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The Unity Challenge

Asteroid On DOTS

Introduction

Hola! My name is Daniil and this report is about Asteroids game on DOTS.

OneFrame Event System

There is a custom event system for any needed use cases. There is an option to fire an event for a few frames, so the name should be more like “Event”, not “OneFrame”. You could create an event anytime in any other system and handle this event in another at the subsequent N frames. All fired events will be destroyed at the end of the game loop.

Object Pool

My solution does not contain an object pool because instantiating and destroying entities costs almost nothing due to copying data from memory by address pointer.

Object Creation

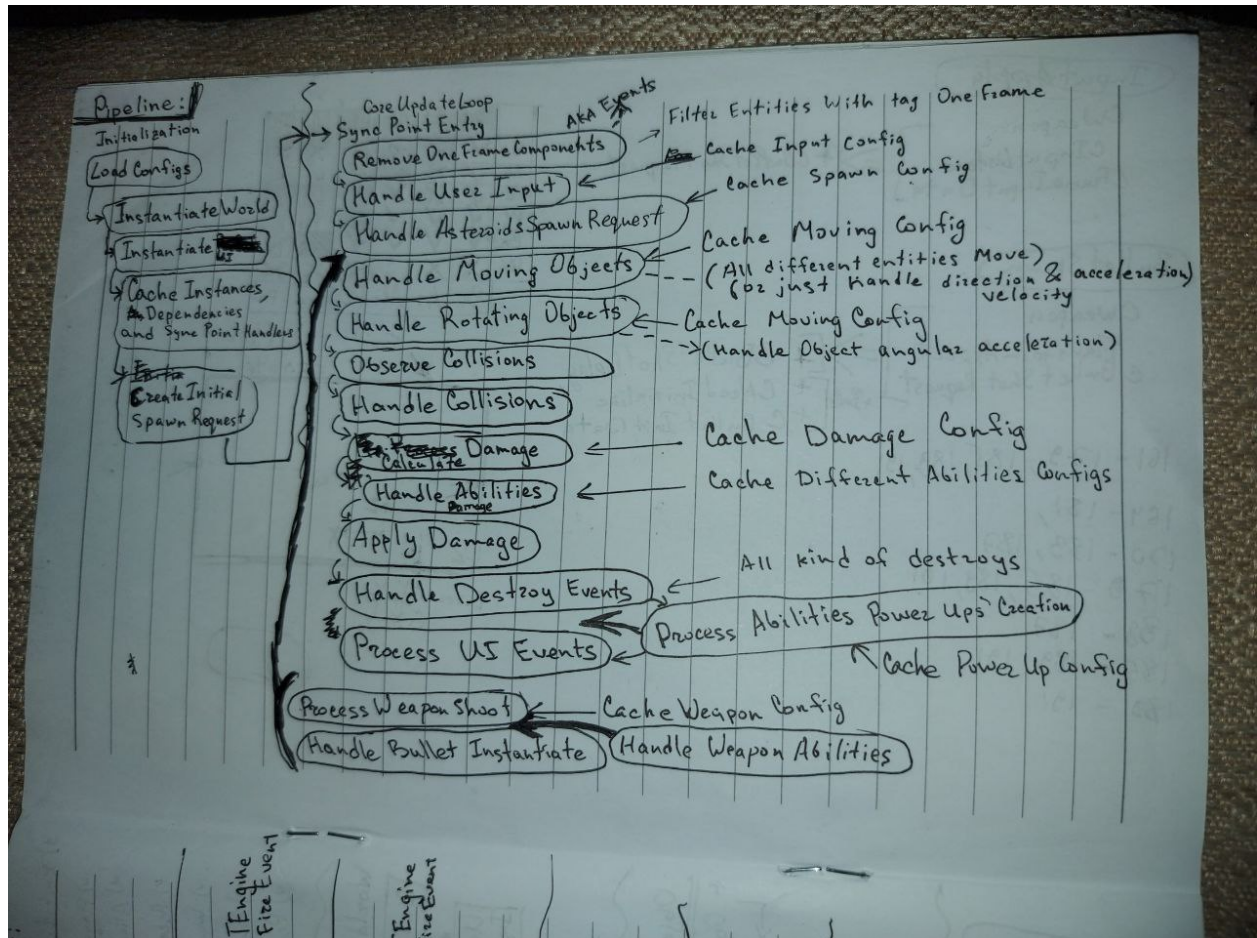
My solution provides a flexible object creation request/answer system with a user-friendly request builder. But the switch for getting concrete prefab could be replaced with smth better.

FX:

I've implemented the basic functionality for S/V FX firing. This is scalable and in union with OneFrame events could provide a stable and flexible solution.

There are only left adding concrete FX'es. I thought it was not necessary.

Old school paper sketches



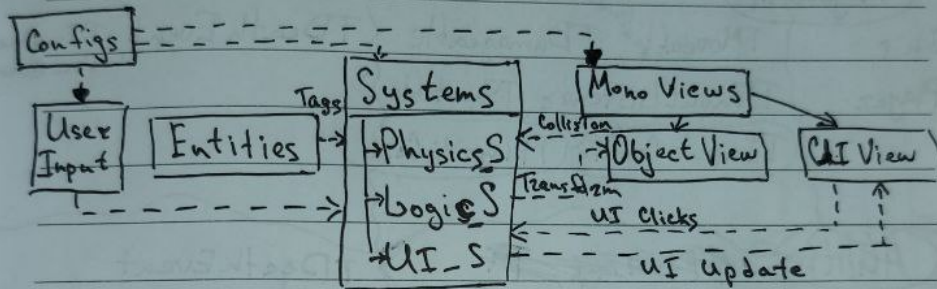
1) Entities:

- v) Player Ship
- v) Alien Ship
- v) Asteroids
- v) Weapons
- v) Bullets
- v) Power Up Placeholder

2) Events:

- v) Weapon fire
- v) Entity spawn
- v) Entity move
- v) Entity death
- v) User Input
- v) Power up apply
- v) Collision

World:



Object Pool System:

+ Object Request

↳ OPS. OnUpdate

↳ OPS. Find Requested Object

↳ Object Answer

↳ - Object Request

~~DOTS already implement Object Pool~~

Configs: 1) Prefabs Data

2) Entity Types Data

3) Speed Data

4) Generation Data

5) Power Up Data

Add TRequest

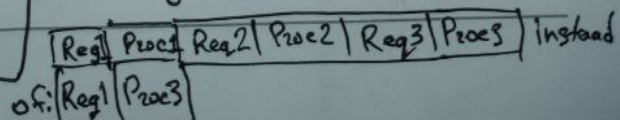
↳ OnUpdate

↳ perform Tasks

↳ Add TAnswer

↳ Remove TRequest

Request & Answer components processing create 2-3 frames stacking delay;



Links

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