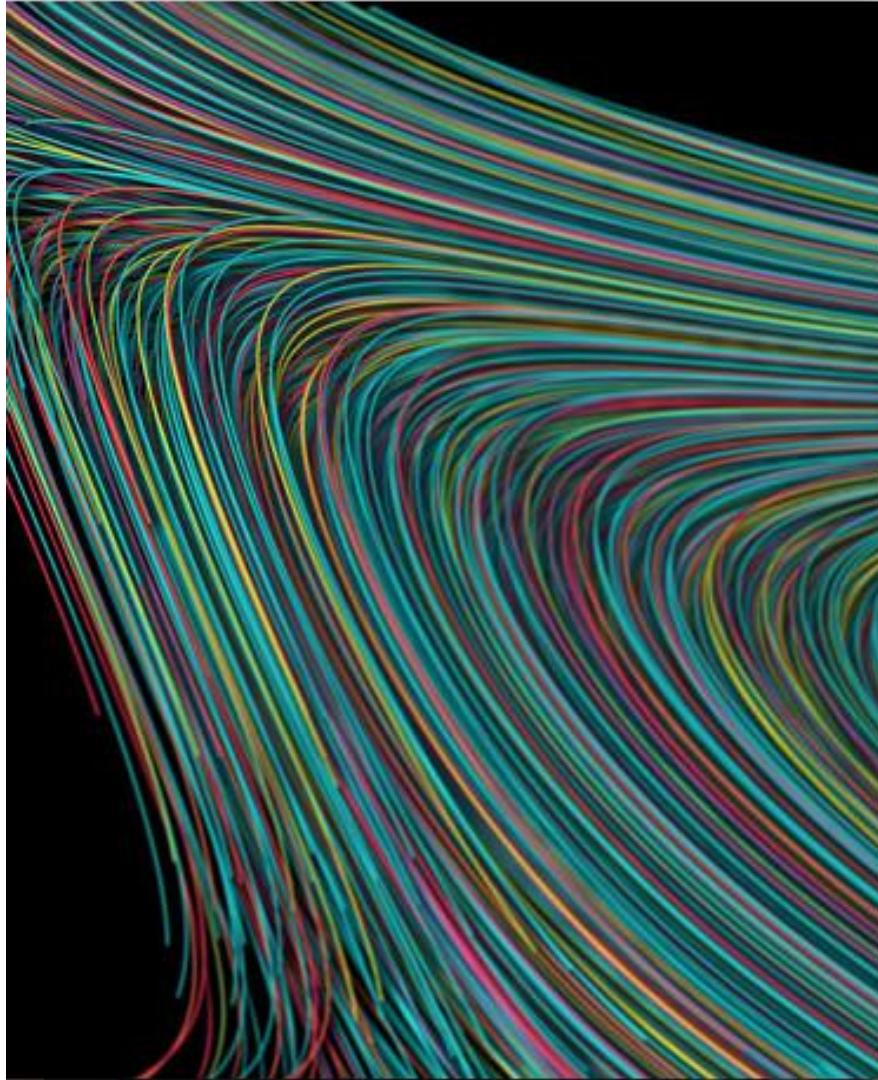
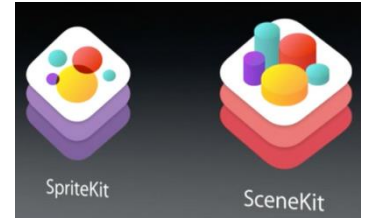




Sébastien Poivre



Main game engines



rendering / animations / physic engine / audio / lightning / ...

Unity Capabilities

3D games



Cities: Skyline



I Expect you to die



Battletech



Superhot



Firewatch



Overcooked

2D games



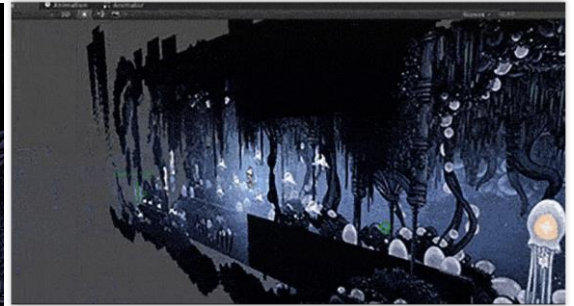
Heartstone



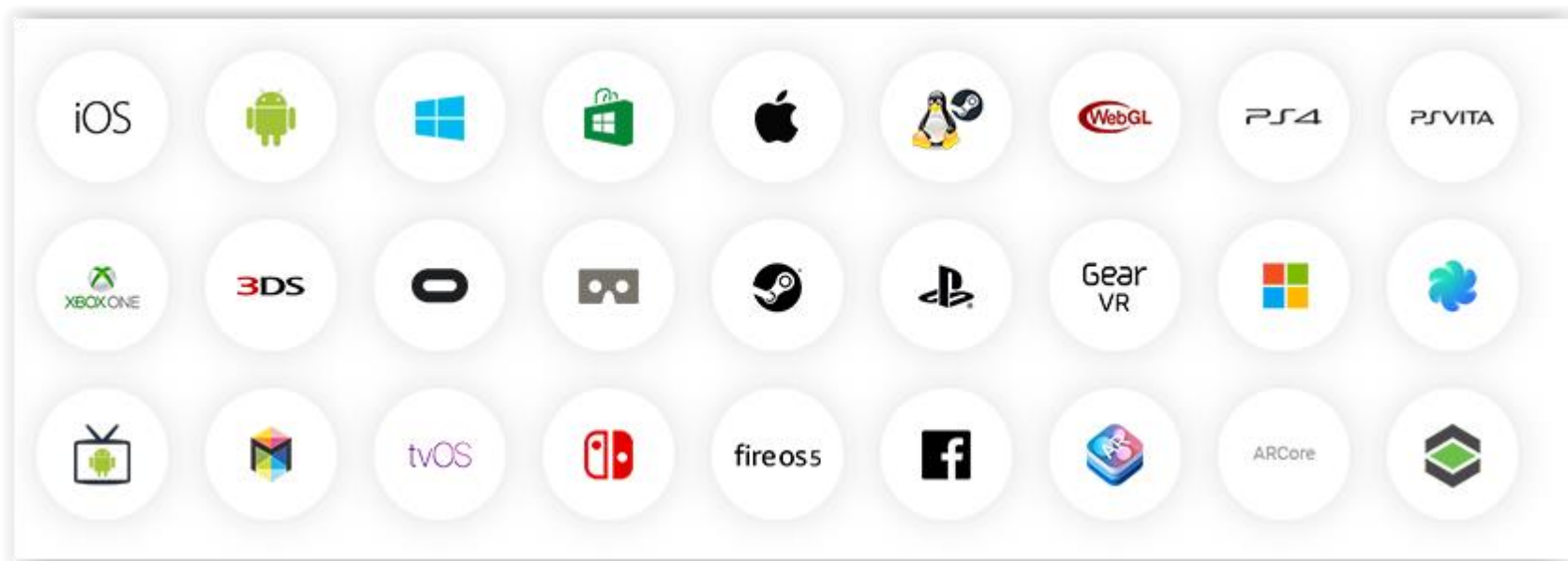
Cuphead



Snipperclips



Cross-platforms



XR

VR, AR, MR, XR ?

AUGMENTED REALITY (AR)

Virtual objects overlaid on real-world environment



The real world enhanced with digital objects



MIXED REALITY (MR)

Virtual environment combined with real world

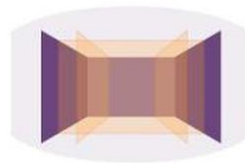


Interact with both the real world and the virtual environment



VIRTUAL REALITY (VR)

Fully artificial environment



Full immersion in virtual environment



Extended Reality



Physical Reality



Augmented Reality



Mixed Reality



Virtual Reality

XR platforms overview

virtual reality

augmented reality

PC



console



autonomous



mobile (3DoF)



ARKit



ARCore

UnityXR-Ready

XR

XR is an umbrella term, encompassing Virtual Reality (VR), Augmented Reality (AR) and Mixed Reality (MR) applications.



XR Overview

Overview of XR concepts.



VR Overview

Overview of VR concepts.



Google VR

Learn about Google VR SDK support in Unity for Cardboard and Daydream devices.



Oculus

Learn about support in Unity for Oculus devices.



Open VR

Learn about OpenVR SDK support in Unity.



Windows Mixed Reality



Vuforia

Learn about Vuforia SDK support in Unity.



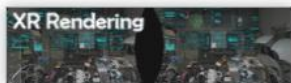
XR Input

Learn about the XR API input system and specific XR Platform interaction concepts.



XR Audio

Learn about Audio concepts in XR and how to implement Spatial Audio in your applications.



XR Rendering

Learn about XR Rendering concepts.



XR Reference














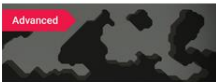
Learn about the XR API in Unity.


























Unity Quick start

Official tutorials

<https://unity3d.com/fr/learn/tutorials>

 <p>Interactive Tutorials (4) Get Started with Unity.</p>	 <p>Roll-a-ball tutorial (9) Build your first simple game and Learn to code in C#</p>	 <p>2D Game Kit (38) Create your own 2D platform game without writing any code.</p>	 <p>3D Game Kit (33) Explore and create in this 3D game kit without writing any code.</p>
 <p>Space Shooter tutorial (19) Blast some Asteroids!</p>	 <p>Survival Shooter tutorial (12) They mostly come at night..</p>	 <p>2D UFO tutorial (9) New? Want to make 2D games? Start here.</p>	 <p>Space Chicken (21) Never tried Unity? No coding skills? Perfect! Make your first game & share using "Ready."</p>
 <p>Tanks tutorial (8) 2-players, 1 keyboard, Tank vs Tank.</p>	 <p>Adventure Game tutorial (7) Learn to create the systems used to develop an adventure game in this intermediate level project.</p>	 <p>2D Roguelike tutorial (11) Procedural level Survive-em-up!</p>	 <p>Tower Defense Template (10) Learn how to create your own Tower Defense game</p>
 <p>Creating Believable Visuals (9) In this article we look at the fundamentals of setting up good baselines for believable visuals.</p>	 <p>Procedural Cave Generation tutorial (9) Let's get spelunking.</p>		

 Interface & Essentials (18)	 2D Game Creation (67)
 Scripting (139)	 Unity For Artists (60)
 Best Practices (26)	 Performance Optimization (5)
 Graphics (108)	 Physics (27)
 Audio (12)	 Animation (35)
 User Interface (UI) (47)	 Mobile & Touch (15)
 Navigation (26)	 Tips (19)
 Ads & Analytics (9)	 Mini Tutorials (12)
 Cloud Build (4)	 XR (20)
 Multiplayer Networking (21)	 The Asset Store (38)
 Developer Advice (7)	 Game Performance Reporting (1)
 Production (2)	

Asset store

<https://assetstore.unity.com/>

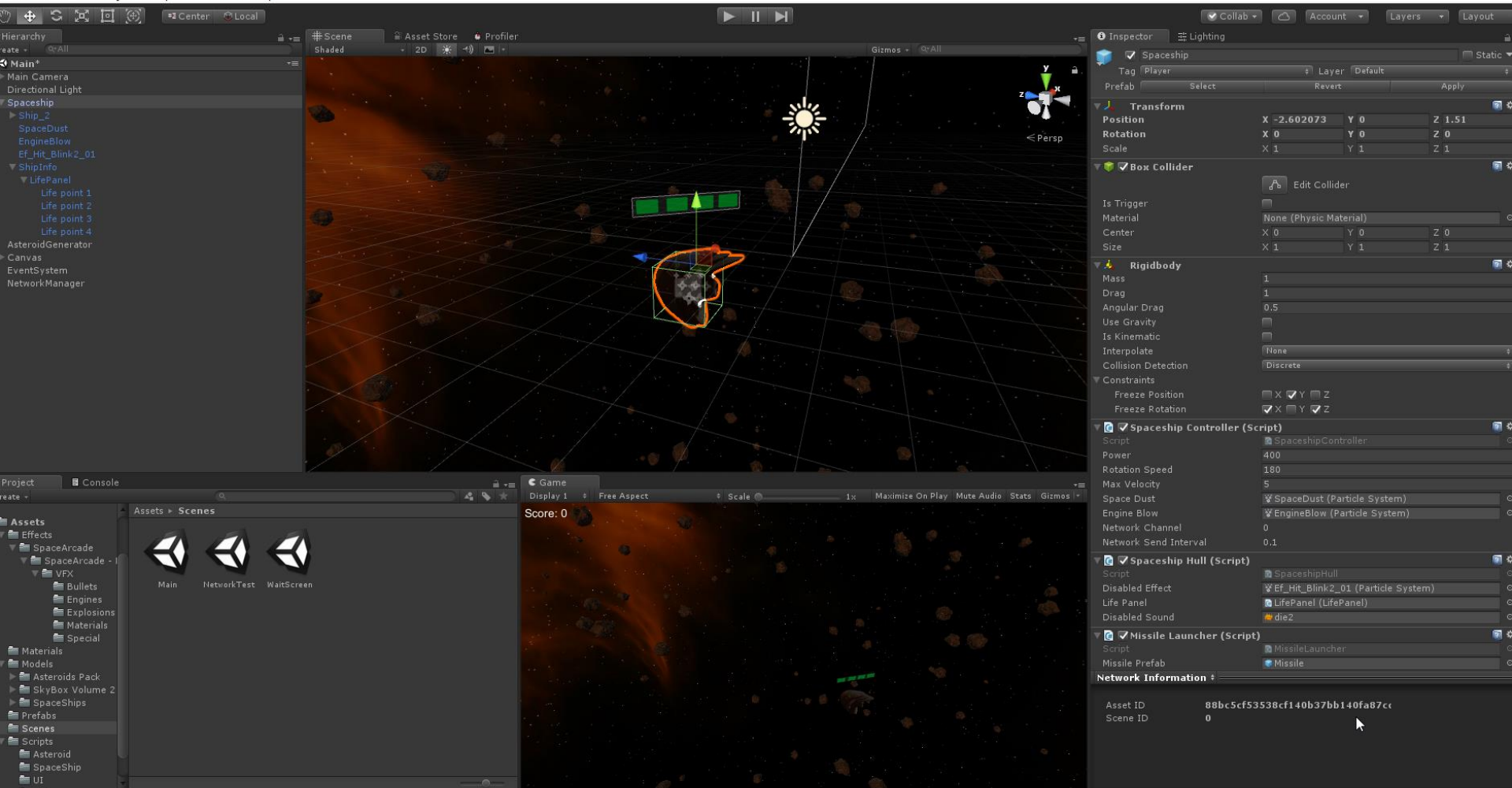
The image displays three overlapping screenshots of the Unity Asset Store website. The top-left screenshot shows the 'Star Sparrow Modular Spaceship' by EBAL STUDIOS, a free asset with 41 reviews. The top-right screenshot shows the 'Space Combat Kit' by VSXGAMES, priced at €35.73 with 10 reviews. The bottom-center screenshot shows the 'A* Pathfinding Project 4.1' by ARON GRAY, priced at 6.2 MB with 4.1.16 reviews. Each screenshot shows the asset's main image, title, price, reviews, and a list of package contents, releases, and supported Unity versions. The interface includes a search bar at the top and navigation links for various asset categories.

Star Sparrow Modular Spaceship
EBAL STUDIOS
FREE
★★★★★ 41 user reviews
Add to My Assets
Package contents: 53.2 MB
Releases: current ver. 1.5
Supported Unity versions: 5.5.4 or higher
Support website | Publisher website

Space Combat Kit
VSXGAMES
€35.73
★★★★★ 10 user reviews
Add to Cart
Taxes/VAT calculated at checkout
The Space Combat Kit for Unity is designed to help you create anything from a simple arcade space shooter to a sophisticated space sim.
WebGL Demo
Forum Thread
With the flexible Vehicles/Subsystems/Modules framework, it's easy to create all kinds of ships, weapons, and ship modules, and give your players options in the loadout menu before they fight it out with exciting AI opponents.
Only use what you need - with this kit's modular framework, the stuff you don't need won't get in the way.
Show More
Share | Add to List | Report this asset

A* Pathfinding Project 4.1
ARON GRAY
6.2 MB
★★★★★ 4.1.16
Releases: current ver. 4.1.16
Supported Unity versions: 5.2.2 or higher
Support website | Publisher website
Share | Add to List | Report this asset

Unity Editor Organization





GameObjects tree

GameObject components

Hierarchy

- Main*
- Main Camera
- Directional Light
- Spaceship
 - Ship_2
 - SpaceDust
 - EngineBlow
 - Ef_Hit_Blink2_01
 - ShipInfo
 - LifePanel
 - Life point 1
 - Life point 2
 - Life point 3
 - Life point 4
 - AsteroidGenerator
 - Canvas
 - EventSystem
 - NetworkManager

Project

Assets

- Effects
 - SpaceArcade
 - SpaceArcade - 1
 - VFX
 - Bullets
 - Engines
 - Explosions
 - Materials
 - Special
- Materials
- Models
 - Asteroids Pack
 - SkyBox Volume 2
 - SpaceShips
- Prefabs
- Scenes
 - Main
 - NetworkTest
 - WaitScreen
- Scripts
 - Asteroid
 - SpaceShip
 - UI

Inspector

Spaceship

Tag: Player Layer: Default Static

Prefab Select Revert Apply

Transform

Position	X -2.60273	Y 0	Z 1.51
Rotation	X 0	Y 0	Z 0
Scale	X 1	Y 1	Z 1

Box Collider

Edit Collider

Is Trigger ☐

Material None (Physic Material)

Center	X 0	Y 0	Z 0
Size	X 1	Y 1	Z 1

Rigidbody

Mass 1

Drag 1

Angular Drag 0.5

Use Gravity ☐

Is Kinematic ☐

Interpolate None

Collision Detection Discrete

Constraints

Freeze Position	<input type="checkbox"/> X <input checked="" type="checkbox"/> Y <input type="checkbox"/> Z
Freeze Rotation	<input checked="" type="checkbox"/> X <input type="checkbox"/> Y <input checked="" type="checkbox"/> Z

Spaceship Controller (Script)

Script SpaceshipController

Power 400

Rotation Speed 180

Max Velocity 5

Space Dust ☒ SpaceDust (Particle System)

Engine Blow ☒ EngineBlow (Particle System)

Network Channel 0

Network Send Interval 0.1

Spaceship Hull (Script)

Script SpaceshipHull

Disabled Effect ☒ Ef_Hit_Blink2_01 (Particle System)

Life Panel ☒ LifePanel (LifePanel)

Disabled Sound ☒ die2

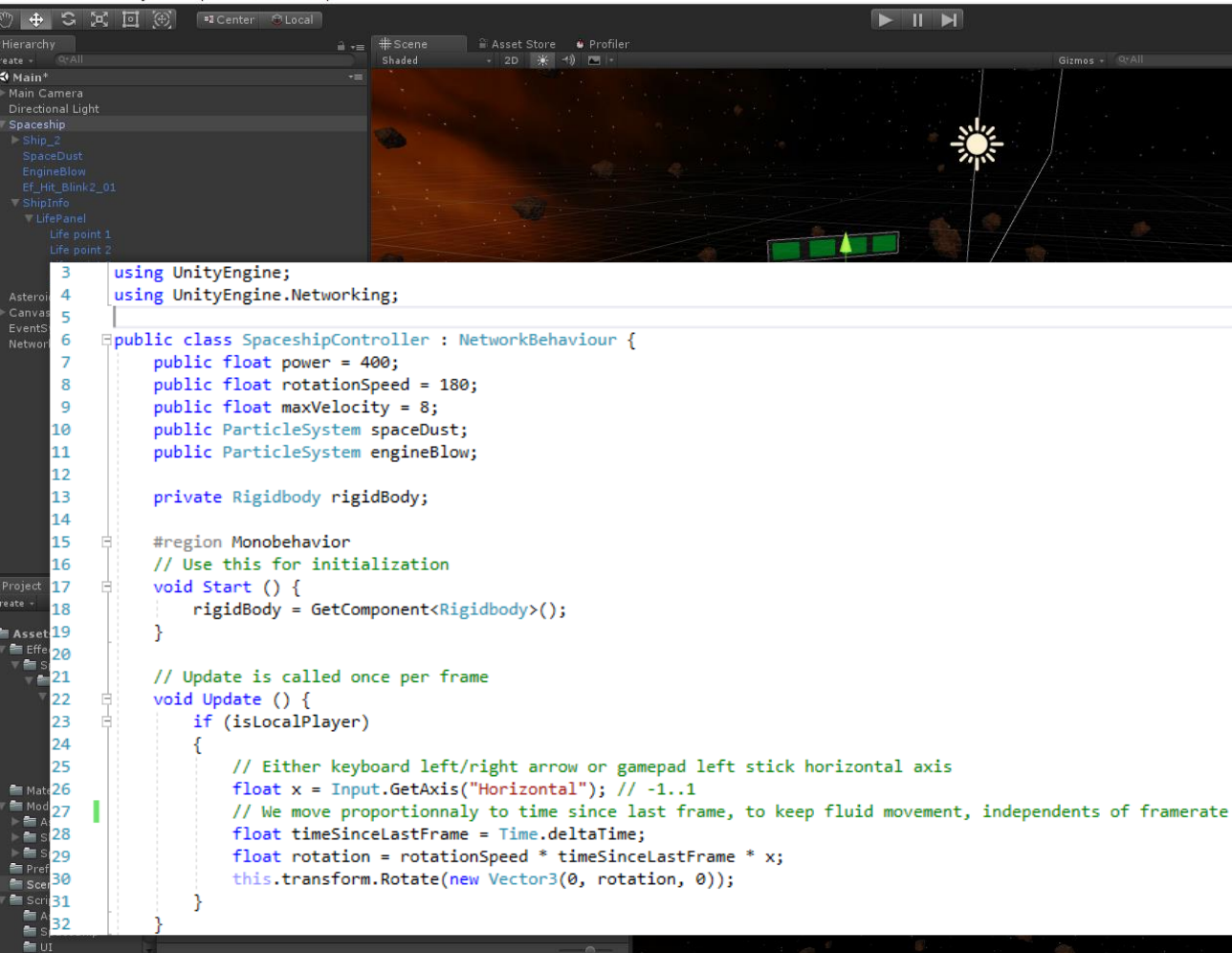
Missile Launcher (Script)

Script MissileLauncher

Missile Prefab ☒ Missile

Network Information

Asset ID	88bc5cf53538cf140b37bb140fa87cc
Scene ID	0



Inspector window showing the properties of the Spaceship GameObject.

Transform

Property	X	Y	Z
Position	-2.60273	0	1.51
Rotation	0	0	0
Scale	1	1	1

Box Collider

Is Trigger: ☐

Material: None (Physic Material)

Center: X 0, Y 0, Z 0

Size: X 1, Y 1, Z 1

Rigidbody

Mass: 1

Drag: 1

Angular Drag: 0.5

Use Gravity: ☐

Is Kinematic: ☐

Interpolate: None

Collision Detection: Discrete

Constraints

Freeze Position: ☐ X ☒ Y ☐ Z

Freeze Rotation: ☒ X ☐ Y ☒ Z

Spaceship Controller (Script)

Property	Value
Script	SpaceshipController
Power	400
Rotation Speed	180
Max Velocity	8
Space Dust	SpaceDust (Particle System)
Engine Blow	EngineBlow (Particle System)
Network Channel	0
Network Send Interval	0.1

Spaceship Hull (Script)

Property	Value
Script	SpaceshipHull
Disabled Effect	EF_Hit_Blink2_01 (Particle System)
Life Panel	LifePanel (LifePanel)
Disabled Sound	die2

Missile Launcher (Script)

Property	Value
Script	MissileLauncher
Missile Prefab	Missile

Network Information

Property	Value
Asset ID	88bc5cf53538cf140b37bb140fa87cc
Scene ID	0


```
3 using UnityEngine;
4 using UnityEngine.Networking;
5
6 public class SpaceshipController : NetworkBehaviour {
7     public float power = 400;
8     public float rotationSpeed = 180;
9     public float maxVelocity = 8;
10    public ParticleSystem spaceDust;
11    public ParticleSystem engineBlow;
12
13    private Rigidbody rigidBody;
14
15    #region MonoBehaviour
16    // Use this for initialization
17    void Start () {
18        rigidBody = GetComponent<Rigidbody>();
19    }
20
21    // Update is called once per frame
22    void Update () {
23        if (isLocalPlayer)
24        {
25            // Either keyboard left/right arrow or gamepad left stick horizontal axis
26            float x = Input.GetAxis("Horizontal"); // -1..1
27            // We move proportionally to time since last frame, to keep fluid movement, independents of framerate
28            float timeSinceLastFrame = Time.deltaTime;
29            float rotation = rotationSpeed * timeSinceLastFrame * x;
30            this.transform.Rotate(new Vector3(0, rotation, 0));
31        }
32    }
33 }
```

Inspector

Spaceship

Tag Player

Layer Default

Static

Prefab Select

Revert

Apply

Transform

Position

X -2.60273

Y 0

Z 1.51

Rotation

X 0

Y 0

Z 0

Scale

X 1

Y 1

Z 1

Box Collider

Edit Collider

Is Trigger

None (Physic Material)

Center

X 0

Y 0

Z 0

Size

X 1

Y 1

Z 1

Rigidbody

Mass

1

Drag

1

Angular Drag

0.5

Use Gravity

Is Kinematic

Interpolate

None

Collision Detection

Discrete

Constraints

Freeze Position

Freeze Rotation

X Y Z

X Y Z

Spaceship Controller (Script)

Script

SpaceshipController

Power

400

Rotation Speed

180

Max Velocity

5

Space Dust

SpaceDust (Particle System)

Engine Blow

EngineBlow (Particle System)

Network Channel

0

Network Send Interval

0.1

Spaceship Hull (Script)

Script

SpaceshipHull

Disabled Effect

EF_Hit_Blink2_01 (Particle System)

Life Panel

LifePanel (LifePanel)

Disabled Sound

die2

Missile Launcher (Script)

Script

MissileLauncher

Missile Prefab

Missile

Network Information

Asset ID

88bc5cf53538cf140b37bb140fa87cc

Scene ID

0

Thank you

sebastien@poivre.name