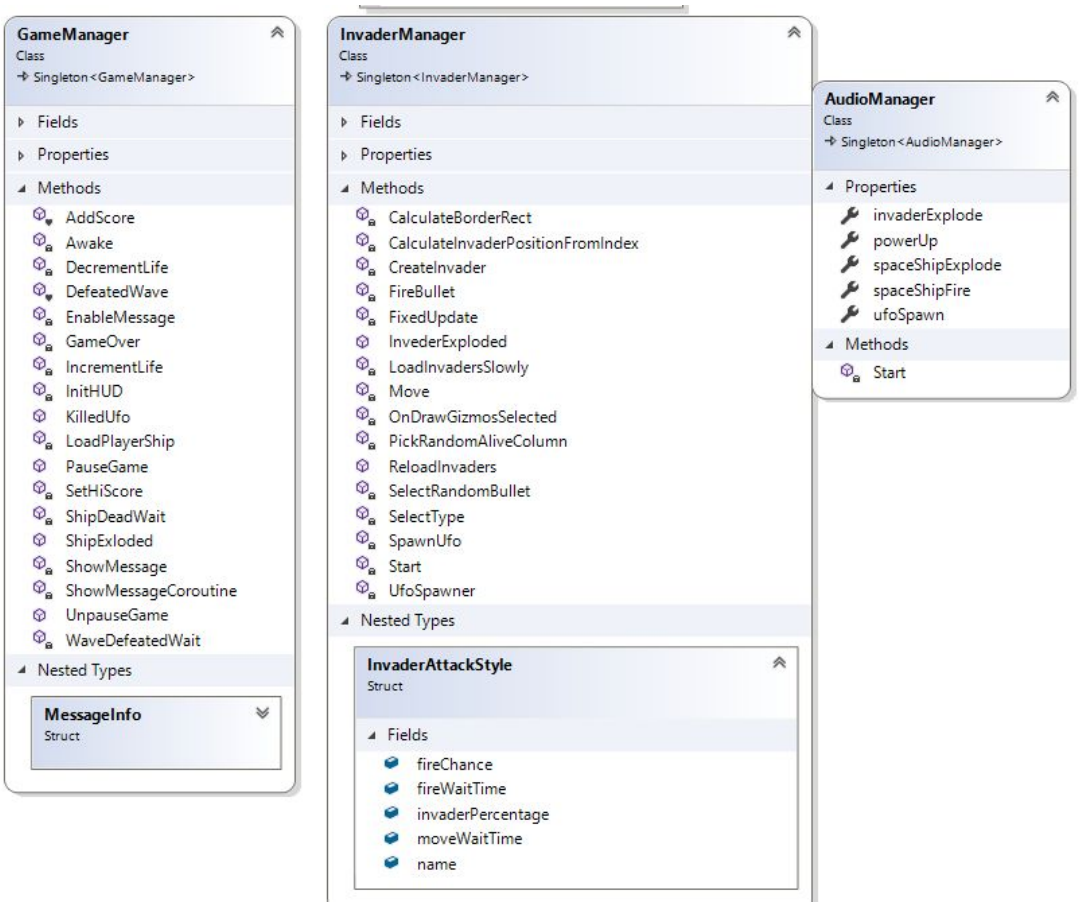
Space Invaders Demo

Code Explanation Document

Managers

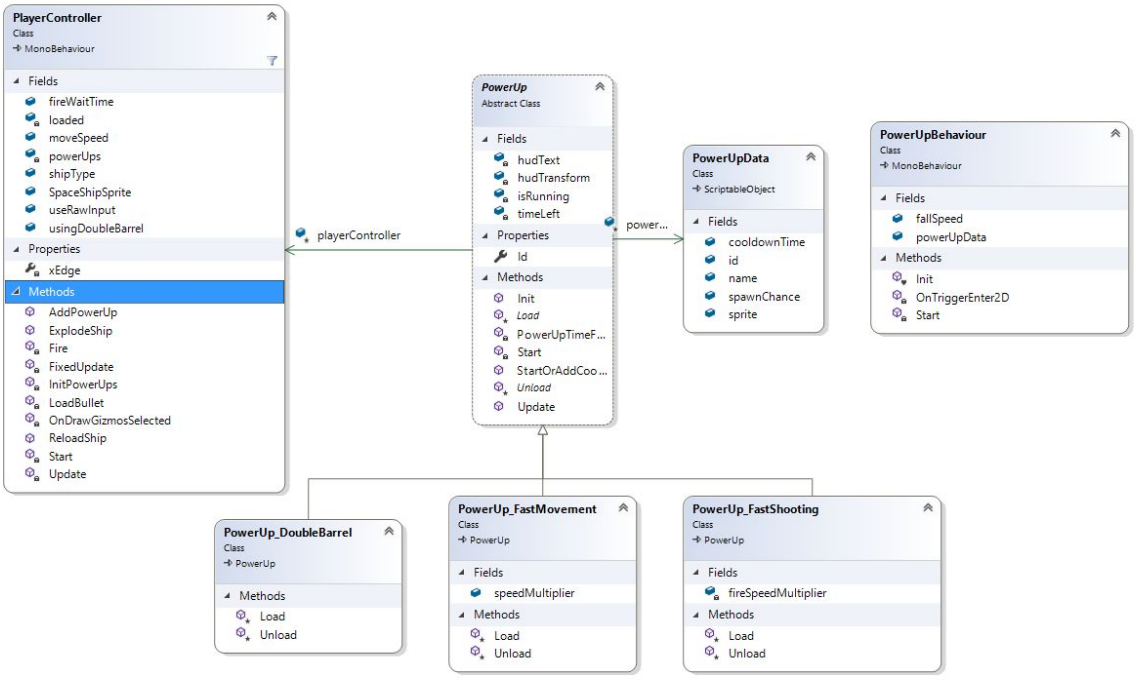


GameManager
Controls In game HUD, general game progress, contains game references and settings. It includes a Message Showing system, this system makes it possible to set messages from inspector to show on the screen while game play.

InvaderManager
InvaderManager is responsible from controlling all of the invaders. Invaders attack styles changes over the percentage of the remaining invader, these behaviour can be changed from inspector by adding or removing a style from Attack Styles list, you can set things like invaders attack speed and move speed.

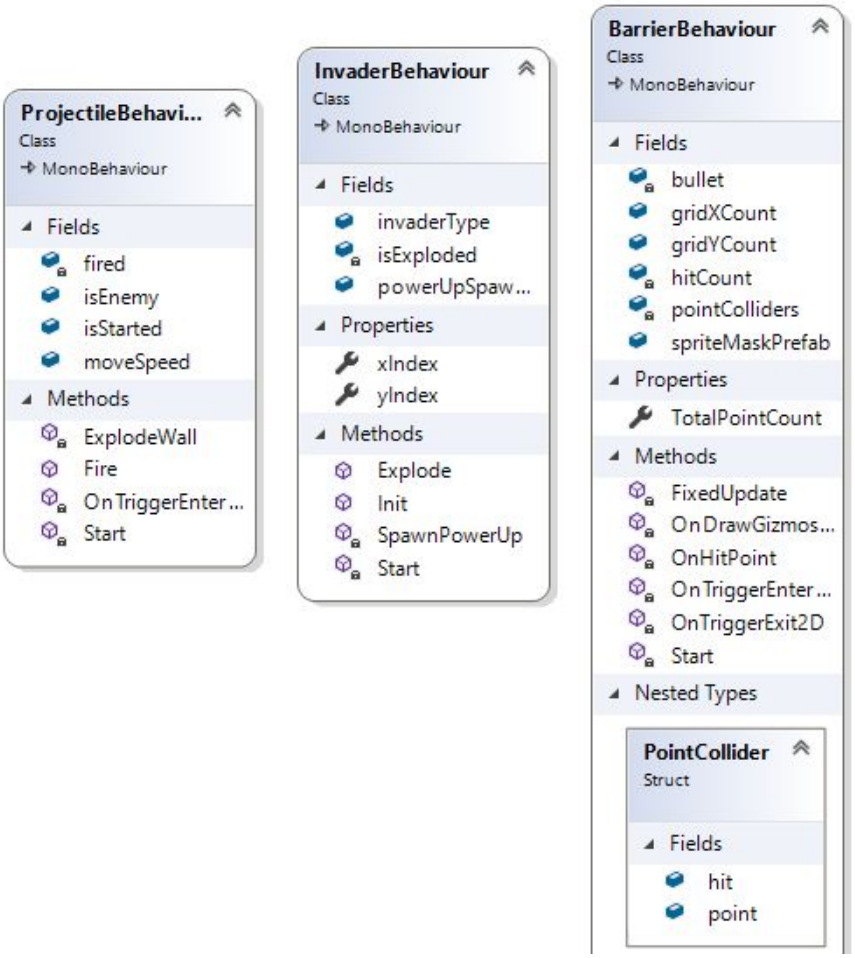
AudioManager
AudioManager just contains the references of audio source objects. They can be played from any object since AudioManager is a Singleton class.

PlayerController



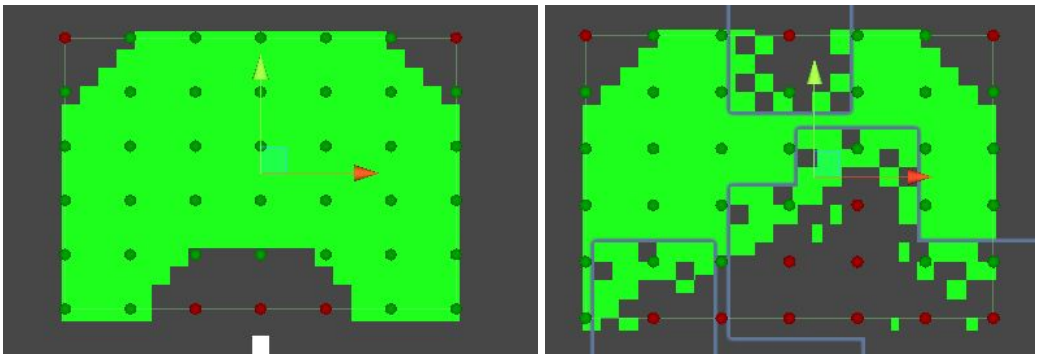
Player Controller contains input and interactions logic. Movement, fire etc.
It also controls the power ups logic. Each power gives different powers to the player like shooting faster or moving faster, to create a new power up you should create a PowerUpData which is a Scriptable Object from unity that contains some data about power up, then you should create new PowerUp class derived from abstract PowerUp class and define Load and Unload functions. This way you can make custom PowerUp.

Behaviours



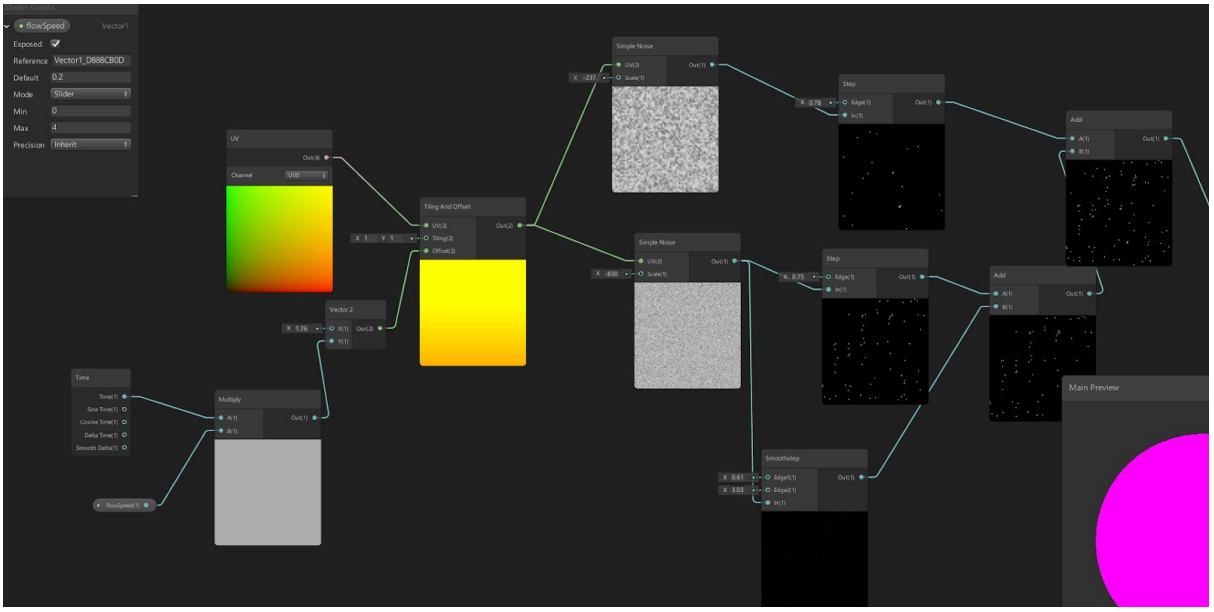
There is not really much to write about Projectile and Invader Behaviours, they contains some data and have basic interactions with other objects.

But BarrierBehaviour is a little tricky.



To be able to show damage on the barriers, I created a point collision system and used SpriteMask component to create damage visualization. Basicly when a projectile enters in the BoxCollider area the barrier manually controlling if projectile hits a point that havent been hit before. When all points are hit object destroys itself.

Space Shader



For space shader i did’nt wanted to add ShaderGraph and LightWeight RenderPipeLine packages to the project, so I opened up a project that has these packages and made a ShaderGraph that looks like above image.
I did this because shader graph makes it easier for you to make what you have in your head. Then I ported this Shader to a custom shader.