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Agenda – Day 01

1 Introduction

2 Architecture

3 Unity Interface

4 Objects & Components

5 Prefabs

6 Physics

7 Joints

8 Physics Puzzle

What is Unity

Unity is

A game engine and *ecosystem*

Supports more platforms than any other publically available tool

Used by hobbyist & students, up to major studios

Unity is not

A 2D image or vector graphic creation tool.

A 3D modelling environment

Major Components in Unity 5

ANIMATION

- ✓ Retargetable animations
- ✓ Full control of animation weights at runtime
- ✓ Event calling from within the animation playback
- ✓ Sophisticated State Machine hierarchies and transitions
- ✓ Blend shapes for facial animations

AUDIO

- ✓ Real-time mixing and mastering
- ✓ Hierarchies of mixers, snapshots and predefined effects

GRAPHICS

- ✓ Enlighten-powered Real-time Global Illumination
- ✓ Physically-based shading
- ✓ Reflection probes
- ✓ Curve and gradient-driven modular particle system
- ✓ Intuitive UI tools

2D AND 3D PHYSICS

- ✓ Box2D with a comprehensive range of effectors, joints and colliders
- ✓ NVIDIA® PhysX® 3.3

OPTIMIZATION

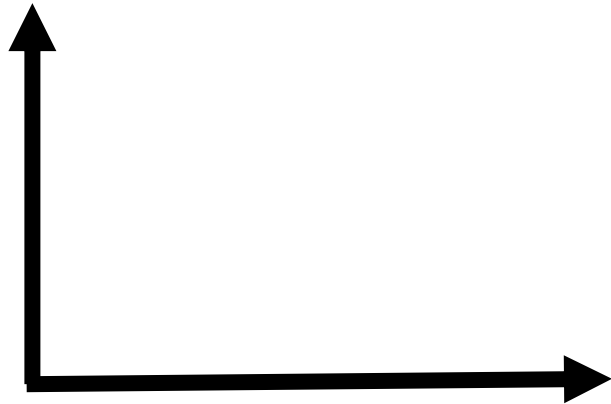
- ✓ Advanced memory profiling
- ✓ Umbra-powered occlusion culling
- ✓ Asset bundling
- ✓ Level of detail support
- ✓ Build size stripping
- ✓ Multi-threaded job system

SCRIPTING

- ✓ C#, JavaScript
- ✓ AI features with advanced automated path finding and Navigation Meshes

2D Implementation

- 2D uses X and Y coordinates.
- Vectors are used to store X and Y values.
- Each value determines position of an object in the game.



Vectors

- Vectors are is a type of a variable that containers more then one value.
- There're two types of vectors
 - 3D Vectors (X,Y, and Z)
 - 2D Vectors (X and Y)

Unity User Interface

DEMO

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Game Objects and Components

- Everything in Unity is a Game Object.
- Each Game Object is extended by adding components into it.

Game Objects and Components

DEMO

Physics

DEMO