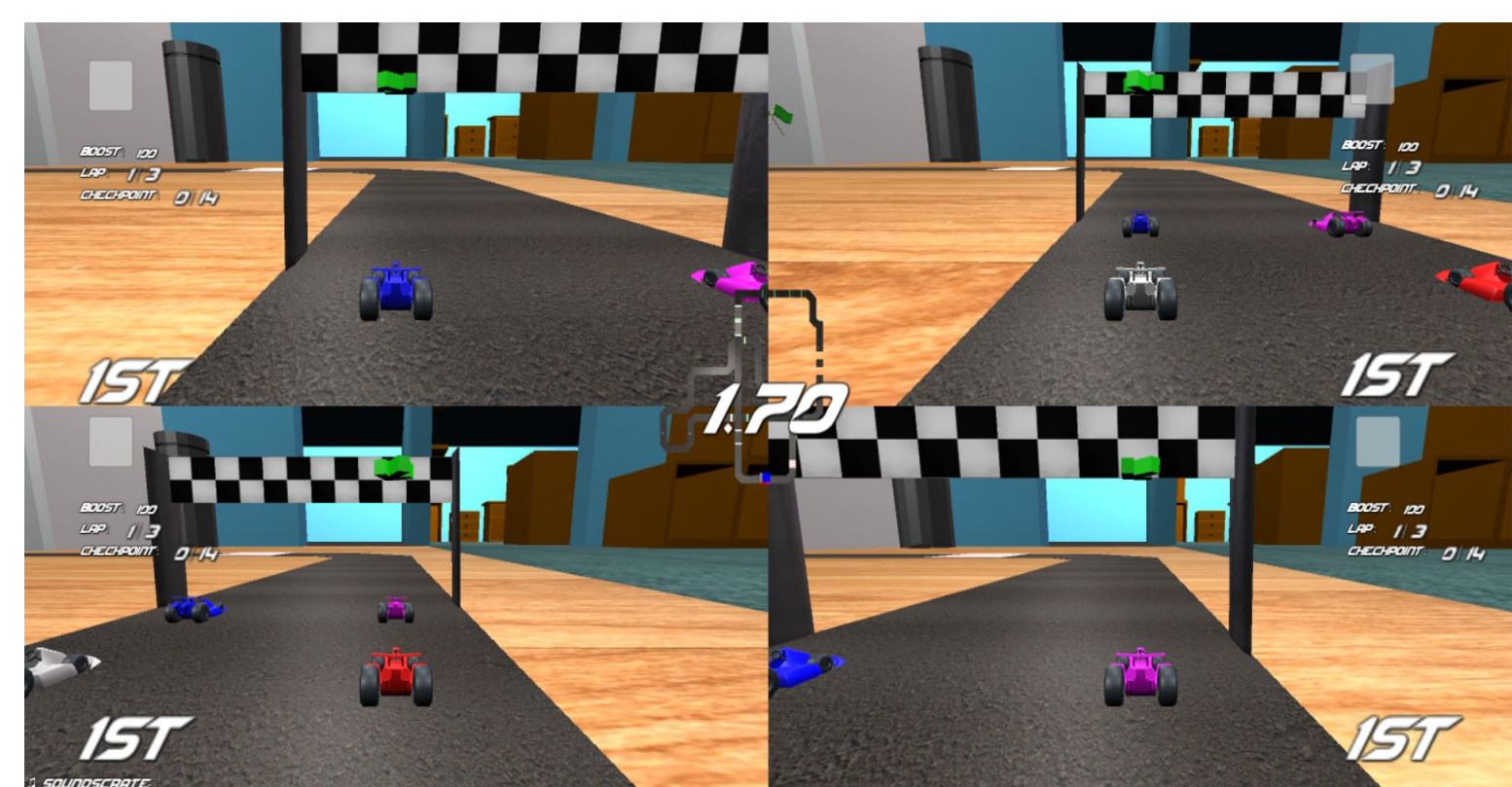# LOCAL MULTIPLAYER

- **Couch Party Racing** was conceived through mutual love for local-multiplayer games

- All three game modes are designed for 2-4 players

- Game modes focus on interactions between players, such as through **Power Ups** or battle mechanics

- Support for concurrent keyboard/mouse and gamepads through **SimpleInput**

# Couch party racing

# SIMPLEINPUT

- Abstraction of default Unity Input system

- Provides configurable in-game controls and easy local multiplayer support.

- Supports keyboards, Xbox 360, Xbox One, and PS4 controllers

# PHYSICS

- Simplified physics model creates 'kart racer' feel

- KartPhysics object leverages Unity's physics engine to allow **dynamic physics applications** and **reusability** in all three game modes

- Forces applied in the kart's local z-direction for **acceleration**, and **rotation** along y-axis allows for turning

- Dynamic speed calculations allow for limiting forces under varying conditions: such as jumping, reversing, and driving off track
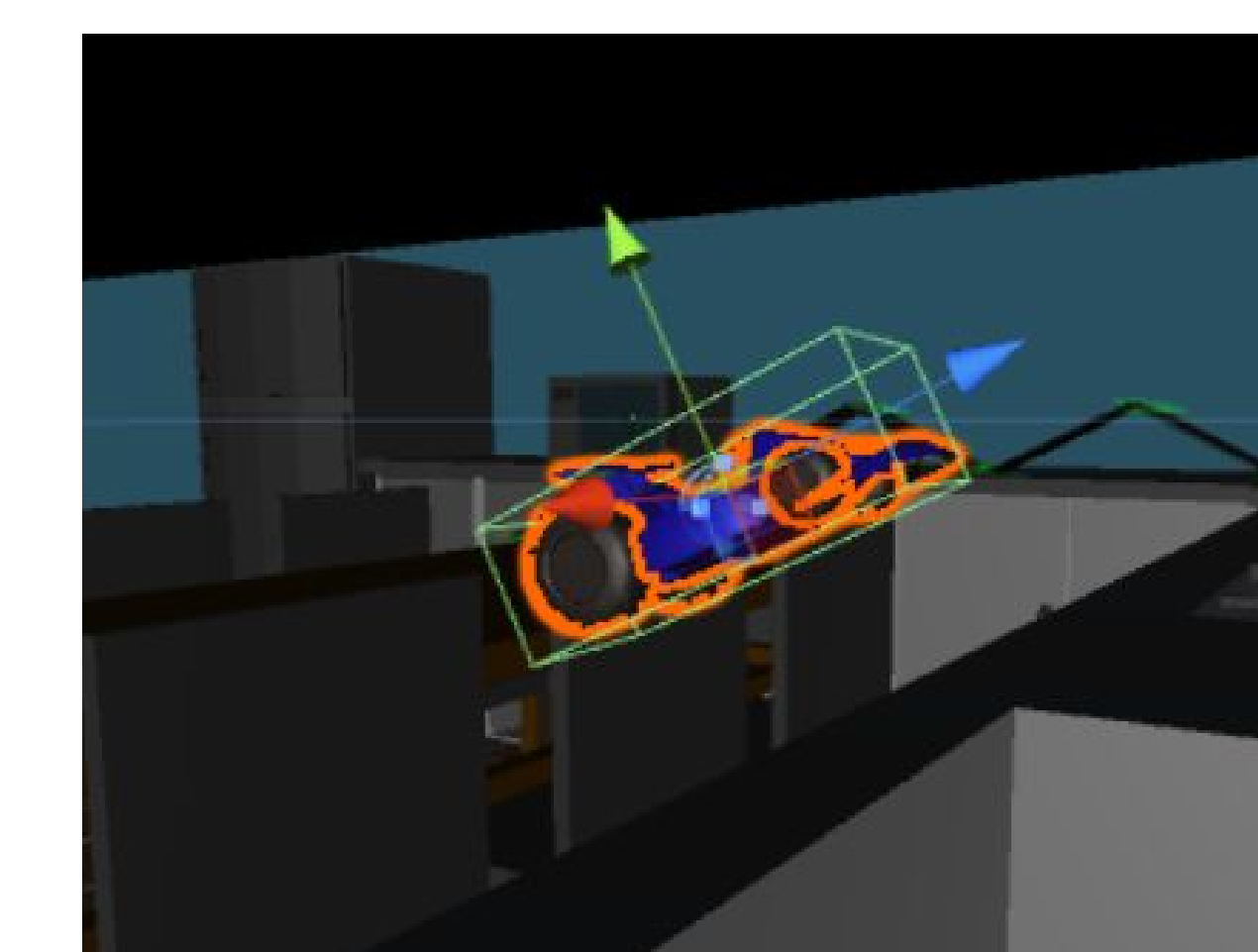
# TRACK BUILDER

- Allows the user to create/edit their own tracks and play them with other friends or AI

- Completely run in-game with fully compatible controls (keyboard/gamepads)

- Provides a grid based structure so the user can snap pieces of track together without worry of overlapping

- Stored and exported into XML files for easy parsing and sharing

# CHECKPOINTS

- Maintain player progression through courses

- Prevents cheating through skipping track parts

- Allows reset and arrow indicator functionalities

# AI

- Each track prefab has a waypoint trigger

- Waypoint order is determined at runtime

- AI Karts proceed through tracks by using a steering agent, combined with forces applied using the above described KartPhysics model

- The agent steers towards its current target waypoint, and after it reaches this waypoint, it steers towards its next target

# DEVELOPERS

**Matt Bartholomew**
**Jack Butts**
**John Cramer**
**Kyle Powers**
**Connor Swick**

Couch Potato Gaming

unity

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