

Game Design Documentation

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Game Mechanics

What is the desired skill or quality this game wishes to cultivate?

- The vehicles and the road itself are wire framed objects. The backgrounds for each of the terrains are modelled objects that are implemented into the game.
- During the starting phase the players are able to randomise their vehicles to whatever they would like to use in the race. The vehicles consist of two side boosters, a main booster, four wheels and a body. The models for the body, main booster and wheels are randomised and each have specific stats. If a player gets something with one good stat but two bad stats, they may wish to generate a different vehicle, but that carries the risk of getting mediocre stats overall.
- The game will also give the player the challenge of developing their skills for not just the harsh twists and turns of the track, but also for handling the vehicles' strengths and weaknesses for each of the terrain changes.
- Two boosters are applied to the back of the vehicles, which will be used for veering the vehicles left and right which can only happen when the vehicles are going forwards. If both boosters are used at the same time then this will give the vehicles an extra boost.
- A middle booster is placed in between the two other boosters, which acts as the main boost for extra speed.
- It will be targeted at mid-teenagers and young adults. Also suitable for beginners and experienced players. The visual style aims to be reminiscent of the 32-bit computer games era, with a neon arcade feel.

What is the goal of the players?

- The main goal is to reach the finish line first and the winner with highest score wins
 - King of the hill style will be used for the scoring mechanism, all of which will involve a flag.
 - Score is determined by how long each player holds the flag, with a score increment per second.
 - The owner of the flag is randomised at the start, giving lesser skilled players a chance to hold the flag early on. Holding the flag increases their score with each passing second unless they lose it to another player.

- Other players who bump into the player with flag once will obtain the flag and their score will go up.
- During the course of the game there will be terrain changes which will not only change the colour or layout of the setting and racetrack; it will also change the physics of the vehicles. For example: when the terrain turns to the bouncy terrain, the vehicle's bounce which makes them more difficult to manoeuvre. The key theme to the terrain changes is to get the players to quickly adapt to the different forms of physics applied to each of the terrains.
- There are two conditions for winning: amassing score by holding the flag, and crossing the finish line first. An accumulative winner is decided after 3 races.

What are the obstacles for the players to overcome?

- The edge of the road: if a player goes off the edge of the road then they will fall and be removed from the game.
- Terrain changes, for each of the terrain changes the physics will change in order to give the player the challenge of being able to adapt to each of the physics changes for each terrain change. The changes in the terrain may also cause other obstacles to occur until the terrain changes.
- Sticky bomb which is acquired via a pickup, with a pass-the-parcel style mechanic. Similarly to the flag, the player who bumps into the player who has the bomb will acquire the bomb instead. The bomb has a limited timer on it which will instantly eliminate one of the players after a certain amount of time has passed. The bomb will then explode, throwing nearby players. Finally, the bomb will respawn somewhere ahead of the players, so the danger is constant.

What are the tools that the players can use to accomplish their goal?

- Boosters are commonly used to help with manoeuvring the vehicles left and right, and to apply extra speed. This is limited by the booster's life bar which runs with each use, but will recharge with a pickup or over time. 'Boosting' is performed like a shunt, where players are extremely fast for a short period of time, as well as momentarily invulnerable.
- Pickups
 - Super boost
 - Terrain change
 - Scale change
 - Power Up Propensity
 - Physics modifier

Physics - Terrains

Stats - Vehicles

Below is a list of the different physics for each of the proposed terrains, and a list of the different physics statistics of each vehicle part.

Terrain Physics

Terrain	Description	Physics	Background Models
City	terrain set in the middle of a city full of buildings with normal driving physics applied	Default Physics	Tall Buildings
Sun	Surface of the Sun. Red colour scheme. Firey environment.	Increased boost levels	Surface of the Sun
Bouncy Castle	terrain looks like the original, but a bouncing effects has been applied, so whenever the vehicle hits the ground they bounce back up	Increased Elasticity for extra bounciness	N/A

Vehicle Stats

Vehicle part names	Description	Stats
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Body

CGD: Game Design Document
Group: Gecko Faction Games
Retro Rocket Rampage

Panzer	This body's shape is like a tank	140
Wing	Shape of a spaceship	80
Drone	Body in the form of a space racer which is similar to a spaceship but not entirely	100
Pad	The pad is literally a game controller	90
Jet	Body is in the shape of a typical airliner	120
Crane	This body is technically an bird, which is made from paper (origami)	70
Boat	Shape of the body is like a traditional boat	110
Hound	From a high perspective the Hound body looks like either a rocket or a tower on its side	130

Booster

Prism	This booster basically looks like an ordinary prism and the particles come out through the rear triangle of the prism	100
Bolt	Bolt has the appearance of a regular screwing bolt	80
Blood	The blood booster appears like an ordinary rocket, the only difference is that the back is attached to the back of the vehicle and the particles come out of a hole in the front	140
Warp	This booster is comprised of a variety of shapes that make the booster look bigger than the others	120
Blast	The blast booster looks like the bolt booster, the only differences are; the end of the booster is much flatter and, there are two fins attached to the back of the booster	110

Wheels

CTR	CTR are smaller wheels, but have the thickness as the LTE wheels	100
LTE	LTE wheels are a pair of slightly thicker wheels	60
BLT	BLT has the same thickness as SPK, but also has orb-like shape	90
SPK	These wheels have spikes in the centre and are much thicker than the others	80
SSC	These wheels are much thinner, and have spiked edges around them	70

Sound and Music

- The settings for the sounds are fixed and cannot be altered in any way. The designated volumes for the sounds are:
 - MasterVolume = 0.5
 - FXVolume = 0.75
 - MusicVolume = 0.25
- The music that is being used in the game is one supplied by Andy King, one of the lecturers for this assignment.
- Sound effects included in the game are: car noises, laser blasts, pickup collect, explosion.