Hover Car Racer

Team 14 Game Design Document

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Executive summary

In Hover Car Racer the player is a hover car pilot, racing their beautiful futuristic vehicle at breakneck speeds across a gorgeous landscape. The game takes place in a grounded future where hover car racing is the next big thing. The player plays in third or first person and the races are all non-linear across an open world – players start and finish in the centre of this vast landscape and must collect points from procedurally placed checkpoints to activate the finish zone. There is a heavy emphasis on strategy and players will need to plan the best course for their race as they fly across the terrain collecting points by passing through checkpoints kilometres apart. They could follow the pack or go out on their own. This is the player's race – the player is the Hover Car Racer.

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1 Game Overview

1.1 Basic Concept

Hover Car Racer is a multiplayer adventure racer where players race hover cars; whipping the tail around, skimming low over the ground at rapid speed in third person. The race takes place in a non-linear level across an open landscape many kilometres across. Players need to strategize and plan their race accordingly.

The players start and finish in the centre of the landscape. For a player to be able to finish the race they must drive through checkpoints across the level (in whatever order they see fit) to collect 100 points. Each checkpoint is worth a number of points – the further away from the start/finish the more points they are worth.

1.2 Role of the Player

The player takes on the role of a Hovercar pilot – they race their hovercar across an open landscape wherever they choose and attempt to beat other racers (also human players) to complete the race objectives. They plan their race, navigate, pilot, and if they choose go head to head with opponents.

1.3 Game Objectives

The primary objective of a race is to finish before the other players. This is done by activating and crossing the finish zone first. To activate the finish zone for themselves, the player must gain 100 points by flying through checkpoints scattered across the landscape.

1.4 Feature Set

Hovercar Racer offers a uniquely deep and detailed hovercar piloting system:

- Typical forward/reverse left/right
- Coupled with a deeper modifier based system for more accurate and "cool" control over manoeuvres using the mouse or analog stick to lean into turns, pivot on your front of back end for quick and nimble reversals as well as managing flight trajectory if you launch over a jump in the terrain

Multiplayer non-linear competitive gameplay

- Players all determine their own route and strategy for each race – we give them the tools to do this
    - Players can plot their course on a map before the race to be viewed in a HUD gps during the race. All players can see their opponent's courses too opening up potential for meta-game strategies – tricking opponents to follow your "superior" course when you have a better one up your sleeve.
- Direct player-player interaction will be encouraged by random generation of highly lucrative objects central to player's location – leading players to come head to head frequently
- Dynamically generated checkpoint locations – no two races are the same so each race the player is require to think on a new strategy and is unable to simply do the same thing that they did last time.
    - Dynamic events and goals designed to create conflict, present incentive to deviate from their strategy, and encourage interaction between players.

Immersive open world and experience

- Believable world design with a dynamic and alive ecosystem
- Dynamic weather effects
- Sound and universe design based in reality

1.5 Genre

Hovercar racer fits into the racing genre but the non-linearity offered by the open world multiplayer gameplay and the deeper vehicle control system differentiate it from other games in this genre.

1.6 Target Audience

The primary audience is early teens to whom futuristic style racers appeal strongly.

However our wider target audience is Anyone with an interest in racing games – the deeper level of control in our modifier system will appeal to the more experience/core gamer: It raises the skill/possibility ceiling for those interested but it does so without alienating the more casual audience who can still successfully play the game using just core racer controls (forward back left right).

1.7 Look and Feel

We are aiming for a photo-real style for all of our assets, audio and player controllers. We want this to feel like a real world race and like something that could become a reality in the not so distant future.

Vehicles will be sleek, flying descendants of Formula 1 and Le-Mans class vehicles.

In contrast to these futuristic elements players will be racing across large organic landscapes such as African savannahs, the Australian outback and Hilly Scottish country side.

1.8 Background Story

In the year 2040 a breakthrough was made by the visionary entrepreneur Ålon Must and in a revolutionary collaboration between his two corporations SpaceY and NIKOLA, the hovering vehicle was born. From the early 2000's scientists have been experimenting with hyper conductors – combinations of elements that when manipulated into a hyperconductive state quite literally lock in their location relative to the earth; their atoms slow and cease to allow them to move without being affected by external forces. Until 2040 this was only possible while such elements were far below the temperatures of even liquid nitrogen so there was no practical application. Elon's co-op developed a hyperconductive element that was free from the limitations of temperature, and made the technology openly available for all, competitors and customers alike.

In 2055 hovercar racing is the latest and greatest sport taking the world by storm – it's riveting to watch and even more so to take part in.

1.9 Type of play

The gameplay in Hover Car Racer is highly competitive and strategic, non-linear dynamic racing.

2 Gameplay and mechanics

2.1 Gameplay

Objectives

The primary objective in Hovercar racer is to win the current race. All other objectives stem from this.

Secondary objectives:

→ Score 100 points to activate the finish zone for yourself

→ Get the 100 points as fast as you can by passing through checkpoints

→ Reach the activated finish zone before the other players

Core Gameplay

Challenges

- Win the race by being the fastest racer and formulating the best strategy
    - Select the best path to take through all of the checkpoints
        - This can be done at the start of the race in the map/planning screen – the player can draw out their route for gps viewing during the race or on the fly
        - Player is rewarded for taking more experimental/devious routes – the further from the start/finish zone a checkpoint is, the more points it is worth. The decisions the player will have to make regarding path will always be a risk versus reward scenario.
    - Make the most of the full range of the control system
        - Using modifiers effectively will give the player a significant edge over opponents who fail to do so.
- Avoid obstacles in the landscape whilst still being a quick and versatile racer
    - Mastery of vehicle controls and piloting skills
        - Player needs to make good use of the deeper layers of the control system to manoeuvre through the environment
        - Avoid taking damage to avoid damaging your vehicle and being penalised for your failure by temporarily having to drive a slower/less responsive vehicle (depending on the type of damage)
- Social challenge of trying to get other players to take a worse route than you/not giving away your superior route in the planning phase
        - This is more of a meta-game goal that some players may create for themselves. It will never be suggested specifically but we will encourage it with our features (such as the map in the planning phase where all opponents' routes are visible if they choose to draw them). Having player interaction outside of the game/on top of the core mechanics will be good for the competitive nature of the game.

Game Flow

The flow of Hover Car Racer, being a non-linear experience, will differ from player to player. The core structure will remain the same for all at a very high level – Plan your race, start the race, get the points required and return to the start/finish zone as fast as possible.

In the planning stage a player may choose to plot the path they wish to take for use with the in-race GPS, or they may try and confidently plot a course to mislead other into taking a worse route than they intend to, then navigate on the fly during gameplay.

During the race itself players may opt to stay close to the finish zone and hit many checkpoints quickly for less points per checkpoint or they may wish to roam the outskirts and only need to hit a few checkpoints and play for speed in between so they can make the long journey back. A player may wish to stick close to opponents and play dirty - ramming them and forcing them to crash into obstacles while safely sticking to the same route as them so as to ensure keeping up with them step for step. It would also be possible for a player to avoid all other players entirely for the course of the race if they so desired.

Regardless of how an individual chooses to race we believe that player vs player interaction is a core element to the fun of our game so we will design to encourage converging routes via strategic level design and checkpoint placement. In addition to this dynamically spawned high yield but highly difficult to pass checkpoints will appear mid race that should act as "player magnets" – drawing players away from their plans and towards each other in the middle phase of the race.

Type of play

Competitive multiplayer racer with emphasis on strategic navigation and non-linear play.

2.2 Elements and Mechanics

Physically Simulated Vehicles.

All player vehicles will be physical simulations of hover cars – upward forces applied to make them hover, torque forces applied for turning, forces applied for acceleration and breaking. They will crash into or skim off static objects in the world and other racer's vehicles. If the vehicle has enough downward speed it will be possible for the vehicle to "bottom out" and bounce off the terrain.

Vehicle (player) Controller

Basic Controls

The player's vehicle will be controlled using four directional keys or an analogue stick for forward, back, turn left, turn right.

Modifier controls

In addition to the basic directional controls the controller has "modifier" controls bound to either the mouse or another analogue stick. This "modifier" when moved in a direction will visually tilt the vehicle and affect how the vehicle handles. The player can move the right analog stick or the mouse depending on input method and lean the vehicle into turns for sharper cornering, forward to speed up but with less turning speed, back to pivot around on the rear of the vehicle for quick u-turns.

These modifiers are compounding so the player could combine the left and back modifiers for a very snappy U-turn or combine front and right to get a speed boost whilst retaining some decent steering control over the vehicle.

Damage system

The player vehicle will take damage when crashing into any static object. The current state of the vehicle is reflected in the value Vehicle Integrity. If the vehicle crashes into an object while moving at speed it takes damage proportionate to the speed it was travelling at during the collision, and the force of the collision calculated by a physical deceleration (less damage for side swiping an object than a head on collision).

In the event of a collision the vehicle loses some integrity (health).

Vehicle integrity constantly regenerates at a rate of 5 units per second until at its maximum value.

If vehicle integrity drops below half, the vehicle's Top Speed and Acceleration Rate values are limited to 75% their normal values until it is restored back above half.

Vehicle integrity will be show to the player by modifying the vehicle's visual representation in the game world to look damaged – textures, deformation, particles getting more or less exaggerated as the integrity changes.

Game Mode

There is just the one, open level race game mode in Hover Car racer. Players plan their race from a map screen in the planning phase to view later on the in-game gps. They start in the centre, go out and collect 100 points then race back to the finish zone.

Planning Phase Map

Shows players a map of the level with locations of the start/finish zone, all checkpoints, some topology for a limited time before race. Players can plot their course between checkpoints by clicking on them in order. Players can reset their course at any time.

Start/finish zone

All players start in a circular zone with a 10m radius in the centre of the landscape, facing the direction they have chosen in the mapping phase. This Start Zone is also the finish zone. Once a player enters the trigger volume that encompasses this zone they have completed the race. This trigger only activates for each player once their score value is greater than 100.

Checkpoints

Checkpoints consist of physical geometry – an archway with a 4 meter width. Each checkpoint can be assigned a value by a designer or at runtime specifying how many points it gives a player when they pass through it. A trigger volume spans the width of the archway and on a collision will give points to any player that passes through it but only once to each player (a player cannot just pass through the same checkpoint multiple times for easy points). Checkpoints will be lit green by default and will turn red once they have been used by the player (checkpoint state is not network synced).

Relationships/Internal Economy

Each player vehicle has "Integrity" which regenerates constantly at 5 units per second until at maximum. Integrity can be lost during collisions. Damage taken is calculated with the following method;

> Damage amount = (Speed at time of collision * (base damage multiplier of) 0.2 (or if a significant deceleration occurred) 0.5)

Player vehicles can collide with each other (damage taken from this as with all collisions) and affect each other physically.

Each player needs to acquire 100 points – they start with zero and collect them from checkpoints.

Each checkpoint in the race can dispense its allotted number of points once to each player in the race.

3 Story Setting and Characters

3.1 Story and Narrative

The narrative of Hover Car racer will be purely emergent and driven by the player's choice in how they race and exist within the world. The game story will be entirely emergent – it will be the players' own experiences in the game.

3.2 Characters

The players themselves are the characters – they are the pilot, piloting the hovercraft.

4 Levels

As our game is non-linear and somewhat dynamically generated each level is unpredictably different at finer detail levels. As a whole however each level follows the same gameplay path:

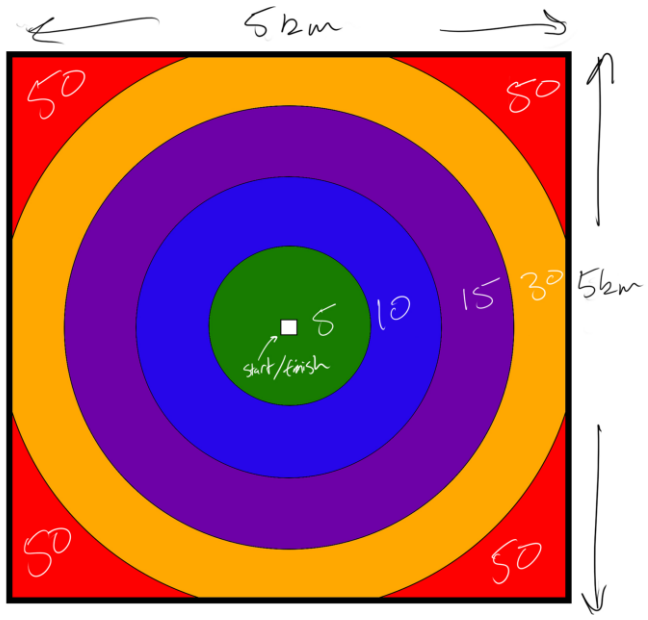
Planning phase with map->race to get enough points->get to the finish zone first.

Goals and objectives

Due to the game's non-linear, procedurally generated multiplayer gameplay as designers we only set quite high level goals for the player, leaving the player free to create their own race.

- Be a better racer than your opponents and win the hover car race
    - Get enough points to activate the finish as quickly as you can by passing under checkpoints
        - Come up with the best strategy/path for your racing style
        - Implement this strategy better than other players implement theirs
    - Then reach the finish zone before the other players

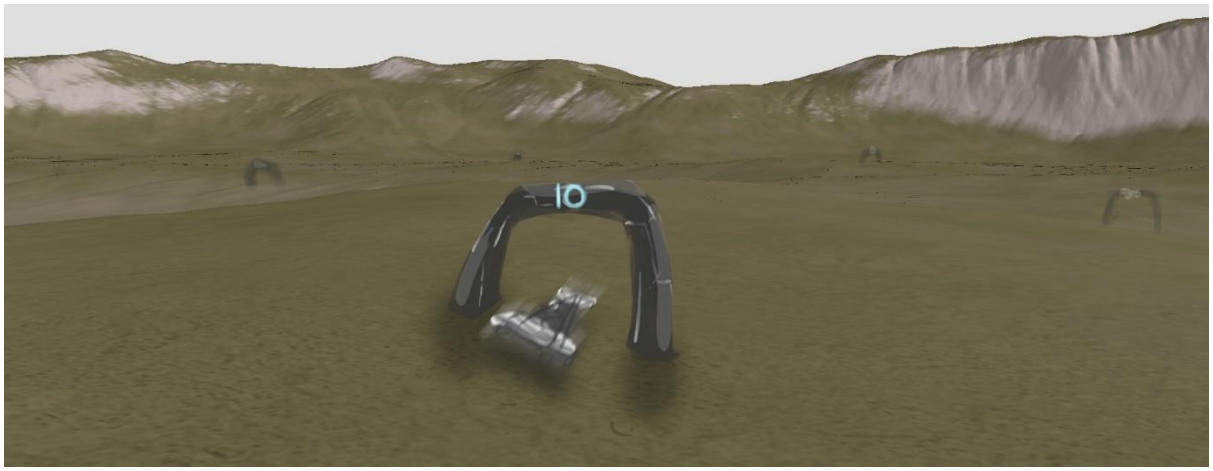
All checkpoints will fall into specific scoring regions – low, medium, high, very high, and extreme yield. As shown in the diagram below checkpoints further away from the start/finish will give a greater reward.



1 Point zone radius map

This non-linearity means that the challenges of each race will likely be different for each player. Players might opt for a technical route between low-yield checkpoints focusing their race of tight, technical racing proficiency, staying safely close to the finish zone. Other might prefer to push their vehicles to their limits and only have to hit a couple of high yield checkpoints relying on their ability to pick a good path keep a good top speed.

Below is a mock-up of how the checkpoints could look in the level – their value displayed at the top of the archway.



2 Hovercar passing through a checkpoint

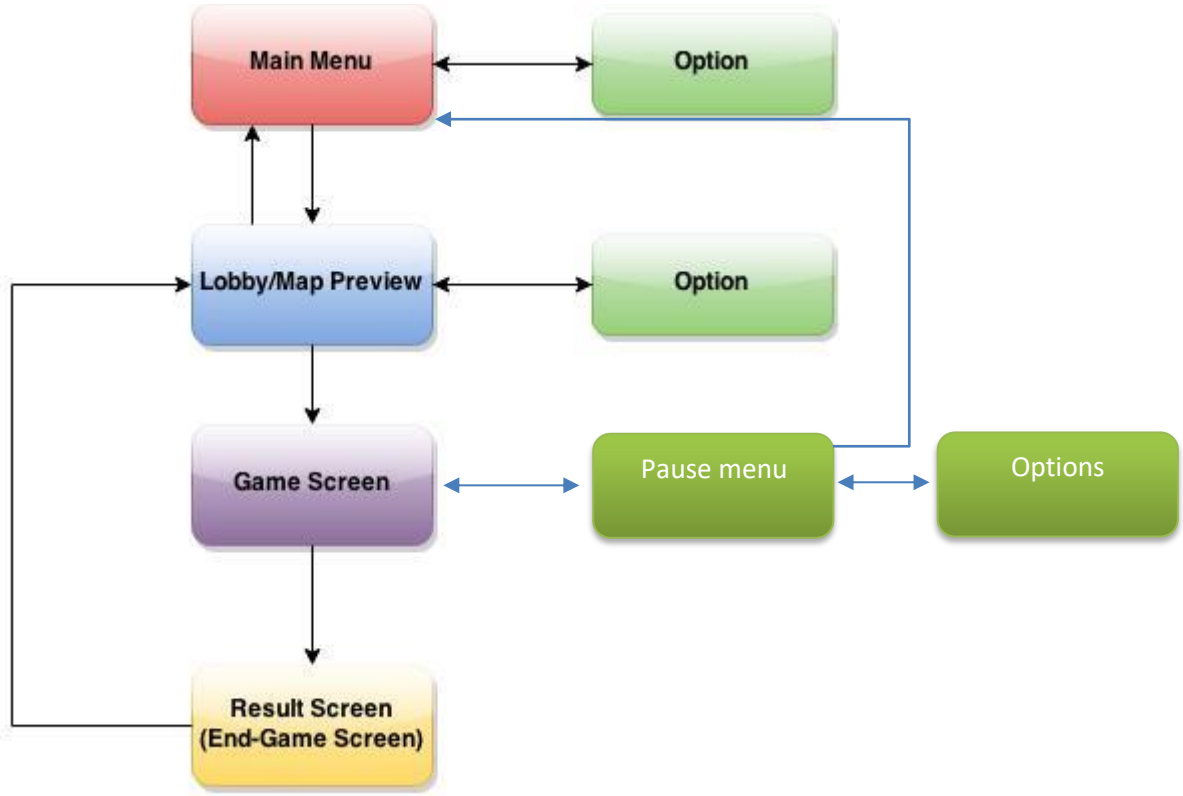
Training

The players will learn to play the game through a quick tutorial. At the start of the first game, a video tutorial will outline what the players have to do to win and how to fly their hover cars. The next few games after that will display tooltips throughout the gameplay to remind players on how to use specific controls, features, etc.

5 Interface

5.1 screen flow

Screen Flow Chart



Hover car racer follows a basic screen flow that is typical in many games. There are 5 screens – Main Menu, Lobby + map preview, Game Screen, Result Screen and Options. Screen accessibility from any point in the game is represented by the arrows.

Screen Descriptions

Screen Name	Purpose of Screen
Main Menu	• Has 3 main buttons – Play, Options and Quit Game. "Play" will indicate the player is ready to join the lobby/start the game. "Options" will assist players adjust settings and controls to the player's liking. "Quit Game" will close the game • Will be the screen shown when the game is first opened.

Lobby/Map Preview	• This screen will show the players connected to the server (the opposing players) • It will also show a map allowing players to plan their routes for the upcoming race. • Players can quit the Lobby and re-join the Main Menu or after a certain amount of time or “X” players joined – the game will commence • Works as a pre-game screen
Game Screen	• Where the game will actually take place • Due to the multiplayer aspect, it is impossible to pause the game.
Result Screen	• Displays the Winner as well as the ranking of other racers • Also displays statistics – time won, most points collected etc. • A “Continue” button will return players to a new Lobby
Options	• Allows the players to adjust options to allow players a more comfortable gameplay experience – i.e controls, camera angles, sound etc.

5.2 functional requirements

Visual System overview

The world will be realistically modelled, textured, shaded and lit by a directional light source (sun). Player will view their vehicle in third or first person

Menus and screens

The Main Menu

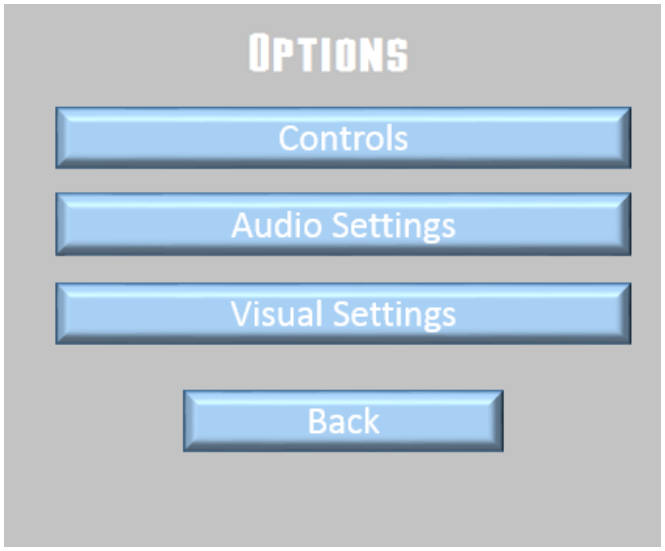
Opening Screen of the Game

The Main Menu Screen is fairly basic with 3 buttons. It is shown when the game is first opened and is used to access options, initiate the game and quit the game.

Button Name	User Action	Desired Result
Play	Click on button	Moved to "Lobby/Map Preview" Screen to begin Pre-game preparation
Options	Click on button	Moved to "Option" Screen to adjust and play around with settings to their liking
Exit	Click on button	Exits or quits the game/application

The Options Screen

Accessed through the various Options button

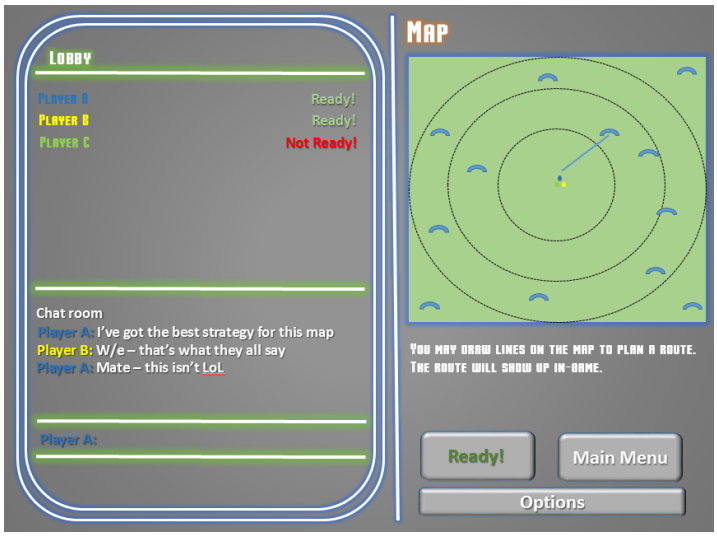


The Options Screen is used to change the game settings to fit the player's personal preferences. The Options page is accessed through the various Options buttons found in both Lobby/Map Preview and the Main Menu.

Button Name	User Action	Desired Result
Controls	Click on button	Allows Players to adjust the controls used playing the game
Audio Settings	Click on button	Allows Players to adjust Audio Settings – Background Music, Game Music, Special Effects Sound etc.
Visual Settings	Click on button	Allows Players to adjust the graphic quality, etc. which will affect the performance of the game
Back	Click on button	Returns back to the Main Menu or Options.

The Lobby/Map Preview Screen

Accessed from the "Play" button



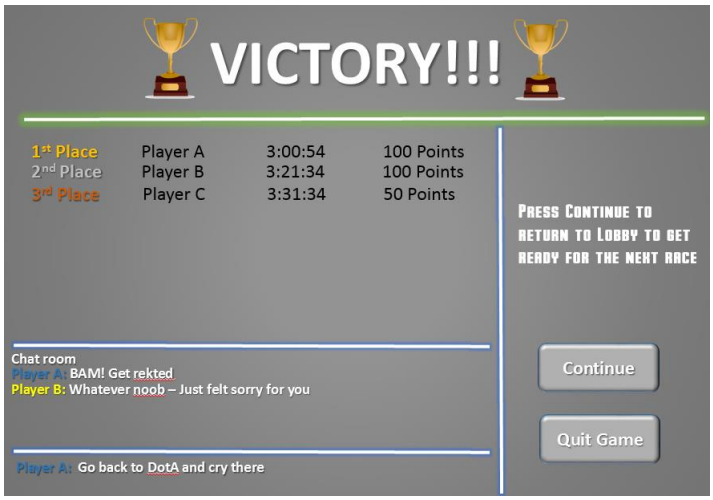
The Lobby/Map Preview Screen is used to show the number of players/players currently registered in the next game. There is a chat room to allow mind-games and/or general chatter. The game will begin when all players are "Ready" or Player A (The Host) Presses "Play" – replaces the Ready Button when all Players in Lobby are ready.

Button Name/Feature Name	User Action	Desired Result
Lobby	None	Lists the Players currently in the Lobby as well as their current Status (Ready or not)
Chat room	Users can type messages to each other to communicate	Players can communicate with each other allowing a more enjoyable gameplay experience including mind games and/or general chatter
Map	Users can view the map including the randomized "Checkpoints". Players can click and draw their route on the map which will appear in game similar to a GPS	Players can plan their routes beforehand so that they won't be completely lost. Players may have to go different from their planned routes due to the other players routes which may conflict and cause problems. The map also provides players the general idea of where the "Checkpoints" are.
Ready!	Click on Button when Ready	When a player is ready to begin the level, the "Ready" Button can be used to change his/her state to "Ready". While "Ready", the button will be changed to "Wait" or

		"Begin" depending on whether the player is the Host. This will minimalize the chance of players being not ready when the game begins
Main Menu	Click on Button	Exits the Lobby (Removes Player's Name from Lobby) and returns to the Main Menu
Options	Click on Button	Brings you to the Options page to adjust the game's settings to the player's preference.

The Victory Screen

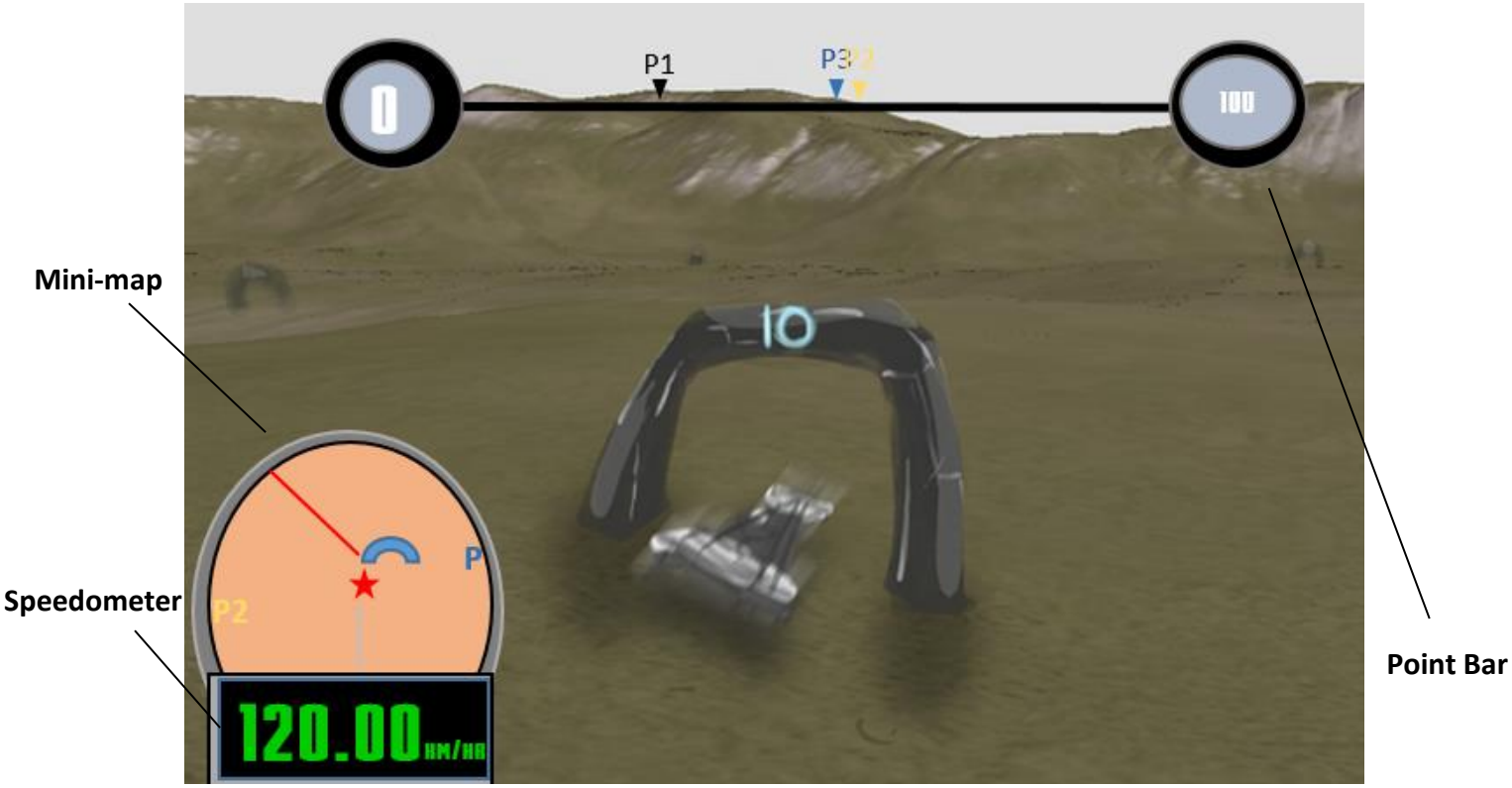
Accessed after the Game is over.



Shown after the game is finished, it displays the player list, the time required for completion as well as the points obtained. It has a chat room that allows players to laugh/joke and taunt each other at the end of the game.

Name of Button/Feature	**User Action**	**Desired Result**
Player List with Details	None List including basic details for the past race including things like points obtained and time required to finish	Allows players to view details of their previous match and compares it to previous games or to see how "badly" a player lost and/or won
Chat room	Users can type messages to each other and communicate	Players can communicate with each other allowing a more enjoyable gameplay experience including taunting/joking and discussing post-game results
Continue	Clicks a button to move back to Lobby for the next Race	Allows Players to return to the Lobby to begin the next race
Quit Game	Clicks a button to exit the game	Users can exit the game using this button

The Game Screen



The game screen (how the game looks once you start playing) – It's a fairly simple layout that is similar to most racing games.

Name of Button/Feature	User Action	Desired Result
Hover car	User can control the Hover car by using the directional keys. Users can use the mouse for more detailed/precise controlling of the vehicle	The Hover car moves and is able to move around the map.
Check Point	Users attempt to drive through the check-points	Passing through the immobile Checkpoints will grant the user a certain amount of points.
"Point Bar"	As User obtains/gains more points – the point bar will be updated and moves the player closer to the 100 point mark.	It will display the player's position by clearly displaying the points that each player is on. As a result – players can clearly see their position as well as the closest player to winning.
"Mini-map"	As the player moves around the map, it will show a small portion of the map around the player.	A mini-map which will display a small portion of the map around the player. The previously planned GPS route that was created during the Lobby is tracked – the light

		blue line indicates the path already travelled and the red path indicates the path has not been travelled. The Curved Arch shows the Checkpoints. Other Players are indicated by basic indicators like “P1” or “P3”
Speedometer	As the player speeds up the car – the Speedometer increases	The Speedometer is present to show the speed that the player is currently traversing
“Flora” and “Fauna”	None	Depending on the map, various terrain “obstacles” such like animals or rock structures may appear which may both hinder and assist the player.

Control System

The mouse is used to navigate the menus, or up and down on the d-pad/analog stick/arrow keys on a controller. Esc/B will take you to the previous menu. Enter/A will take you to the currently selected menu.

Basic vehicle controls

Control Direction (bindable keys or L_analog stick)	***Effect***
Forward	Accelerate
Backward	Brake
Left/right	Turn left/right

Vehicle Modifier controls

Modifier direction (bindable to keys, mouse or R_analog stick	***Effect***
Left/right	Somewhat increases turning speed. Rolls the vehicle in direction of input.
Back	Lowers speed, Lowers top speed, Lowers Acceleration speed, and Greatly increases turning speed. Increases vertical thrust on front section, lifting front of vehicle
Forward	Increases speed, lowers turning speed. Tilts vehicle forward a bit.

6 Art

The art style will be very close to realism as possible and will further enhance the immersion for the player. The animation of the game will also help to enhance the player's experience of the game. For example, interacting with different objects in the game environment will make the object react to the player, for example, crossing through a checkpoint will make it light up to indicate to the player that they have accumulated the points from that particular checkpoint.

6.1 Game world

The main arena of the game will include different types of terrains. To try and have the game on a realistic look, the style of the game will be as realistic as possible. Using very natural colours, such as greens and browns, will give a sense of realism to the environment.

In the middle of each map will be the starting and ending point. Players start out in the starting point and navigate out into the arena. Found throughout the map will be different checkpoints. These checkpoints are more saturated in colour to highlight their importance in the game. Once players complete the win condition required of them (accumulate 100 points), they are to navigate to the starting point, which is now, also the end point to win the game.

6.2 Art and Animation

The main artworks required for the game are the hover car models as well as the animation required for them. More information on the specifics of each aspect in the game will be included below.

	Art requirements	Animation requirements
Terrain	Grassy terrain textures Checkpoint textures	
Special effects	Smoke Dust Water	Special effects for vehicles moving over certain terrains (Dust kickback, moving grass where hover car pass over)
GUI elements	Action buttons (start game, end game, quit, etc.)	
Hover cars	Hover car 3D models Hover car textures	Moving animations (turning, stopping, starting, passing checkpoints)

7 Sound and Music

7.1 Sound Effects

The primary sounds designed for our game will be those of the Hovercars themselves. These will be created by modifying recordings of existing vehicles – cars and motorbikes etc. This will keep our sounds grounded in reality and believable.

Sounds required:

- Vehicle sounds
- Collisions with terrain
- Collisions with other vehicles

- Collisions with objects
- Starting/finish sounds

7.2 Music

Music in the game will be future-synth and electronic with a high bpm – most similar to the likes of hotline Miami. The artist M|O|O|N|S is a significant inspiration. There will be a large pool of tracks to be selected at the start of each race by the game.

8 Market Analysis

Target Market

Casual through to hard-core Gamers who like racing games who play on PC across all demographics.

Top Performers

Mario Kart on the Nintendo Wii has to date sold (physical and digital downloads) the highest number of copies of any other racing game ever – with 35.53 million copies sold as of the end financial year 2014 (Nintendo Co., Ltd., 2014). Its accessibility and yet still quite high skill ceiling are likely key to this success, making it popular across a large number of demographics.

Feature Comparison

Similarly to our game Mario kart is based on the core racing constructs of accelerate, brake, turn with extra layers of variations added above that.

Where Nintendo add variation to the racing format with random pickups of weapons/items that the player can use to change the state of the game our design is at its core different from the typical racing format due to the non-linear nature of the race.

Nintendo also have some modifiers added to the base acceleration and steering controls in that you can power slide the kart using a combination of inputs. Our game also has modifier controls on top of the racer core however we take these further and make them integral but optional to the entire racing experience as opposed to just some sections where power sliding is effective in Mario kart.

A major difference between our two games will be graphical and world style. We're targeting a realistic and believable world where Nintendo has created a cartoony stylised 'fun' creation. This definitely gets the younger demographics (children) drawn into Nintendo's game. This is not a demographic where we would be particularly competitive.

9 Hardware and Software Requirements

Target hardware

Mid to high end pc's with at least 1gb of vram and a modern processor that is at least dual core with a network connection.

OS: Windows 7 and higher
HDD: 2 GB space

DirectX 11
Input: Mouse and Keyboard of Xbox controller for windows

Development hardware and software

We will be using Maya and Mudbox for 3D content creation on modern workstations with quad core processors and 8gb memory.

FL studio will be used for audio design

Game engine

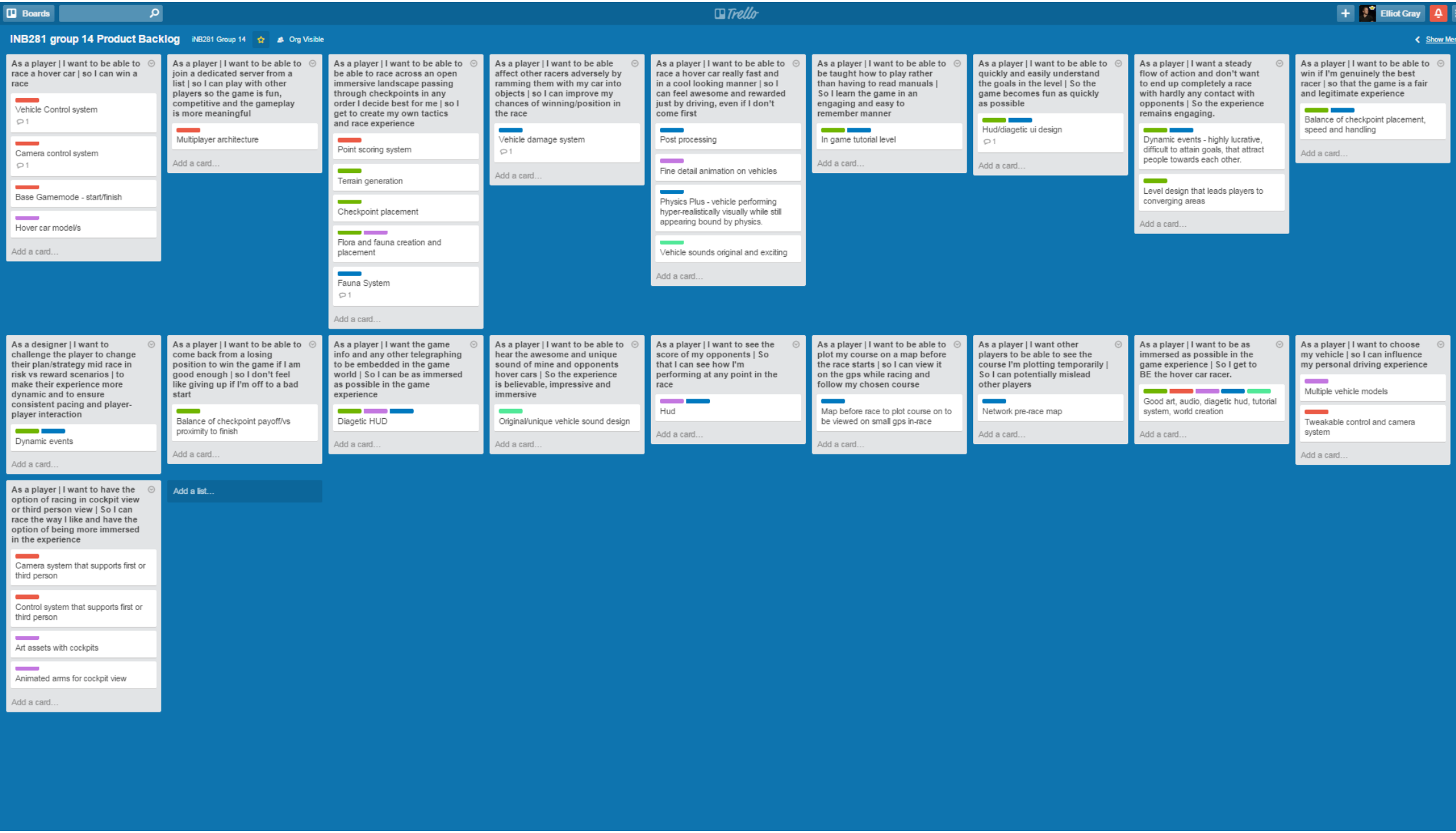
We will be using Unity 5 as it supports our need for a large and realistically rendered, non-linear level with support for large terrains and physical based rendering.

Scripting Language

We will be using C# for scripting as that is what our Programmers are most experienced with

10 Product Backlog

Inserted on the next page is our product backlog with the most important items first. We have used trello cards to break each item into specific development tasks.


Boards
Trello
Elliot Gray
INB281 group 14 Product Backlog
iNB281 Group 14
Org Visible
Show Me
As a player | I want to be able to race a hover car | so I can win a race
Vehicle Control system
Camera control system
Base Gamemode - start/finish
Hover car model/s
Add a card...
As a player | I want to be able to join a dedicated server from a list | so I can play with other players so the game is fun, competitive and the gameplay is more meaningful
Multiplayer architecture
Add a card...
As a player | I want to be able to be able to race across an open immersive landscape passing through checkpoints in any order I decide best for me | so I get to create my own tactics and race experience
Point scoring system
Terrain generation
Checkpoint placement
Flora and fauna creation and placement
Fauna System
Add a card...
As a player | I want to be able affect other racers adversely by ramming them with my car into objects | so I can improve my chances of winning/position in the race
Vehicle damage system
Add a card...
As a player | I want to be able to race a hover car really fast and in a cool looking manner | so I can feel awesome and rewarded just by driving, even if I don't come first
Post processing
Fine detail animation on vehicles
Physics Plus - vehicle performing hyper-realistically visually while still appearing bound by physics.
Vehicle sounds original and exciting
Add a card...
As a player | I want to be able to be taught how to play rather than having to read manuals | So I learn the game in an engaging and easy to remember manner
In game tutorial level
Add a card...
As a player | I want to be able to quickly and easily understand the goals in the level | So the game becomes fun as quickly as possible
Hud/diagetic ui design
Add a card...
As a player | I want a steady flow of action and don't want to end up completely a race with hardly any contact with opponents | So the experience remains engaging.
Dynamic events - highly lucrative, difficult to attain goals, that attract people towards each other.
Level design that leads players to converging areas
Add a card...
As a player | I want to be able to win if I'm genuinely the best racer | so that the game is a fair and legitimate experience
Balance of checkpoint placement, speed and handling
Add a card...
As a designer | I want to challenge the player to change their plan/strategy mid race in risk vs reward scenarios | to make their experience more dynamic and to ensure consistent pacing and player-player interaction
Dynamic events
Add a card...
As a player | I want to be able to come back from a losing position to win the game if I am good enough | so I don't feel like giving up if I'm off to a bad start
Balance of checkpoint payoff/vs proximity to finish
Add a card...
As a player | I want the game info and any other telegraphing to be embedded in the game world | So I can be as immersed as possible in the game experience
Diagetic HUD
Add a card...
As a player | I want to be able to hear the awesome and unique sound of mine and opponents hover cars | So the experience is believable, impressive and immersive
Original/unique vehicle sound design
Add a card...
As a player | I want to see the score of my opponents | So that I can see how I'm performing at any point in the race
Hud
Add a card...
As a player | I want to be able to plot my course on a map before the race starts | so I can view it on the gps while racing and follow my chosen course
Map before race to plot course on to be viewed on small gps in-race
Add a card...
As a player | I want other players to be able to see the course I'm plotting temporarily | So I can potentially mislead other players
Network pre-race map
Add a card...
As a player | I want to be as immersed as possible in the game experience | So I get to BE the hover car racer.
Good art, audio, diagetic hud, tutorial system, world creation
Add a card...
As a player | I want to choose my vehicle | so I can influence my personal driving experience
Multiple vehicle models
Tweakable control and camera system
Add a card...
As a player | I want to have the option of racing in cockpit view or third person view | So I can race the way I like and have the option of being more immersed in the experience
Camera system that supports first or third person
Control system that supports first or third person
Art assets with cockpits
Animated arms for cockpit view
Add a card...
Add a list...

Appendices

Project Team

Elliot Gray – Level and Audio Designer

Will create the level terrain including some terrain decoration, game rules, and manage asset placement in the level. Audio Design

Christopher Jarvis – Programmer

Will create any auxiliary systems

Sook Hui (Vivian) Thum –Artist

Creation of Vehicle and all other art assets

Malcolm Yeo - Programmer

Programming our primary systems – multiplayer and vehicle control

Milestones

1. Prototype - time into the project: 25%
    a. Core terrain creation complete
    b. Vehicle control system features all in game
    c. Base networking model
2. Alpha - time into the project: 50%
    a. Multiplayer working
    b. Vehicle control system ready for balancing
    c. Audio linked to vehicle states
    d. Terrain height mapping finalised
    e. Game mode implemented
        i. Checkpoints and race finish functional
        ii. Planning phase implemented into game mode
3. Internal Testing – time into the project: 25%-100%
4. External Testing – time into the project 50%-100%
5. Beta – time into the project: 75%
    a. HUD/UI
    b. Vehicle System balancing
    c. Terrain detail placement/painting completed
    d. Balancing
6. Gold – May 26, time into project 100%

Risk Assessment

Risk	Description	Mitigation

Technical issues	Bugs in code or software could cause unpredictable interruptions in our work schedule.	We have a strong technically minded team so if unforseen problems should arise we should be able to rebalance workload at scrum meetings to get them
Team conflict	Conflict could arise from team members not contributing well	Rebalance workload at scrum meetings to get the game done on time and take this into account when it comes time for the peer review at the end of the project
File/progress loss	Files or projects could be lost, corrupted, deleted	Every team member will make regular backups to an external source and save incrementally.
Game isn't fun	Game might not work out as we had expected/planned	Testing early and devoting time necessary to balancing/modifying the game in the scrum meetings.
Planned features not possible	We could find that a planned feature just isn't possible considering man hours/tools available	Re-assess at every scrum meeting the overall progress.

Test Plan

Internal testing will begin once the prototype is complete.

Once we hit the alpha milestone we will begin external – naïve testing. Users in each session will read the following script.

Hello, I am [host] – thanks for testing our game! Please play as if you were sitting at home where you normally would play games. If you have any thoughts of note please say them aloud – "this didn't feel right" "why did this just happen" etc, "how do I do this". At the end of the session we will get you to fill in a questionnaire regarding your experience.

The questions the tester will be asked to answer are as follows

1. On a scale of 1 to 10 how fun did you find Hover Car Racer?
2. On a scale of 1 to 10 how likely would you be to want to play again?
3. On a scale of 1 to 10 how likely would you be to recommend Hover Car Racer to a friend?
4. On a scale of 1 to 10 how much do you feel hover car racer depends on player skill to win?
5. On a scale of 1 to 10 how challenging did you find hover car racer?
6. On a scale of 1 to 10 how balanced did you find hover car racer?
7. Did you find any bugs? (please list)
8. What were your favourite parts of the playtesting session?
9. What were your least favourite parts of the session?
10. If you could change something/anything in the game, what you change?

Refrences

Nintendo Co., Ltd. (2014, May 8). Financial results briefing for Fiscal Year ended march 2014. Nintendo Co. Retrieved from http://www.nintendo.co.jp/ir/pdf/2014/140508e.pdf

hovercar3d.png (PNG Image, 894 × 525 pixels) - Scaled (98%). (n.d.). Retrieved April 15, 2015, from https://static.squarespace.com/static/51b3dc8ee4b051b96ceb10de/51ce6099e4b0d911b4489b79/51ce6173e4b0d911b4494a8b/1326323305457/1000w/hovercar3d.png