APCS Special Topics Semester 2

Special Topics Racer

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| Project Information | |
| Title | Space Racer “Spacer” |
| Genera’s | Racing, Arcade, Open world |
| Spec Status | Initial Draft |

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| Contact Information | |
| Lead Developer | Eli Orona: [s-oronae@bsd405.org](mailto:s-oronae@bsd405.org) |
| Lead Designer | Parker Ives: [s-ivesp@bsd405.org](mailto:s-ivesp@bsd405.org) |
| Project Developer | Kunal Anand: [s-anandk@bsd405.org](mailto:s-anandk@bsd405.org)  Mohammed Mohiuddin: [s-mohiuddinm@bsd405.org](mailto:s-mohiuddinm@bsd405.org) |
| Testers | Omar Madhani: [s-madhanio@bsd405.org](mailto:s-madhanio@bsd405.org)  Kim Geiger-Lazo: [s-geigerk@bsd405.org](mailto:s-geigerk@bsd405.org)  Rahul Singh: [s-singhra@bsd405.org](mailto:s-singhra@bsd405.org) |
| Graphic Designer | Alex Steadman: [s-stedmanj@bsd405.org](mailto:s-stedmanj@bsd405.org) |
| Audio Designer | Sumedh Panatula: [s-panatulas@bsd405.org](mailto:s-panatulas@bsd405.org) |

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| Revision Summary | | | |
| Author | Date (week) | Version | Comments |
|  |  |  |  |
| Parker | 25 February 2020 (3) | 0.1 | Initial Draft |
| Parker | 28 February 2020 (3) | 0.2 | Removed Control Section |
| Parker | 1 March 2020 (4) | 0.3 | Added Level One Desc. |
| Parker | 13 May 2020 (10) | 0.4 | Updated Bone Yard & Description |
| Parker | 9 June 2020 (14) | 1.0 | Updated to Contain Launch Content |
| Parker | 10 June 2020 (14) | 1.1 | Updated Description |

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# Project Summary

## Description

An open world Indie racing game developed by the Sammamish High School Computer Science Special Topics Class. The game features an immersive first-person perspective as the player drives a futuristic invisible car around on a flat planet in the infinite void of space.

# Feature Explanation

## Game World Design

### Level 1

Simple flat level designed to be plain, so the player has an easy open track to learn and gives the designers and programmers the option to have an easy playground while developing obstacles or environment. With no special gravity or obstacles so the player has the optimal first experience learning the controls while being simple enough that experienced players can play the level quickly and easily.

## Game Mode Design

### Open World Exploration

An open world with no travel restrictions on the player allowing them to explore the rich environment to their hearts content.

## Start Menu

### Credits Button

A button that brings a pop-up menu showing our contributors. Added so that we can credit our contributors without having an end credit scroll since the game is theoretically endless.

### Start Button

A button that when clicked will cause the GUI to disappear and begin to render the game and run logic.

# Bone Yard

## MultiPlayer

### What Was Planned

We had planned for there to be some local connectivity so players could play with their friends including 1v1 and group races as well as group exploration.

### Why Removed?

We deemed it as too much to handle as it added a whole other layer of complexity, and while it would add a substantial amount of entertainment the balance of work to worth was decidedly a bit too uneven for our team to handle.

## time trial

### What Was Planned

The player would compete against themselves in a timed race. This was of giving the player some activity in the game world without having multiplayer.

### Why Removed?

Last minute group vote decided that open world was our best bet, due to the fact that the library was being unpredictable we decided that it wouldn’t be practical to add a checkpoint system or anything to make sure the player was following the track. As well as that the fact that we couldn’t have a GUI layer means there would be no easy way of tracking player lap times and displaying that.

## multiple game modes

### What Was Planned

Multiple modes including a group race, 1v1, open exploration, and time trial for the player to experience a variety of gameplay types to add replay ability and a certain fun factor

### Why Removed?

The Modes had to be reduced to just time trial due to the removal of multiplayer (see 3.1) and the decided removal of open world aspects (see 3.2) making it difficult to have multiple modes without any way to vary gameplay.

## Race HUD

### What Was Planned

An ambitious design with map for player to navigate the track(s), boost meter for the player to see the recharge of their speed boost, timer so the player could track the time taken to complete the track better, and speed gauge for the player to see just how fast they are moving.

### Why Removed?

Due to an issue with the library we were working with we could not have HUD and elements with a world and/or object(s). The library was having issues with multi-threading that made any mix of 3D and 2D in the same window impossible.

## obstacles

### What Was Planned

A set of obstacles such as ice, cows, and asteroids that would add variety to the track every time the player played. Each obstacle doing something different e.g.: cows standing in the track or ice causing the player to slip.

### Why Removed?

In a similar vein to the removal of the Race HUD (see 3.4) the library wasn’t able to support a camera and objects in the world. Despite having it work-ish at one point as soon as we tried to move the camera or any object the entire world would shift.

## leveling

### What Was Planned

A collection of two to three levels with different tracks and obstacles for the player to follow. Each track having enough variety to distinguish them from one another and focus on different gameplay elements, e.g.: one with jumps to show off gravity or another with several strait section to show players what high speeds feel like.

### Why Removed?

Combination of time and troubled development, due to Covid messing up schedules for over a month, a lack of submitted assets, and all other delays in development it was deemed impractical to keep in the game. As we approached 3 weeks to launch, we decided it wasn’t worth trying to implement and was removed from the requirements for our minimum viable product.