

# SUMO CARS

STINKY TOES™

DESIGN DOCUMENT

VERSION 0.3

NOVEMBER 15, 2021

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## VERSION HISTORY

### **Version 0.1 – November 1st, 2021**

- First version of the document. Template based on links noted in the “Links” section.
- Filled out template with any details we have decided on for the game.

### **Version 0.2 – November 8th, 2021**

- Removed unnecessary headings
- Added member names to page
- Added ideas for sound effects

### **Version 0.3 – November 15th, 2021**

- Thinned out the parts which don't apply to us.
- Added more images for other game comparisons and in general throughout the document.

# GAME OVERVIEW

## Game logline

Sumo wrestling, but with cars.

## Gameplay synopsis

The player controls a car with the goal of trying to hit other cars out of the player area and avoiding getting hit out themselves. Power Ups that spawn randomly during stages, that let players affect their own vehicle in drastic ways or affect enemies from a distance. (Speed, extra weight, faster turning). Enemies which have a few different AI methods, and sometimes infight to make it more last man standing. Movement is fluid and the collisions feel satisfying to achieve.

The game loop is a level structure where the easy levels are unlocked by default and as you complete them you unlock higher difficulty levels and maps and possibly challenge modes (debuffs, ect).

## GAME DETAILS

### Description

The game is a top down driving game with the goal to knock the opposing cars or vehicles off the stage, until you are the last one standing. To this end you can ram them off the edge or utilize power ups that spawn in the stage to give you an advantage via affecting the enemy or your own car in special ways.

### Game genre

2D Action Arcade Driving Game

### Is this a single-player or multiplayer game?

Main focus is on single-player with the goal of local multiplayer.

### Where does the game take place? (world)

A void that contains a scattering of platforms, people compete on these platforms against each other with the goal of knocking the competition off. When someone wins they move onto more difficult challenges in their climb to the top.

### What do I control? How many characters? Can I use vehicles?

Control a single character, that being a vehicle such as a car or something that controls similar

### What is the main focus?

Players play short and quick matches against either a CPU, another player, or a combination of the two. They aim to knock everyone else off the playing field to claim victory.

### How long does the game last? Or how long do game matches last?

Each game should last around 1.5 to 3 minutes. This allows players the opportunity to unlock and play new maps.

## Comparison

Solar 2 as its collision physics are incredibly satisfying but it's more of a long form game than our short round based game.



GTA5 Minigame but ours is 2D and more in depth than just 10 cars in a circular or square arena. For example the GTA variant does not contain powerups or AI.



Super Smash Bros but focused entirely on collision mechanics compared to direct percentage based combat.



For example, both of our games' goals are knocking your opponent out of the map.

### **What is unique?**

The more focused aim towards sumo as most other games do something like this as a side, allowing us to refine it. To differentiate from other games that have it as a minigame, we have added both powerups and AI.

### **Why create this game?**

The idea was the most interesting out of all that we thought of and was a good challenge based on what we currently understand about unity.



# AUDIENCE, PLATFORM, AND MARKETING

## Target Audience

People who want to have a fast paced driving game, People who do not have much time to game, People who want to have an easy way to mess around with another person.

## Platform

The driving mechanics are sound enough to make the general gameplay enjoyable.

People want another game to mess around with their friends as most games require work to enable 2 player gameplay.

People want to see how far they can go in survival.

## Top Performers

There is no specific market for this game due to this being more of a minigame with aspects pulled from other games. Similar minigames to this concept have been seen in games such as Mario Party, GTA 5, and Minecraft.

## Feature comparison

GTA 5 has this style of game as a minigame, but that has the limitations of being a minigame within a larger game, and thus suffers from a lack of depth due to the limitations of the specialized game engine. This game features a differently stylized version of the same type of minigame as a more fully fleshed out game.

# FEATURE SET

## **General features**

A variety of maps to choose from once unlocked. Powerups to modify your and opponents vehicles during each round.

## **Multiplayer features**

Local multiplayer will allow two people to play on the same keyboard. One person will be using WASD and Left Shift to control their vehicle while the other player will use the Arrow Keys and Right Shift to control theirs.

## **Gameplay**

Primary gameplay mechanics are the collision mechanics which react based on where you slam into an opposing vehicle. When an enemy is knocked off the map from this collision they are lost to the void. To help with this goal, power ups spawn periodically around the arena that can push or pull enemies. The enemies can also use these power ups though so the player has to be fast about dealing with them.

# THE GAME WORLD

## Overview

Each map is its own individual area or world. They are independent of each other and any design of a map other than the map shape and its obstacles are aesthetical.

## Levels

Because the game does not have a continuous gameworld we have opted for levels instead of locations for the game. As an example for this we can have some levels which have different themes and different terrain types that affect your vehicle and the enemies vehicles. (for example ice vs tile vs glue).

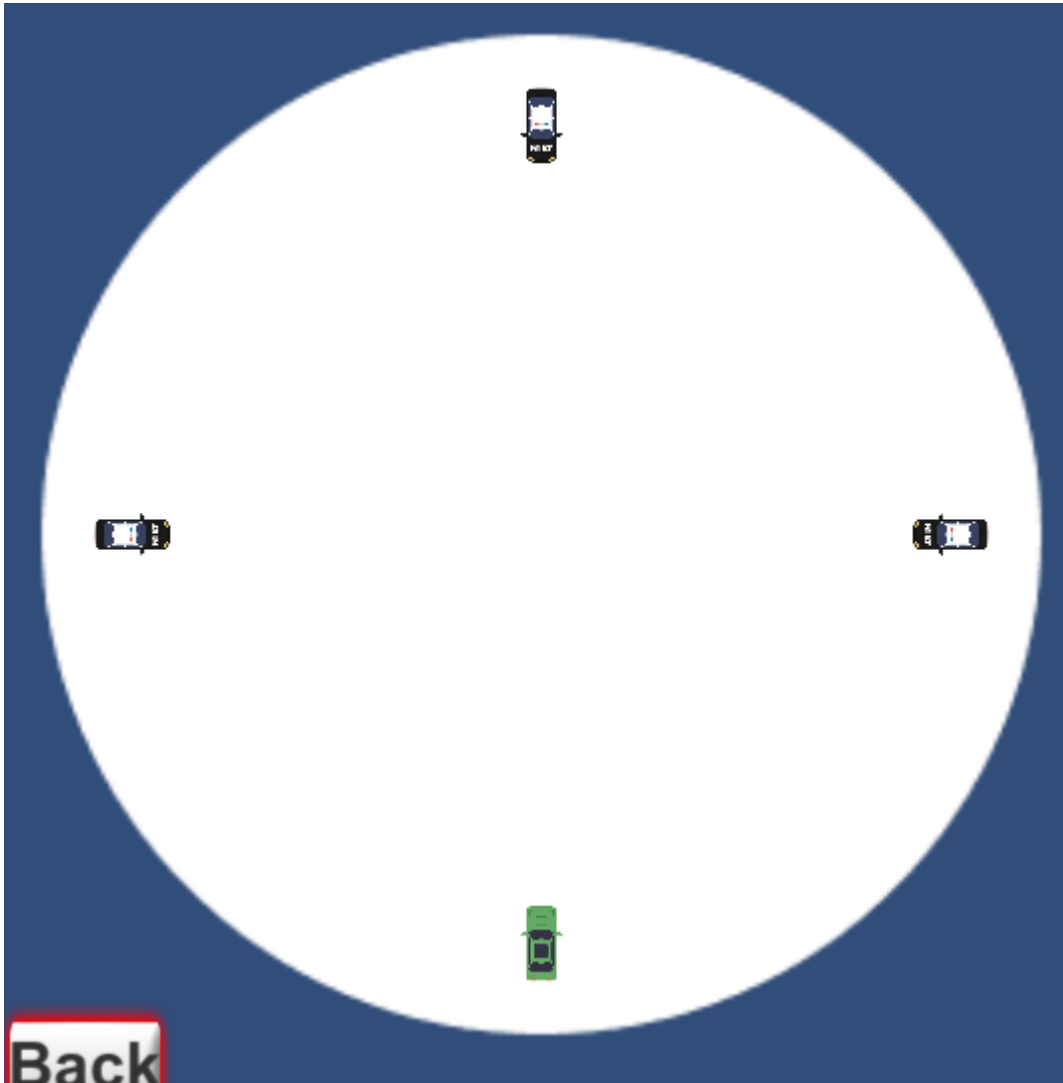
## Travel

After hitting the play button after selecting their map, a top-down view of a platform is shown. The player can use keyboard controls to drive around the platform as long as they do not fall off.

## Scale

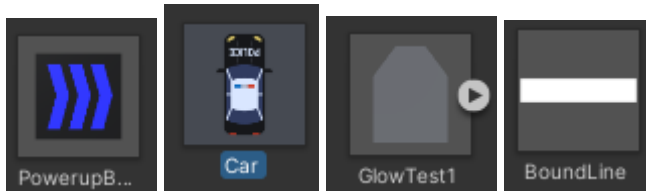
Scale varies from map to map. Sizes of the vehicles would be consistent with other vehicles, but maps can range across many different sizes. To this end the overall screen size will always be set 100, with the map made to fit within it but not always taking up the entire

screen and the cars being approximately 10 units in length.



## Objects

Various “objects” in the game would be the enemies and the collectable boosts that appear randomly in the playing field. For example, powerups, vehicles (player or enemy), and bounds.

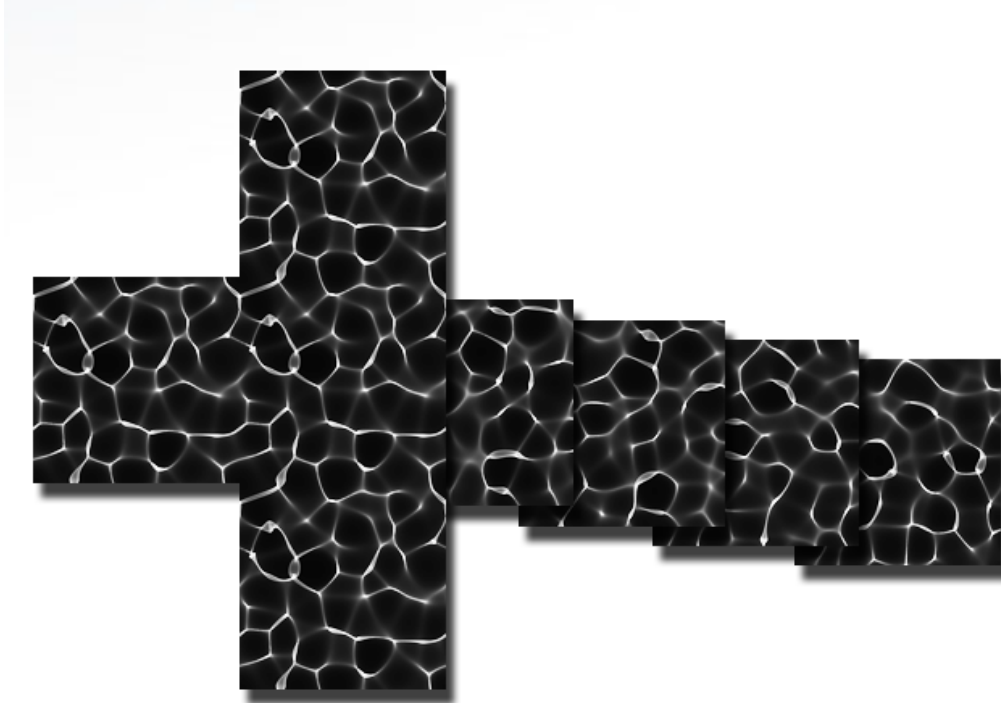


## Time

Time plays a speed-up role in our game. We don't want the game to drag on forever nor do we want it to just last a few seconds. Over time, we will have either a disappearing map, a shrinking worldborder, or randomly spawning shrinking safe zones to keep the game moving along so a player cannot just stay still.

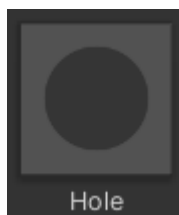
### Knockout Zone

Will usually be a theme appropriate style to fit with the levels theme, such as being water on more natural maps, or laser grid on a more generalist neon theme. Will have caustics as a defining consistent feature though.



### Other elements

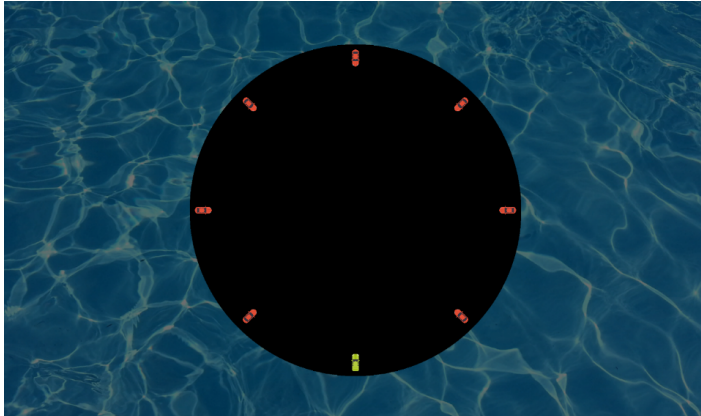
Maps may contain moving obstacles the players may need to avoid or maneuver somehow to their advantage. For example some maps may include holes within the arena that act as small knockout zones or moving walls to both prevent movement and knockouts.



# CAMERA

## Overview

During actual gameplay, there will be a single static camera giving a top-down view of the play area. The camera will not move for the duration of each gameplay session. Only time the player's camera will be obstructed will be during either menus or when transitioning between stages. Below you can see a prototype stage of what the final game will look like.



## GAME CHARACTERS

### Overview

Characters in this game will all be some type of vehicle. The purpose of sumo cars is to have vehicles drive into one another in an attempt to knock all other vehicles out of the playing field.

### Character creation

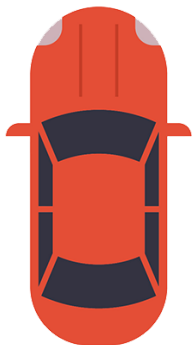
Player is given a default texture/skin to use as their character while they play.



Customization of their character may be implemented if time and resources allow to the extent of swapping their model with other pre provided textures.

### Enemies

Enemies and monsters will have a similar look to a player and will have the same objective of being the last one standing. They will sometimes attack the player and sometimes attack each other.



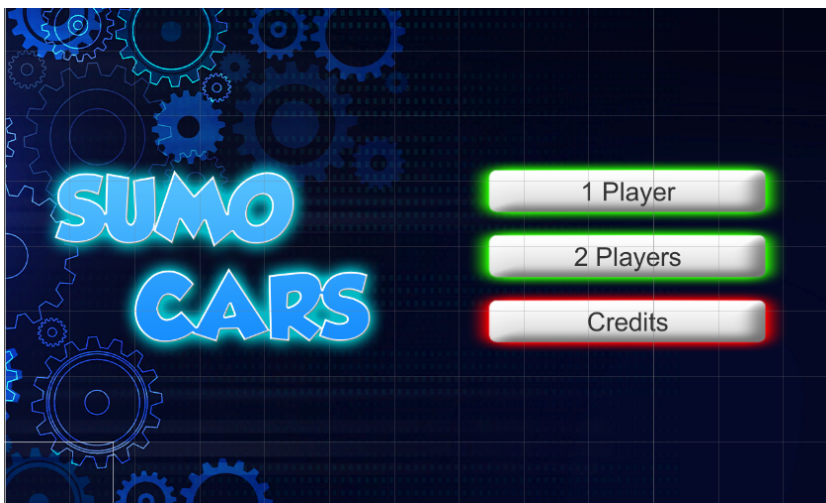
# USER INTERFACE

## Overview

Simplistic with the goal of efficiently moving the player into the game as fast as possible.

## Details

Same theme of the general characters, that being neon sci-fi in a similar style to BTD6, a tower defense game by Ninja Kiwi. Below is a sample image of what the Level/Map Selection screen may look like. Basic information about each map is displayed in one spot. A visual of the map is shown for the player to get a preview of what game mechanics they will encounter. Glowing buttons to click to either play the map or move to the main screen.





## OBJECTS

### Overview

The only planned objects are the players, the enemies, the obstacles, and the consumable boosts.

### Items

Items will come in the form of randomly spawning consumable boosts inside of each map. These will be bright, flashy tokens players can collect by running over them with their

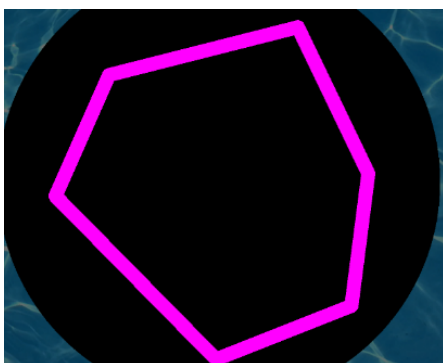


vehicle. A boost may affect speed, time, or maybe vehicle positions relative to the user. A player can activate a boost they have by pressing a trigger on their keyboard controller.



### Obstacles

Obstacles are able to be used to limit the area that the player (and by proxy the enemies) can go. These obstacles can have multiple attributes, namely that they can move, and they can be configured to be instant-death traps.



# MUSIC AND SOUNDS EFFECTS

## Overview

A game is never complete without sound. In this stage, we want to come up with all the possible scenarios in the game where a sound may be and should be played.

## Details

Sound effects and music tracks aren't just there to make the game more appealing. Although that is one of the main goals of sounds, sounds should also provide the player some sort of feedback as well. It should help the player by letting them know what is going on when it comes to gameplay.

The music tracks should be relatively easy to put together since it is more there just to set the mood of the game. The sound effects may be a bit harder to perfect since they have a bigger effect on the experience itself. Sound effects are short, and there are practically infinite to choose from, but narrowing it down to the short sounds that won't be annoying, fits their purpose, and goes along with the game's theme may be more difficult.

The following consists of tracks and sound effects the game will need.

## Music tracks

- Game Startup
  - <https://dova-s.jp/bgm/play15424.html>
- UI Screen
- Pregame countdown track
- In-game tracks
- Post-game tracks

## Sound effects

- Collision between vehicles
- Countdown to start of match
- Car is eliminated
- Match won
- Match lost
- "Hover over" menu item in User Interface
- "Select" menu item in User Interface
- Boost pickup
- Boost usage

## ART

### What kind of style will be used in the game?

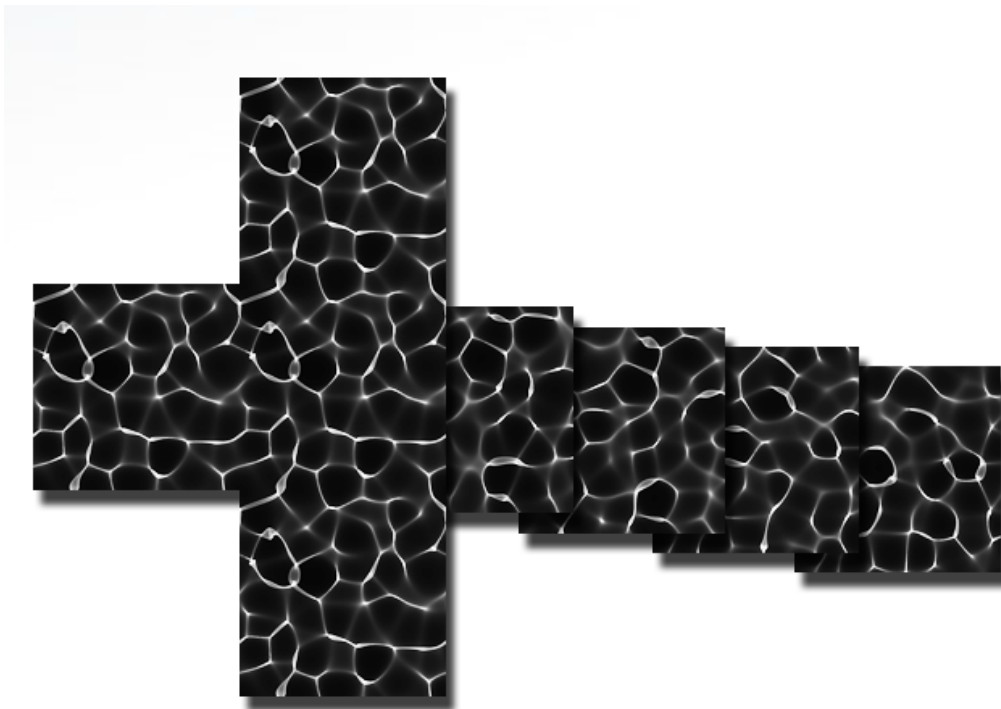
A light sci-fi design to compliment lighting and effects with an emphasis on neon.  
Currently it is being created towards the style of games such as Shellcore Command.



But temporary car models are in place for now as to facilitate efficient testing.

### Scenery models

Backgrounds and platforms for each map. Consistent knockout zone theme of containing caustics.



### Character/Vehicle models

As we head into the prototyping stage, we obtained these vehicles from Adobe's stock image library with their standard license. Any further vehicles implemented will be along this style of top-down view.

Players will have their selection of vehicles while CPU vehicles may be randomly generated. To make it easier to tell which vehicle is the player's, a special neon effect may be added to their vehicle.

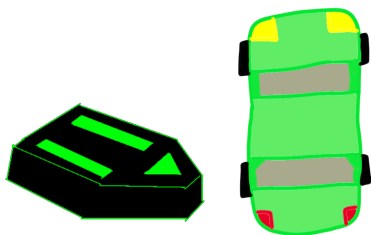


### Particle effects

May appear when vehicles collide with each other and/or when a vehicle is knocked out of the play area or otherwise destroyed. Will also come up when collecting power-ups and when hitting walls and enemies

**Other**

UI art for main menu



# SINGLE-PLAYER GAME

## Overview

Players start off by picking a map to play. There may be only one map available when they play the game for the first time. When a map is selected, it is loaded up and the player can see their own character as well as a number of enemies all on the same platform/playing area. Everyone there has the goal of knocking everyone else off to win the game.

## Details

As a player completes a map, a new map should be unlocked (as long as one is available). They can go to a level selector to choose the new map to play. Maps may increase in difficulty to test the player's skill level. A map can start to have obstacles like holes, slow-traps, or walls.

## Story

You control a vehicle. You like sumo. You want to crash into other cars. Join a map, play some sumo, show you're the best. Beyond a light opening text though, there is no main story for the user to go through, though short blurbs before each level could provide a method of maintaining user engagement.

## Victory conditions

For each map, the win condition is the same. Knock all opponents off the playing field and be the last one left standing.

# MULTIPLAYER GAME

## Overview

Local multiplayer should allow for two players to play on the same keyboard. One with WASD and one with Arrow Keys, and if time provides, the ability to use controllers.

## Max players

2 in the case of dual-controlled keyboard local multiplayer.

## Customization

If time allows for implementation, the game may allow a user to choose any of the unlocked maps when setting up a local multiplayer game. They may also have the ability to choose how many CPU enemies will also spawn at the start.

## Is the world persistent or not

No, as we are utilizing a level structure so everything like enemies, players, items, and stats will clear between them.

## Saving and loading

There is not much to save about multiplayer games except for the overall saving of which maps/skins have been unlocked and available for use, as well as the high-score (lowest clear time) for each stage.

## Scores

Multiplayer games will be one-off events with the same objective as single player: knock all other players (and CPUs) off the playing field.

## Chatting

As being local multiplayer, chatting can occur in person since the two will be in very close proximity to each other.

## SCHEDULE

Deadline	What	Who
Nov. 15, 2021	Map Shapes and Edge Detection	Patrick + Trevor
	Basic Models for Players, Enemies, Platforms, BGs	Connor
	SFX and BGM selection	Andy
	Enemy Physics + Random Enemy Targeting	Trevor + Andy
	Boost Textures and Functionality	Connor + Trevor
	Random Balanced Boost Spawning	Patrick + Connor
	Map selection and In-Game User Interfaces	Andy
Nov. 22, 2021		



## RESOURCES & LINKS

### Links to related resources

For Audio:

<https://dova-s.jp/>

For theme styles.

[https://store.steampowered.com/app/858210/Nova\\_Drift/](https://store.steampowered.com/app/858210/Nova_Drift/)

[https://shellcorecommand2.fandom.com/wiki/ShellCore\\_Command\\_Wiki](https://shellcorecommand2.fandom.com/wiki/ShellCore_Command_Wiki)

<https://store.steampowered.com/app/329130/Reassembly/>