

**University of Calgary**  
**CPSC 585 — Winter 2019 — Games Programming**

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**Project A**  
**High-Concept Design Document**

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**Team A**  
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# 1 Game Design

Project A is a combat-based driving game aimed to test your skill against a team of AI. The player finds themselves driving a hovercraft in an arena pitted against 4 enemy hovercrafts. Utilizing their abilities, power-ups, and the map itself, the player must survive to destroy as many enemies as possible before they are finally defeated.

## 1.1 Game Analysis

Project A at its core is inspired by Mario Kart's battle mode. Elements of the game are also inspired by Tron (1982), and Pac-Man.

## 1.2 Game Concept

## 1.3 Game Goals

The player's central goal is to gain the highest score possible before they lose all their lives and the game ends. The player has the following means to gain score:

- Destroying enemies. This can be through the use of abilities or through environmental hazards. Depending on the means by which enemies are destroyed, various amount of points can be awarded.
- Taking power-ups.

## 1.4 Game Genre

## 1.5 Brand Analysis

## 1.6 Target Market

While violence is a core component of the gameplay, nothing is particularly graphic due to the use of vehicles over people. We therefore believe that Project A is appropriately targeted for all ages above 6 years of age.

## 1.7 Competitive Analysis

Being a single-player game, players would compete to achieve the highest score possible, either against other players, or their own past high scores. This can be viewed as an asynchronous multiplayer game akin to many classic arcade games, where players compete between rounds.

## 1.8 Gameplay Direction

# 2 Proposed Features

The central constraint of proposed features is development time available to implement them. As a result, all features have an associated priority and risk, of which higher priority features will be completed first, and higher risk features will more likely be altered, replaced, or not implemented at all.

## 3 Game Design Elements and Terminology

### 3.1 Story

### 3.2 Terminology

### 3.3 Game Information

#### 3.3.1 Arenas

#### 3.3.2 Abilities

#### Movement

- **Standard movement** — A hovercraft does not rely on wheels to move and so can traverse in any lateral direction without needing to turn, meaning that strafing is possible.
- **Acceleration/braking** — A hovercraft can accelerate or brake in any direction it is currently moving. It will often drift if a turn is made, even at relatively slow speeds, which can be both advantageous and disadvantageous.
- **Dashing** — A hovercraft can dash in any direction, temporarily gaining invulnerability. From a mobility standpoint, dashing can be used to catch up to other hovercrafts, reach power-ups faster, or lose others when being chased. From a defensive standpoint, it can be used to dodge attacks.

#### Attacks

Every hovercraft has 3 attack abilities that are available from the start of the game.

- **Rocket** — A rocket launches forward straight out from the direction the hovercraft is facing until it hits a surface. Upon impact, it explodes, damaging everything in a radius around it. Being the only ranged attack, it is great for attacking distant enemies if aimed well, or when chasing other vehicles. The splash damage can be utilized with parts of the arena environment to hit enemies near walls easier, or to hit multiple enemies that are grouped together.
- **Spikes** — Spikes temporarily extend in all directions from the hovercraft, damaging other vehicles that come in contact with it. Can be used both aggressively and defensively when other vehicles are nearby. It can also be used in combination with dashing to crash into enemies.
- **Flame trail** — A trail of fire is created that follows the player's path. Any hovercraft that contacts it is damaged. Great to use when being chased.

#### 3.3.3 Power Ups

#### 3.3.4 Difficulty

#### 3.3.5 Menu

## 4 Concept Art