Final Presentation: Tron

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Comparison - Original vs Implementation

Tron

Mechanics
- Block enemies with walls
- Turning pauses game for 0.1 secs
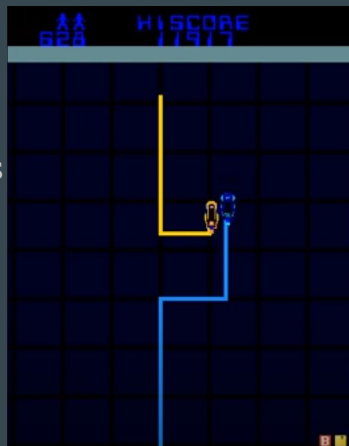- Increase/decrease of speed
- Single Player

Entities
- 1+ AI Enemies
- Walls - Bikes explode when hit

Win Conditions
- Kill 'em all

Progression
- No end state - 4 mini games, light cycle one of them.
- After finishing all 4, repeat but on harder difficulty.
- Here, harder = more enemies - 1 v 3

Tron't

Mechanics
- Block enemies with walls
- Instant Turning
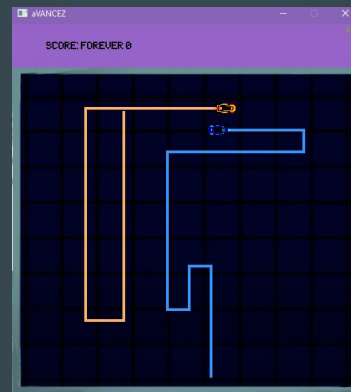- 3 Gears
- 2 Player

Entities
- 2 Human players
- Walls

Win Conditions
- Duel - Player who survives wins

Progression
- None
- Even score not implemented

Updated Prioritized Features to Implement

Unrealistic but no other way Roadmap

1. Fix Grid-like Movement
2. Fix Walls to connect properly
3. Implement Collision Detection
4. ~~Implement Enemies~~
   a. ~~Implement Enemy Behaviour~~
   b. ~~Implement Multiple Enemies~~
5. ~~Increasing Levels(1,2,3 Enemies)~~
6. Sound
7. ~~Score,~~ Background
8. Choose Additional Feature if there is time
9. ~~Optimize Performance/Architecture~~

Week 1

Week 2

Next Course

Main Features || Challenges

Bike Movement
- Grid-like
- Different Speeds

Walls
- Collidable
- Put behind bike, account for different speeds
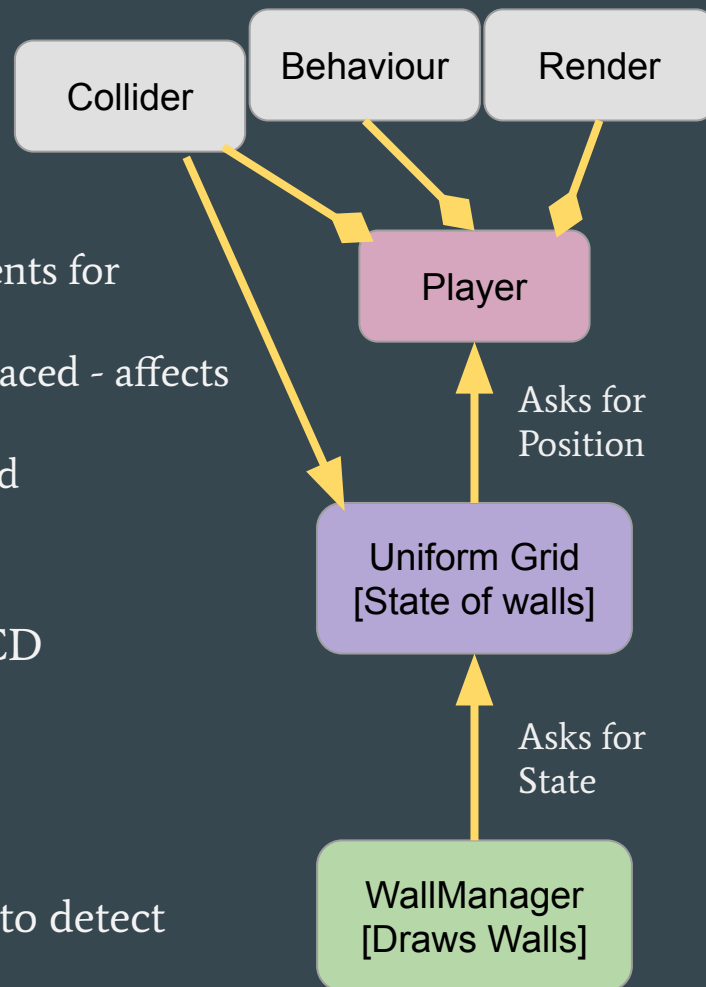
Bike Movement Issues
- Each direction needs adjustments for smooth movement
- Connected to how walls are placed - affects walls, and vice versa
- Crashing into wall right behind

Wall Issues
- Many - slow if brute forced CD
- Cannot be "Object" by itself
- Stupid drawing issues
    - Connection issues
    - Sprite vs no sprite
- No collider vs collider - how to detect collisions?

Collider

Behaviour

Render

Player

Uniform Grid
[State of walls]

Asks for Position

Asks for State

WallManager
[Draws Walls]

Main Features || Challenges

Bike Collision
- Hitbox size - If wall placed at gameobject position, immediate crash
- Accounting for different speeds while turning - too big of a hitbox crashed while turning
- Too small hitbox skipped walls at high speeds
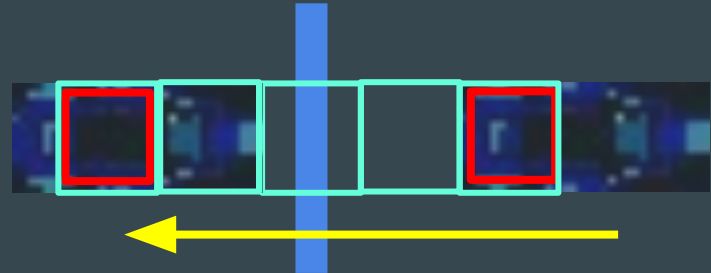- Bike crashing removes their walls - state needs to remember who wall belongs to

AI
- Never solved, never implemented
- Maybe tomorrow

Grid
- Modifying cell size = modifying everything else

Why is game.h a Gameobject

Unresolved Issues

Sound
- Loaded in Engine, played in game.h
- Preferably in Sound object

Image Loading
- Also loaded in Game
- Preferably in different components

Score
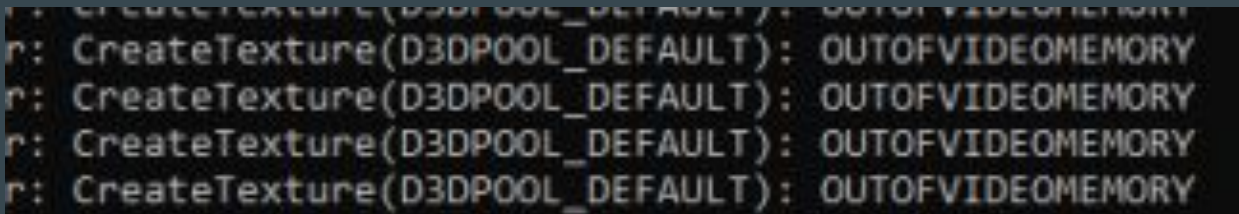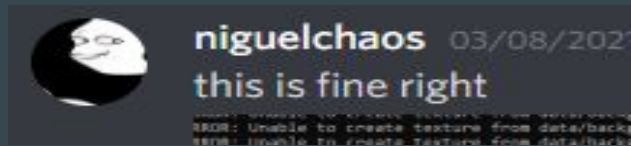- Simply not prioritized - original had High Score, Lives

Restarting / Resetting
- I don't know, I can't

Memory Leaks
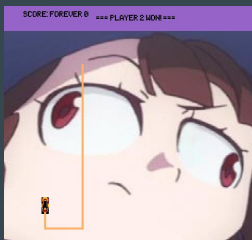- A lot of them. Probably.

Player Movement
- Capped at ~30 fps, while original was 60 fps
- Set cell size and movement, does not depend on dt but rather on timer
- 60 fps = too much speed

niguelchaos 03/08/202
this is fine right

r: CreateTexture(D3DPOOL_DEFAULT): OUTOFVIDEOMEMORY
r: CreateTexture(D3DPOOL_DEFAULT): OUTOFVIDEOMEMORY
r: CreateTexture(D3DPOOL_DEFAULT): OUTOFVIDEOMEMORY
r: CreateTexture(D3DPOOL_DEFAULT): OUTOFVIDEOMEMORY

Final Result

Replicated
- Basic Mechanics
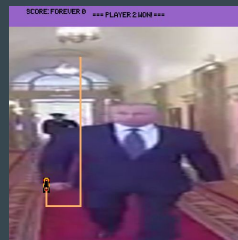 - Bikes
  - Walls
- Sprites
- Screenshotted background

Not Replicated
- Pausing at each turn
- 60 fps
- Smooth Speed changing
- Difficulty Progression
- Score
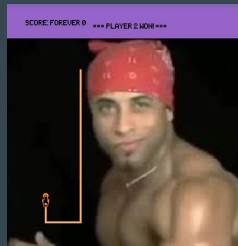
Modified / Features?
- Changeable Backgrounds
- Non-tron like sound effects
  - (Motorcycle, Bottom Gear)
- Detects Draws (both die)?
- Illegible code
- Suboptimal implementations
- High Technical Debt

Trahn \ trawn \ twohn \
Twuwon \ twaahn \ twauehn

Thank you?