# Gravitas – Project Plan

*“Create a Spaceship Piloting game that implements orbital mechanics”*

## Requirements

### Scene

* Spaceship model
* Planets or other “heavy” objects

### UI

* Camera
  + Should follow the spaceship
  + Zoom controlled by mouse
  + Still function if camera is re-positioned later
* Keyboard Inputs
  + Allow movement of ship
  + Inputs should be passed to another script, rather than directly move the script, to allow other code to interpret it first
  + Scalable for additional features later, such as other ship functions
* Key info displayed to user
  + Ability to show values graphically to the user during play

### Mechanics

* Spaceship Movement
  + Spaceship should be able to move in 2D plane, but scalable to 3D later
  + Should allow either keyboard inputs (for player) or other inputs (for enemies)
* Gravity
  + Only interactions between “Heavy” and “Light” objects
  + Should be dynamically evaluated
* Energy (fuel)
  + Should interact with ship movement
  + Should be adaptable to allow other actions to cost/add energy later

### Challenge

* Enemies ships
  + Should have constant speed
  + Should collide with player ship and do damage
  + Not initially affected by gravity, but introducible later
  + Phase through obstacles, but introducible later
  + Possible to add energy mechanic later
* Enemies AI
  + Should chase player in most direct way possible
* Level
  + Should have a time
  + Should have a geometric objective (get to point B from A)