

Project I
[Summer Internship]

Understaning the 3D Game Design Pipeline

Submitted by

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Abstract

Having some experience with 3D animation and various 3D animation software, I wanted to explore other media that makes use of 3D animation. 3D game Design is one such medium.

Video game design is the process of designing the content and rules of a video game in the pre-production stage and designing the gameplay, environment, storyline, and characters in the production stage. The designer of a game is very much like the director of a film; the designer is the visionary of the game and controls the artistic and technical elements of the game in fulfillment of their vision.

Video game design requires artistic and technical competence as well as writing skills. Within the video game industry, video game design is usually just referred to as "game design", which is a more general term elsewhere.

Fuzicom Design is a game design studio based in pune where I had a quick run-through the game design process where i got involved and observed these processes closely.

Introduction to Unity

Unity is a flexible and powerful development platform for creating multiplatform 3D and 2D games and interactive experiences. It's a complete ecosystem for anyone who aims to build a business on creating high-end content and connecting to their most loyal and enthusiastic players and customers.

With an emphasis on portability, the engine targets the following APIs: Direct3D on Windows and Xbox 360; OpenGL on Mac and Windows; OpenGL ES on Android and iOS; and proprietary APIs on video game consoles.

Unity allows specification of texture compression and resolution settings for each platform the game supports, and provides support for bump mapping, reflection mapping, parallax mapping, screen space ambient occlusion (SSAO), dynamic shadows using shadow maps, render-to-texture and full-screen post-processing effects.

Unity's graphics engine's platform diversity can provide a shader with multiple variants and a declarative fallback specification, allowing Unity to detect the best variant for the current video hardware; and if none are compatible, fall back to an alternative shader that may sacrifice features for performance.

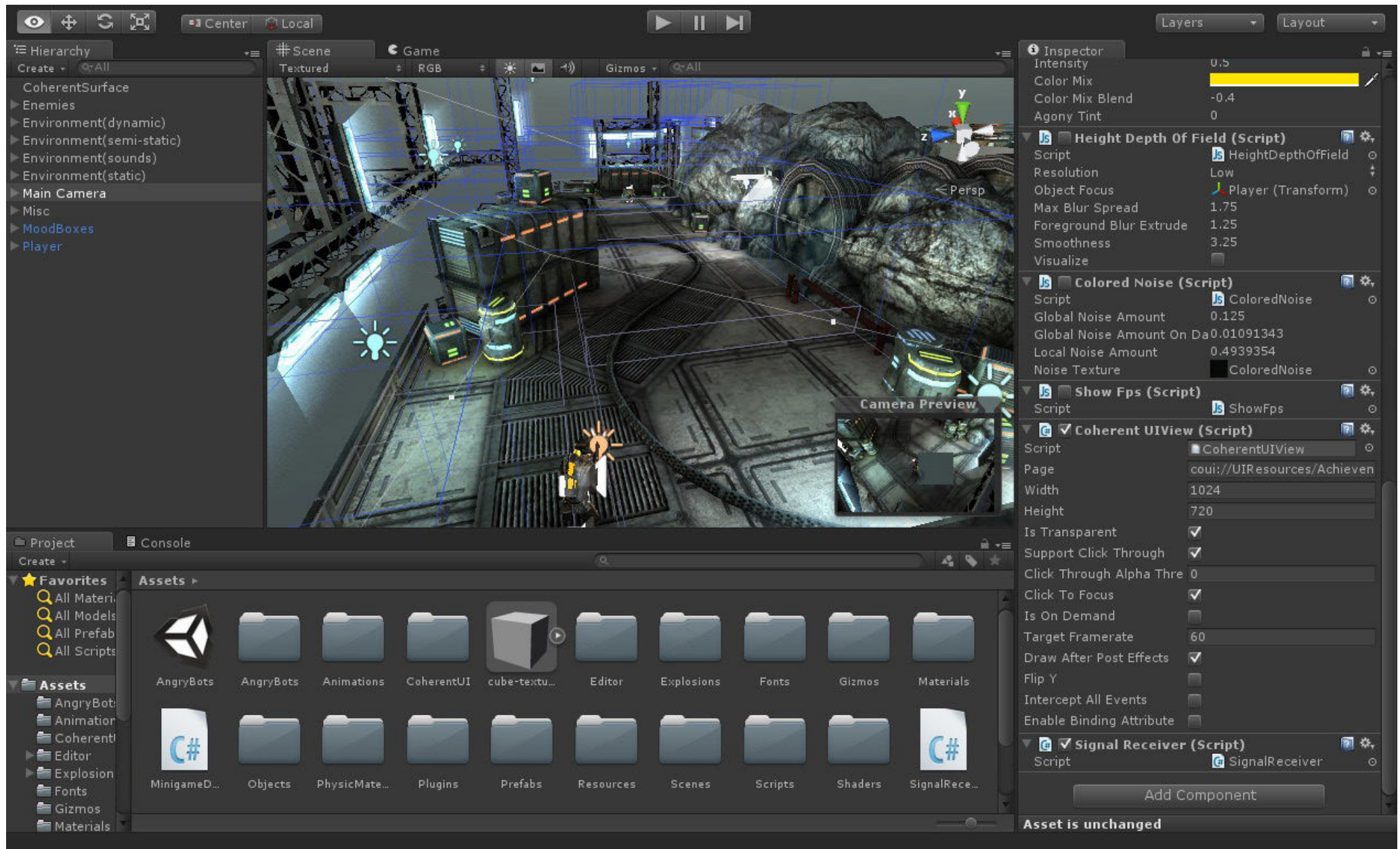
Unity is notable for its ability to target games to multiple platforms. Within a project,

developers have control over delivery to mobile devices, web browsers, desktops, and consoles.

Supported platforms include BlackBerry 10, Windows Phone 8, Windows, OS X, Android, iOS, Unity Web Player (including Facebook[14]), Adobe Flash, PlayStation 3, PlayStation 4, PlayStation Vita, Xbox 360, Xbox One, Wii U, New 3DS and Wii.

It includes an asset server and Nvidia's PhysX physics engine. Unity Web Player is a browser plugin that is supported in Windows and OS X only.[17] Unity is the default software development kit (SDK) for Nintendo's Wii U video game console platform, with a free copy included by Nintendo with each Wii U developer license.

Understanding the Unity 3D interface



Starting with Unity 3D

I started exploring the Unity 3D interface by myself and took some help in understanding the following

HowTo Create A Project

Familiarizing WithThe Unity Editor GUI

ManipulatingThe Camera

Creating And Manipulating Objects

IntroductionTo Components

Creating a basic level in Unity 3D

After familiarizing with the UI, i started building a basic level

Creating Terrain

Adding Trees

Adding Wind

Adding Grass

Adding Rocks

Adding A Campfire

Using Particle Effects To Add Fire (And Smoke)

Adding Sky

Adding Fog

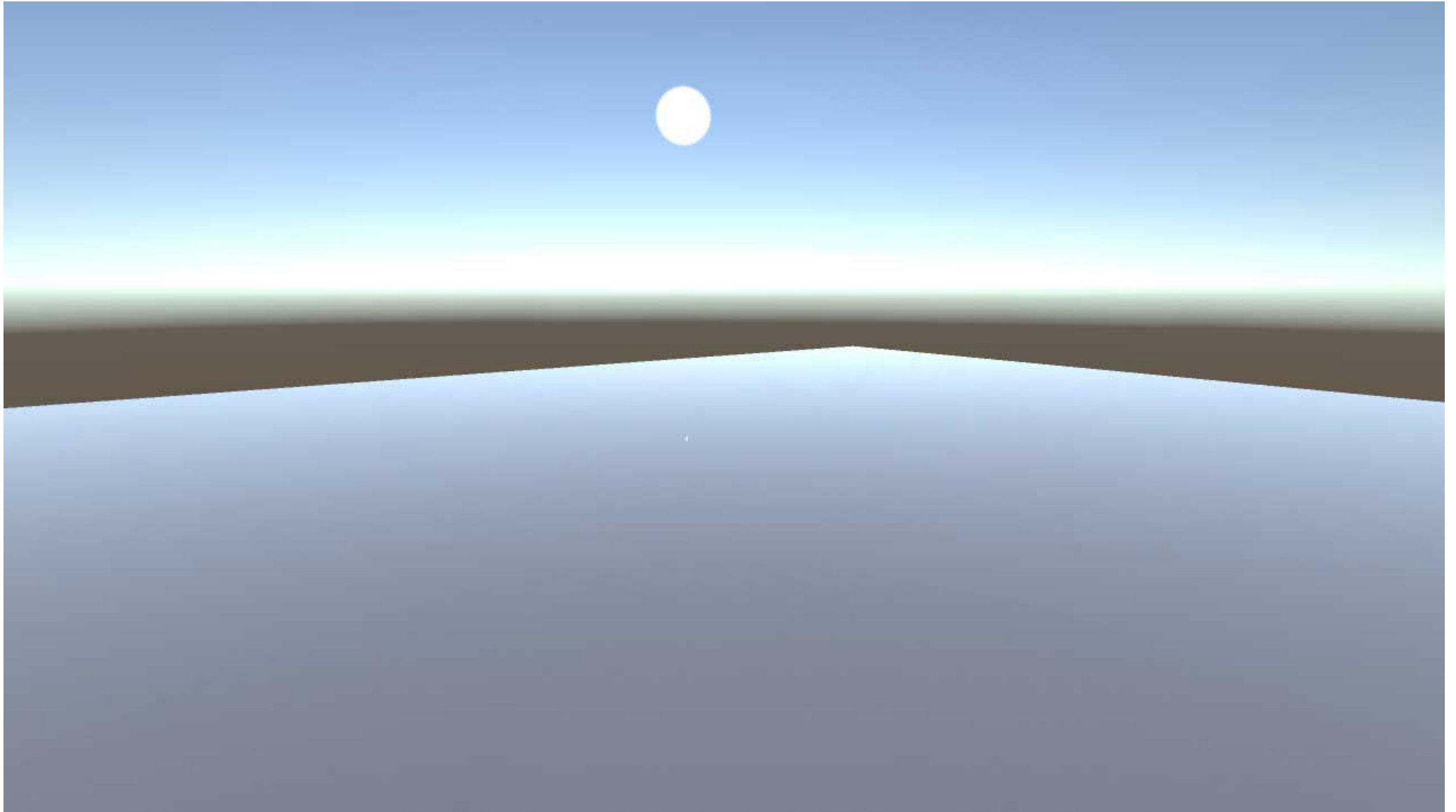
Adding Sound And Music

Adding Lens Flare

Publishing The Game As An .EXE File

Publishing The Game On The Browser

Creating a Terrain



Texturing the Terrain



Adding Grass and Trees



Adding Wind and Smoke



Adding Fog



Conclusion

Through this project, i have closely observed and learnt the game production pipeline. I have learnt low poly modeling essential for game prop creation and the texturing required. This Summer internship at Fuzicom Design has opened new pathways in the field of 3D animation