**Gravital**

**High Concept:**

Navigate your way through the fabric of space and time while absorbing various collections of matter that you encounter in order to increase your mass and gravitational pull. Avoid being sucked in by stronger gravitational fields as you evolve from small asteroid to a black hole.

**Gameplay:**

The player guides their mass around an infinite 2-D plane by gently accelerating it in the direction of the mouse pointer or with their finger on a mobile device. The player’s mass attracts (and is attracted by) other masses encountered in space. The player must accumulate mass by absorbing smaller masses, while avoiding making contact with larger masses. Different mini-objectives like finding satellites or making contact with various lifeforms can also be introduced. The player can use the gravitational pull of larger masses to their advantage by ‘slingshotting’ themselves through space at high velocity. The player can eject some of their own mass at high velocity in order to change their course or break larger masses into smaller pieces. The player may enter wormholes that will transport them to another area of the universe, or temporarily take the player to an alternate universe with different laws of physics and exotic materials. The goal of the game is to progress through the status of asteroid, planet, star, and finally supernovae into a black hole.

**Genre:**

Gravital is a casual real-time strategy game based on a realistic physics simulation.

**Target Audience:**

Gravital is targeted at casual gamers, explorers, and logical thinkers who may want to play for short periods at a time and enjoy playing with physical simulations.

**Features:**

Explore the far reaches of outer space, and leverage gravitational interactions to your advantage.

Encounter many different masses with various physical properties like density and material. Comets move quickly and scatter mass behind them. White dwarf stars are small but super dense.

Explore an infinitely large area of space as new objects are generated while you move along.

Encounter interesting pieces of space-junk and signs of intelligent life as you explore.

Experience alternate universes with foreign physical and material properties.

**Setting:**

The game is set in outer space, where the player will encounter masses of various composition and size. Particularly interesting masses are comets travelling at high velocity, black holes, and ringed gas giants. The player will also encounter rarer man?-made objects like satellites and space-junk. Collecting these special materials may convey certain abilities or trigger events.

**Hardware Platforms:**

The game will be designed for computers, but adapting for mobile devices should be straightforward.

**Competitve Analysis:**

There are three popular games with the same core mechanic of absorbing smaller players or objects to increase size while avoiding being absorbed by larger players or objects. All three of these games have received very good reviews.

Nebulous

This is an endless massively multiplayer game based on multilateral competition within a confined playable area. It has a loosely space-oriented premise and no physical simulation involved in the gameplay. This game is for mobile devices only.

Agar.io

This is another endless massively multiplayer game, with very similar gameplay and objectives as Nebulous. This game also features team-based gameplay. The game is based on a bacteria or virus premise, and has the same limitations as Nebulous. This game is available through web browsers and for mobile devices.

Osmos

This is a single player game with many discrete levels with varying objectives. The gameplay involves physical simulations with various enemy types that have different properties and actions. This game is available for Windows, Mac, Linux, and mobile devices.

**Estimated Schedule:**

The core mechanics of this game have already been implemented in my second assignment (http://jaxxzer.github.io/gravityking/). Below is a suggested timeline for developing a usable prototype that includes most of the features.

Week 1

Add different objects like planets, black holes, and space junk.

Week 2

Fine tune physical properties and behaviors of different objects, such as spawn rate, density, material.

Week 3

Add mini-objectives/achievements and wormholes, and continue tuning game physics.

Week 4

Test and tune overall gameplay for usability and optimal player experience. Add alternate universe functionality, if time permits.

**Team:**

I have had a relatively smooth time finding my way around phaser and implementing my ideas, but this is my first experience with javascript. Someone with prior experience in javascript could help from a performance/efficiency standpoint. I would like someone who has experience with game states in phaser to help me with this, as I have not used that feature at all yet. I think most of the graphics will easily be sourced online, but if someone is interested in creating artwork for this game, I would welcome their contributions.

**Summary:**

This is a great game concept because it shares a relatively new core mechanic that has proven to be popular in competing games, but Gravital takes this concept much further with the additional features of physical simulation and endless world exploration. The theme of outer space also carries a huge potential for an incredibly immersive experience through grand visuals and an ambient electronic soundtrack. This game would be very appealing to the futuristic generation of gamers in our age of advanced technology, deep space exploration, and discovery of the forces that shape our universe. I have had fun developing the first prototype of the mechanic, and I am excited to see how these features can be implemented to improve the gameplay experience.

**Art credit:**

http://desktop.freewallpaper4.me/view/original/6252/asteroid-belt-art.jpg