

Sci-fi Adventure Game Design Document

Concept

Discover the mysterious alien planet where our Principal Engineer, Ellen has crash landed. Avoid the hazards and defeat the enemies lurking within the ancient ruins of an unknown civilization in this third-person, sci-fi-themed adventure game.

Character Setup - Ellen

Textures and Materials

Ellen has a total of 6 materials, many of which require custom shaders. The fully configured materials have been included with the Ellen rig, and need to be applied in Unity.

Controller Setup

The Ellen mesh should be grouped under an empty game object that's set at the same position of the root of Ellen's rig--this is also the pivot point of Ellen's mesh. This empty game object should be titled EllenController, and should have the following components applied:

- Animator
- Rigidbody set to Use Gravity
- Capsule Collider aligned to mesh height and ZeroFriction physicMaterial applied
- Third Person User Control Script
- Third Person Character Script
 - Jump Power: 6
 - Ground Check Distance: 0.3

Animations and Animator Controller

Ellen's rig should be humanoid so she can share animations with any other character that gets added to the game later on in production. All of her imported assets should also be set for use with a humanoid rig.

Animator Setup

Ellen's animator should only have the single base layer, which should be set to have an IK pass.

Animator Parameters [Parameter type in brackets]

- [Float] Forward
- [Float] Turn
- [Bool] OnGround
- [Float] Jump
- [Float] JumpLeg

The Animator is comprised of two blend trees: Grounded and Airborne. Each of these blend trees are described below:

Grounded:

Blend Type: 2D Freeform Cartesian

Parameters: Turn, Forward

Motion Field: 7 animations

Animation name	Turn value	Forward value
EllenIdle	0	0
EllenWalkForward	0	0.5
EllenRunForward	0	1
EllenRunForward45Right	1	1
EllenRun45Left	-1	1
StandHalfTurnRight	0.5	0
StandHalfTurnLeft	-0.5	0

Airborne:

Blend Type: 2D Freeform Cartesian

Parameters: Jump, JumpLeg

Motion Field: 3 animations

Animation name	Jump value	JumpLeg value	Animation Speed
EllenJumpGoesDown2	-9	0	0.5
EllenJumpGoesUp2	5	0	0.1
EllenJumpPeak	0	0	0.4

Transitions

The Grounded blend tree should transition to the Airborne blend tree when the OnGround bool is set to false.

The Airborne blend tree should transition to the Grounded blend tree when the OnGround bool is set to true, and the Jump float is less than -2

Camera

Ellen should have a Cinemachine camera that follows her throughout the world and also allows the player to freely look around using the mouse to rotate the camera. To fulfill these needs, a Cinemachine Freelook camera should be utilized.

Look Target

The Ellen Prefab should have a game empty named LookAtTarget that will be used to control where the Cinemachine camera will be looking.

Cinemachine Setup



Figure 1: Top View

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Figure 2: Middle View



Figure 3: Bottom View

The Y Axis Max speed should be set to 1.

Orbits

Spine Curvature: 0.413

Rig	Height	Radius
op	4.5	3
Middle	2.5	5
Bottom	0.4	1.5

Chomper Setup

Animations and Animator Controller

Since the Chomper character is a quadruped, it's rig should be set as Generic. The animator itself is very simple, and would support a simple navigation behavior that the programmers are currently working on. The Chomper will randomly wander throughout the environment, alternating randomly between idling and walking. When the Player comes into view, the Chomper will begin chasing after them, and if they come into a close enough range, it will attack. If the Player is able to move out of visual range, the chomper will slow back down to a walk, and then go back to their patrol.

Animations Used

- ChomperIdle
- ChomperWalkForward
- ChomperRunForward
- ChomperAttack

Animator Parameters [Parameter type in brackets]

- [Bool] isPatrolling
- [Bool] playerVisible
- [Bool] inAttackRange

Transitions

- ChomperIdle should be the default animation, and should transition to both ChomperWalkForward with isPatrolling (true) and ChomperRunForward with playerVisible (true) without exit time.
- ChomperWalkForward should transition to ChomperIdle with isPatrolling(false) without exit time
- ChomperRunForward should transition to ChomperWalkForward with playerVisible(false) without exit time

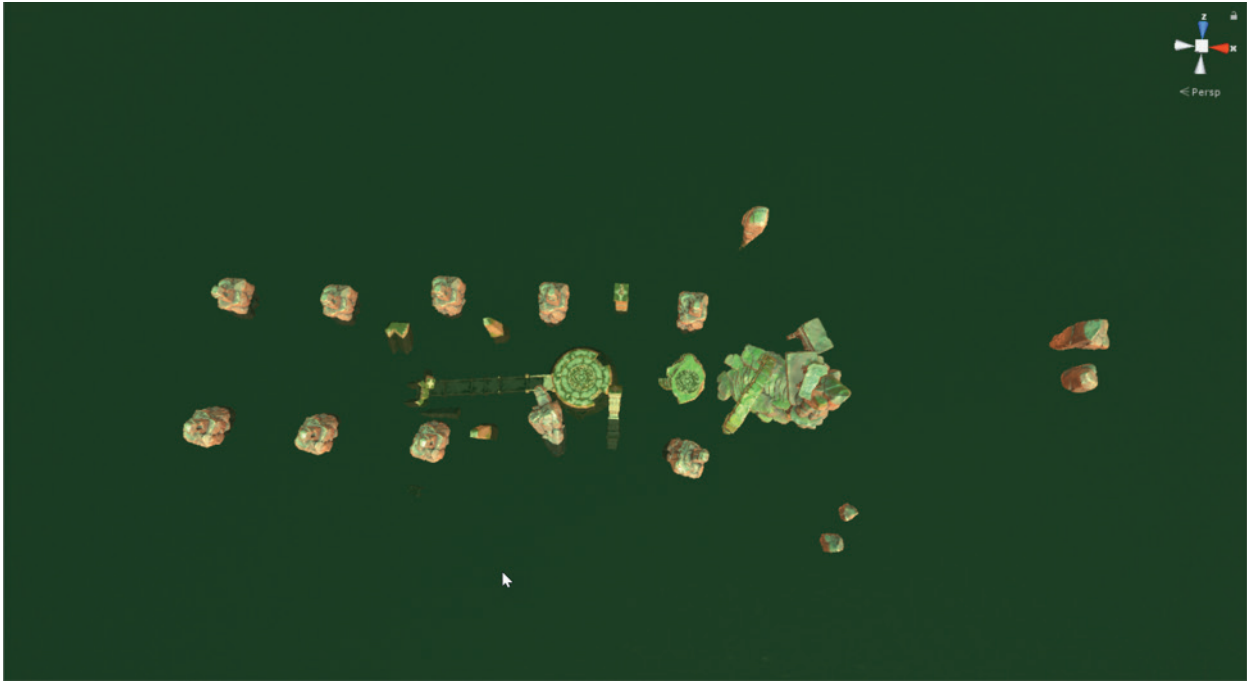
- ChomperAttack should be set to be called with Any State set to inAttackRange. It should transition to ChomperIdle when the animation is complete.

Opening Cutscene

The opening cutscene for the game shows the player flying into an isolated area of an alien planet. This area is home to a mysterious temple in the middle of a giant lake which stands in ruin. At the far end of the ruins is a huge doorway, rippling with an odd blue light. The player's ship coasts along the water and travels up the destroyed temple causeway before coming to land on the most solid ground nearest to the doorway. Here the cutscene ends and transitions to the starting level.



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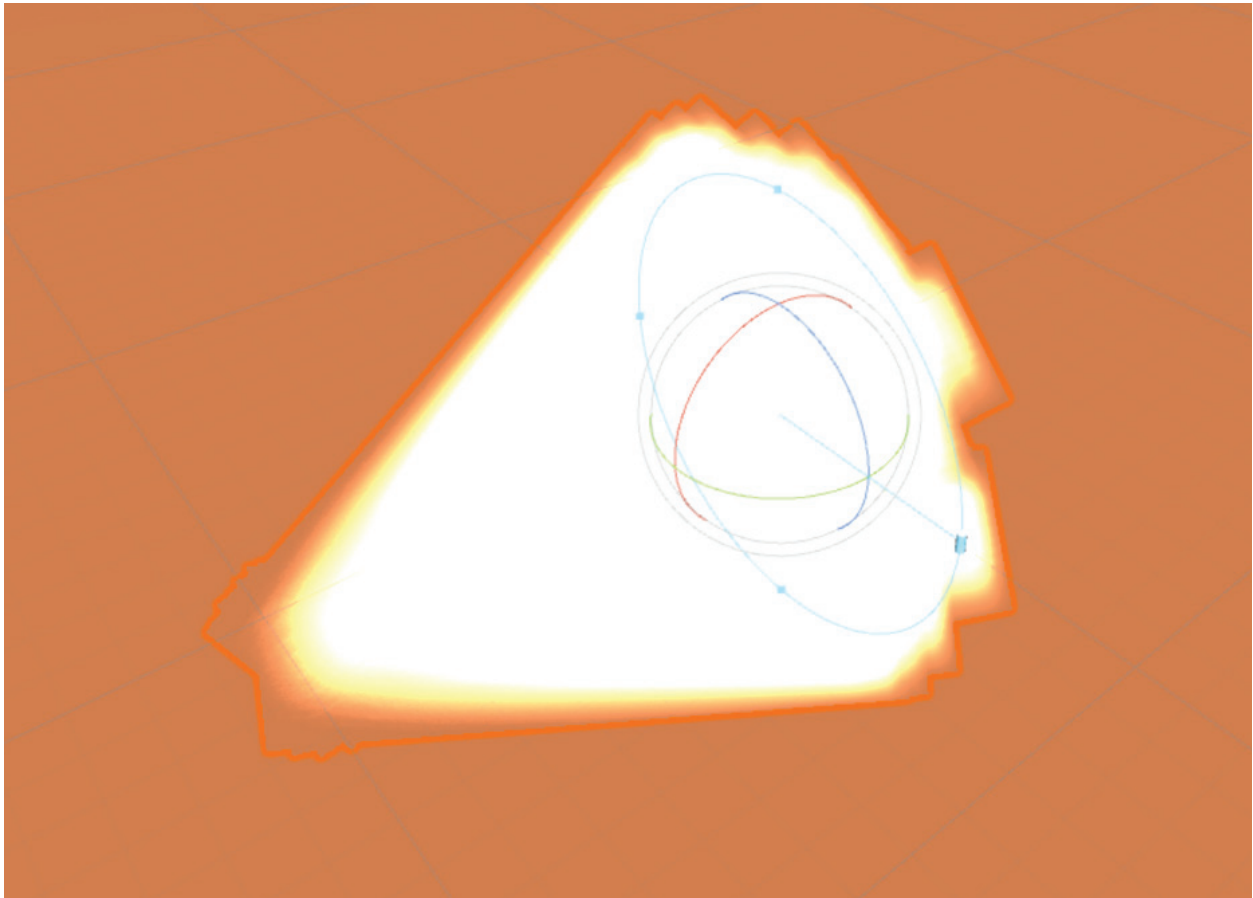


Flying Dropship Setup

LOD Distribution

LOD 0: 100%
LOD 1: 25%
LOD 2: 13%
LOD 3: 6%
Culled 1%

Flame Particle System



The flame particle system should be attached to each of the Dropship engines. It is a single particle system.

Particle System Base Settings:

Duration: 10

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Start Lifetime: 0.5
Start Speed: 0.1
Start Size: 0.3
Max Particles: 300

Emission:

Rate over time: 100

Shape:

Shape: Circle
Radius: 0.5
Radius Thickness: 0

Velocity Over Lifetime:

Z:0.2

Renderer:

Render Mode: Stretched Billboard
Length Scale: 4
Material: Dropship_Engine_Particle_01_Mat

Skip Button



A few seconds after the cutscene has begun, the above skip button should fade into view in the lower right hand corner of the screen. If the user clicks on the skip button, it will load the next level. This button should fade out in the last seconds of the cutscene, as the end of the cutscene should trigger the load of the next level as well.

The Chomper icon should animate in a simple walk sequence, and the font type should be set to Bangers SDF.

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The LoadLevel script will trigger the scene to change when it's added to a button's OnClick method or an event's method call. The script requires the name of the level to load, and this level must be present in the build settings.