COMP1150/MMCC1011 Game Design Task Report

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| **GitHub Repo (link):** | <https://github.com/COMP1150-24s1/comp1150-gdt-2024-clbmacq> |

# Instructions:

Look at the “**Element Descriptions Table**” at the end of this document (page 29). This describes the elements which you implement to get marks for in this assessment. Three (3) of these elements are **mandatory**, Indoor Environment, Outdoor Environment, and First-Person Controller. These three make up 50% of your claimable marks.

The rest of the elements listed (Element 04 - Element 19) are optional and worth 5% each. You can choose to implement **up to ten (10) optional elements** (as this will total the remaining 50% of your claimable marks).

Enter the elements you are claiming (have chosen to implement) into the **Claimed Elements Table** (page 3). **Note:** there are enough rows for you to claim the mandatory elements and up to ten (10) optional elements.

For each claimed element, you must **complete the corresponding entry in the section Scene Breakdown** (page 4). You will not receive marks for a feature that is not documented in your submitted report. Additionally, features will not receive marks if they cannot be easily located within your scene and hierarchy.

If you require more space to in a section to document an element, you can add extra tables in as needed (copy and paste provided ones to keep the structure). You do not need to go into too much detail in your descriptions, an example of a good level of detail has been provided for you in the sections **Scene Overview** (page 4) and **Element 01 – First-Person Controller** (page 4), as well as in the **example GDT Report** which you can find on iLearn.

You are allowed to import (add) 3rd party Texture assets (image files) or Music/SFX assets (audio files), so long as they comply with the **file type** **limits** and **size requirements** (see iLearn GDT assessment outline for details) **AND** you have a **license** to use them. Copyright violation is a breach of academic integrity and will be treated appropriately. You should add a subfolder called ‘**Licenses**’ and include a copy of the licenses for any imported 3rd party assets.

All 3rd party assets used in your scene (including those provided in the Standard Assets folder) should be referenced in the section **Assets Used** (page 27). Failure to have the necessary licenses (i.e., a copyright violation) or reference the 3rd party assets you use is a **breach of academic integrity** and will be treated appropriately.

Ensure your completed report is both saved in your assignment repository (on GitHub) **AND** submitted via the Game Design Task submission link on iLearn. Submission of this report via iLearn will notify the markers that your Game Design Task GitHub repository is ready to be marked, so only submit once you are happy for your repo to be marked.

If you intend to submit late, after the due date, but have already uploaded a report to iLearn, please email Kayson and Malcolm informing us of this. Otherwise, we will assume your uploaded report means you are ready to have your project marked and we will mark report and project at the state it was in at the time of the deadline.

# Claimed Elements Table

Complete the following table for the elements which you have implemented (from the **Element Descriptions Table** on page 29).

**NOTE:** Only claim up to **ten (10) optional elements** from the list. Doing more than 10 optional elements will not increase your mark. Elements will only be marked up to a max of 100% marks, and will be marked in order of the Element IDs (i.e., order in the **Element Descriptions Table** on page 29), so don't claim anything in your GDT Report that you don't want assessed!

| **Claimed Element ID** | **Claimed Element** | **Marks** |
| --- | --- | --- |
| 01 | First-Person Controller (mandatory) | N/A - Provided |
| 02 | Outdoor Environment (mandatory) | 25% |
| 03 | Indoor Environment (mandatory) | 25% |
| 04 | Indoor Textures | 5% |
| 05 | Height and Normal Maps | 5% |
| 08 | Direct Light Sources | 5% |
| 12 | Multiple Cameras | 5% |
| 13 | Audio Source | 5% |
| 15 | Global Post-Processing | 5% |
| 16 | Local Post-Processing | 5% |
| 17 | Single State Animation | 5% |
| 18 | Multiple State Animation | 5% |
| 19 | Particle Systems | 5% |
|  |  |  |
|  |  |  |
|  | **Total:** |  |

# Scene Breakdown

## Scene Overview

**Note:** This has been completed as an example. Please clear the entry and provide your own answers relevant to your scene.

|  |  |
| --- | --- |
| **Scene Overview (Example)** | |
| Scene Theme Aim: | Remote Active Volcano with nearby monitoring station. |
| Theme Summary / Goal / Targeted Player experience(s): | The player should be able to experience the rush of being in the vicinity of an erupting volcano, while also being able to explore an unfamiliar environment. |

## Element 01 – First-Person Controller

**Note:** This table has been completed as an example. Please clear the entry and provide your own answers relevant to your scene.

|  |  |
| --- | --- |
| **Element 01 – First-Person Controller (Example)** | |
| Claimed: | Yes – Mandatory – Provided |
| Placement within Scene: | On dirt path, between the helipad and the building, on the main island. |
| Name in Hierarchy: | Player |
| Location in Hierarchy: | Top-level |
| Purpose within scene: | The First-Person Controller is placed roughly in the center of the main island, between the building and the helipad, facing the erupting volcano. This way, the player understands the gravity of the virtual situation and knows what is important in the scene. |
| Screenshot: |  |

## Element 02 – Outdoor Environment

|  |  |
| --- | --- |
| **Element 02 – Outdoor Environment** | |
| Claimed: | Yes – Mandatory |
| Placement within Scene: | Mostly on the main island, along with the volcano and minor features on the two smaller islands |
| Name in Hierarchy: | OutdoorEnvironment |
| Location in Hierarchy: | Top-level |
| Purpose within scene: | The features such as the pier, helipad volcano, trees, and grass are included to provide the player with context/information about the game environment and scenario. |
| Screenshot: |  |

## Element 03 – Indoor Environment

|  |  |
| --- | --- |
| **Element 03 – Indoor Environment** | |
| Claimed: | Yes – Mandatory |
| Placement within Scene: | In the building on the main island |
| Name in Hierarchy: | Building |
| Location in Hierarchy: | Top-level |
| Purpose within scene: | The player can interact with the sliding door to enter this room, at which point they can see the volcano on the TV screen and understand that this building is a facility to monitor the volcano. |
| Screenshot: |  |

## Element 04 – Indoor Textures

|  |  |
| --- | --- |
| **Element 04 – Indoor Textures** | |
| Claimed: | Yes |
| Placement within Scene: | In the building |
| Name in Hierarchy: | Building |
| Location in Hierarchy: | Top-level |
| Purpose within scene: | Add complexity and realism to the scene by making the surfaces inside the building more realistic. |
| Screenshot: |  |

## Element 05 – Height & Normal Maps

|  |  |
| --- | --- |
| **Element 05 – Height & Normal Maps** | |
| Claimed: | Yes |
| Placement within Scene: | On the volcano and the wood textures of the building |
| Name in Hierarchy: | volcanoBody, Building/Outer Structure |
| Location in Hierarchy: | OutdoorEnvironment/volcano/volcano body  Building/Outer Structure/Roof etc. |
| Purpose within scene: | Provide realism and complexity to the volcano and building, two of the most important objects in the scene. |
| Screenshot: |  |

## Element 06 – Physics Objects

### Physics Object 1

|  |  |
| --- | --- |
| **Element 06 – Physics Objects – Physics Object 1** | |
| Claimed: | Yes / No (if ‘No’ then skip to next section) |
| Placement within Scene: |  |
| Name in Hierarchy: |  |
| Location in Hierarchy: |  |
| Purpose within scene: |  |
| Screenshot: |  |

### Physics Object 2

|  |  |
| --- | --- |
| **Element 06 – Physics Objects – Physics Object 2** | |
| Claimed: | No |
| Placement within Scene: |  |
| Name in Hierarchy: |  |
| Location in Hierarchy: |  |
| Purpose within scene: |  |
| Screenshot: |  |

## Element 07 – Physics with Joints

|  |  |
| --- | --- |
| **Element 07 – Physics with Joints** | |
| Claimed: | Yes / No (if ‘No’ then skip to next section) |
| Placement within Scene: |  |
| Name in Hierarchy: |  |
| Location in Hierarchy: |  |
| Purpose within scene: |  |
| Screenshot: |  |

## Element 08 – Direct Light Sources

### Direct Light Source 1

|  |  |
| --- | --- |
| **Element 08 – Direct Light Sources – Direct Light Source 1** | |
| Claimed: | Yes |
| Placement within Scene: | On the inside of the building |
| Name in Hierarchy: | indoor lamp |
| Location in Hierarchy: | Building/ |
| Purpose within scene: | Cast light across the textured surfaces of the building to accentuate the detail provided by the normal and height maps |
| Screenshot: |  |

### Direct Light Source 2

|  |  |
| --- | --- |
| **Element 08 – Direct Light Sources – Direct Light Source 2** | |
| Claimed: | Yes |
| Placement within Scene: | On the outside of the building |
| Name in Hierarchy: | outdoor lamp |
| Location in Hierarchy: | Building/outer structure |
| Purpose within scene: | Cast light across the textured surfaces of the building to accentuate the detail provided by the normal and height maps |
| Screenshot: |  |

## Element 09 – Baked Indirect Lighting

|  |  |
| --- | --- |
| **Element 09 – Baked Indirect Lighting** | |
| Claimed: | Yes / No (if ‘No’ then skip to next section) |
| Placement within Scene: |  |
| Name in Hierarchy: |  |
| Location in Hierarchy: |  |
| Purpose within scene: |  |
| Screenshot: |  |

## Element 10 – Light-Probes

|  |  |
| --- | --- |
| **Element 10 – Light-Probes** | |
| Claimed: | Yes / No (if ‘No’ then skip to next section) |
| Placement within Scene: |  |
| Name in Hierarchy: |  |
| Location in Hierarchy: |  |
| Purpose within scene: |  |
| Screenshot: |  |

## Element 11 – Reflection-Probes & Reflective Surfaces

|  |  |
| --- | --- |
| **Element 11 – Reflection-Probes & Reflective Surfaces** | |
| Claimed: | Yes / No (if ‘No’ then skip to next section) |
| Placement within Scene: |  |
| Name in Hierarchy: |  |
| Location in Hierarchy: |  |
| Purpose within scene: |  |
| Screenshot: |  |

## Element 12 – Multiple Cameras

### Camera 1

|  |  |
| --- | --- |
| **Element 12 – Multiple Cameras – Camera 1** | |
| Claimed: | Yes |
| Placement within Scene: | A camera located on the main island sends its view to the tv screen in the building, also on the main island |
| Name in Hierarchy: | Cam for TV/ TV Screen |
| Location in Hierarchy: | Building/ |
| Purpose within scene: | Accentuate the high octane nature of the volcano eruption and provide a sense of realism due to the complex nature of the moving screen. |
| Screenshot: |  |

### Camera 2

|  |  |
| --- | --- |
| **Element 12 – Multiple Cameras – Camera 2** | |
| Claimed: | Yes / No (if ‘No’ then skip to next section) |
| Placement within Scene: |  |
| Name in Hierarchy: |  |
| Location in Hierarchy: |  |
| Purpose within scene: |  |
| Screenshot: |  |

## Element 13 – Audio Source

|  |  |
| --- | --- |
| **Element 13 – Audio Source** | |
| Claimed: | Yes |
| Placement within Scene: | Center of main island  Mouth of volcano |
| Name in Hierarchy: | Waves audio  Volcano audio |
| Location in Hierarchy: | Top-level  Outdoorenvironment/volcano/volcanoBody |
| Purpose within scene: | To provide stimulation to more of the players senses and provide a sense of realism by utilizing constant audio stimulation. |
| Screenshot: |  |

## Element 14 – Audio Reverb Zones, Effects and Filters

### Audio Element 1

|  |  |
| --- | --- |
| **Element 14 – Audio Reverb Zones, Effects and Filters – Audio Element 1** | |
| Claimed: | Yes / No (if ‘No’ then skip to next section) |
| Placement within Scene: |  |
| Name in Hierarchy: |  |
| Location in Hierarchy: |  |
| Purpose within scene: |  |
| Screenshot: |  |

### Audio Element 2

|  |  |
| --- | --- |
| **Element 14 – Audio Reverb Zones, Effects and Filters – Audio Element 2** | |
| Claimed: | Yes / No (if ‘No’ then skip to next section) |
| Placement within Scene: |  |
| Name in Hierarchy: |  |
| Location in Hierarchy: |  |
| Purpose within scene: |  |
| Screenshot: |  |

## Element 15 – Global Post-Processing Effect

|  |  |
| --- | --- |
| **Element 15 – Global Post-Processing Effect** | |
| Claimed: | Yes |
| Placement within Scene: | Global |
| Name in Hierarchy: | PostProcessor |
| Location in Hierarchy: | Top-level |
| Purpose within scene: | Mimic the visuals of a real camera by using chromatic aberration and depth of field. |
| Screenshot: |  |

## Element 16 – Local Post-Processing Effect

|  |  |
| --- | --- |
| **Element 16 – Local Post-Processing Effect** | |
| Claimed: | Yes |
| Placement within Scene: | Under -3 on the y axis |
| Name in Hierarchy: | PostProcessor |
| Location in Hierarchy: | Top-level |
| Purpose within scene: | To make being underwater feel more real by using a blue colour filter and a small amount of lens distortion |
| Screenshot: |  |

## Element 17 – Single-State Animation

|  |  |
| --- | --- |
| **Element 17 – Single-State Animation** | |
| Claimed: | Yes |
| Placement within Scene: | Global effect (above main island) |
| Name in Hierarchy: | wind |
| Location in Hierarchy: | Outdoorenvironment/ |
| Purpose within scene: | The wind force and turbulence are animated to bring attention to the volcano eruption and how it is affecting the world it (specifically the trees in this case. |
| Screenshot: |  |

## Element 18 – Multi-State Animation

|  |  |
| --- | --- |
| **Element 18 – Multi-State Animation** | |
| Claimed: | Yes |
| Placement within Scene: | The entrance to the building on the main island. |
| Name in Hierarchy: | Trigger door |
| Location in Hierarchy: | Building/outer structure/frontWall |
| Purpose within scene: | The multi-state animation that affects the sliding door to the building based on the user’s location is used to provide interactivity to the player and allow them to affect the world around them, if in a small way. |
| Screenshot: |  |

## Element 19 – Particle System

|  |  |
| --- | --- |
| **Element 19 – Particle System** | |
| Claimed: | Yes |
| Placement within Scene: | 2x – in the mouth of the volcano |
| Name in Hierarchy: | Constant Particles  Projectile Particles |
| Location in Hierarchy: | Outdoorenvironment/volcano/ |
| Purpose within scene: | To provide the core purpose of this scene, the volcano eruption. The eruption in turn reveals to the player the purpose of the building and provides a sense of urgency. |
| Screenshot: |  |

# Assets Used

If you include **any** 3rd party assets in your scene (including the which were provided in the Standard Assets folder) then you **must** reference them appropriately below, including the file path of where they were found (for provided assets in the Standard Assets folder) or a web link (for any imported texture or music/sfx assets).

## Texture Assets Used

**Note:** This table has been completed as an example. Please clear the entry and provide your own answers relevant to your scene.

| **Usage** | **3rd Party Asset** | **Author** | **Path/Link** |
| --- | --- | --- | --- |
| Scene skybox | Brocco\_jp\_skybox.mat | Standard assets | Assets\Standard Assets\THIRD PARTY ASSETS\Textures |
| Grass(billboard) | Grass01.tga | Standard assets | Assets\Standard Assets\THIRD PARTY ASSETS\Textures |
| Grass(billboard) | grassFlower08 | Standard assets | Assets\Standard Assets\THIRD PARTY ASSETS\Textures |
| Grass terrain layer | Grass\_a\_terrainLayer.terrainlayer | Standard assets | Assets\Standard Assets\TerrainSampleAssets\TerrainLayers |
| Sand terrain layer | Sand\_terrainLayer.terrainlayer | Standard assets | Assets\Standard Assets\TerrainSampleAssets\TerrainLayers |
| Soil/rocky terrain layer | Soil\_rocks\_terrainLayer.terrainlayer | Standard assets | Assets\Standard Assets\TerrainSampleAssets\TerrainLayers |
| Dirt path terrain layer | Heather\_terrainLayer.terrainlayer | Standard assets | Assets\Standard Assets\TerrainSampleAssets\TerrainLayers |
| Wood texture (for building) albedo | WoodRough\_AL.tif | Adam Bieleki | <https://assetstore.unity.com/packages/2d/textures-materials/pbr-materials-wood-metal-50290> |
| Wood texture (for building) normal map | WoodRough\_N.tif | Adam Bieleki | <https://assetstore.unity.com/packages/2d/textures-materials/pbr-materials-wood-metal-50290> |
| Wood texture (for building) height map | WoodRough\_H.tif | Adam Bieleki | <https://assetstore.unity.com/packages/2d/textures-materials/pbr-materials-wood-metal-50290> |
| Wood texture (for pier) albedo | WoodPlanksFloors1\_AL.tif | Adam Bieleki | <https://assetstore.unity.com/packages/2d/textures-materials/pbr-materials-wood-metal-50290> |
| Wood texture (for pier) normal map | WoodPlanksFloors1\_N.tif | Adam Bieleki | <https://assetstore.unity.com/packages/2d/textures-materials/pbr-materials-wood-metal-50290> |
| Wood texture (for pier) height map | WoodPlanksFloors1\_H | Adam Bieleki | <https://assetstore.unity.com/packages/2d/textures-materials/pbr-materials-wood-metal-50290> |
| Volcano material – ambient occlusion map | Rocky\_04\_Ambient\_Occlusion.tga | John’s Junkyard Assets | <https://assetstore.unity.com/packages/2d/textures-materials/floors/pbr-ground-materials-2-dirt-grass-rocky-89369> |
| Volcano material – albedo | Rocky\_04\_Diffuse.tga | John’s Junkyard Assets | <https://assetstore.unity.com/packages/2d/textures-materials/floors/pbr-ground-materials-2-dirt-grass-rocky-89369> |
| Volcano material –height map | Rocky\_04\_Height.tga | John’s Junkyard Assets | <https://assetstore.unity.com/packages/2d/textures-materials/floors/pbr-ground-materials-2-dirt-grass-rocky-89369> |
| Volcano material – normal map | Rocky\_04\_Normal.tga | John’s Junkyard Assets | <https://assetstore.unity.com/packages/2d/textures-materials/floors/pbr-ground-materials-2-dirt-grass-rocky-89369> |
| Volcano material – specular map | Rocky\_04\_Specular.tga | John’s Junkyard Assets | <https://assetstore.unity.com/packages/2d/textures-materials/floors/pbr-ground-materials-2-dirt-grass-rocky-89369> |

## Music/SFX Assets Used

**Note:** This table has been completed as an example. Please clear the entry and provide your own answers relevant to your scene.

| **Usage** | **3rd Party Asset** | **Author** | **Path/Link** |
| --- | --- | --- | --- |
| Volcano sound | Earth-01-17687.mp3 | pixabay | <https://pixabay.com/sound-effects/earth-01-17687/> |
| Waves sound | Ocean-waves-white-noise1-13752.mp3 | Kaydream321 | <https://pixabay.com/sound-effects/ocean-waves-white-noise1-13752/> |
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## Models Assets Used

**Note:** This table has been completed as an example. Please clear the entry and provide your own answers relevant to your scene.

| **Usage** | **3rd Party Asset** | **Author** | **Path** |
| --- | --- | --- | --- |
| Palm Trees | Palm\_desktop.spm SpeedTree Palm | Speedtree – standard assets | Assets/standard assets/THIRD PARTY ASSETS/models/palm |
| Shrubs | Shrub variant.prefab | polygonTrees – standard assets | Assets/standard assets/polygonTrees/prefabs/ |
| Light grey rocks | Rock variant.prefab | polygonTrees – standard assets | Assets/standard assets/polygonTrees/prefabs/rocks |
| Black rocks | blackRock variant.prefab | polygonTrees – standard assets | Assets/standard assets/polygonTrees/prefabs/rocks |
| Water | Water4advanced.prefab | ilearn environment kit | Assets\iLearn Environment Kit\Water\Water\_Simulated\Prefabs |
|  |  |  |  |
|  |  |  |  |

## Script Assets Used

**Note:** This table has been completed as an example. Please clear the entry and provide your own answers relevant to your scene.

| **Usage** | **3rd Party Asset** | **Author** | **Path** |
| --- | --- | --- | --- |
| Interactive sliding door | TriggerToAnim interactivity script | Provided Standard Assets | Assets/Standard Assets/Interactivity/ TriggerToAnim.cs |
| Ocean water in scene | Water base (script) | Provided Standard Assets | Assets\iLearn Environment Kit\Water\Water\_FlatTransparent\Scripts |
| Ocean water in scene | Specular lighting (script) | Provided Standard Assets | Assets\iLearn Environment Kit\Water\Water\_FlatTransparent\Scripts |
| Ocean water in scene | Planar Reflection (Script) | Provided Standard Assets | Assets\iLearn Environment Kit\Water\Water\_FlatTransparent\Scripts |
| Ocean water in scene | Gerstner Displace (script) | Provided Standard Assets | Assets\iLearn Environment Kit\Water\Water\_FlatTransparent\Scripts |
|  |  |  |  |
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## Other Assets Used

| **Usage** | **3rd Party Asset** | **Author** | **Path** |
| --- | --- | --- | --- |
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# Element Descriptions Table

| **Element ID** | **Element** | **Description** | **Skill Group** | **Week Covered** | **Marks** | **Optional?** |
| --- | --- | --- | --- | --- | --- | --- |
| 01 | First-Person Controller | A **First-Person Controller** for the player to navigate the scene with. | Navigation | Week 06 | N/A – Provided | Mandatory |
| 02 | Outdoor Environment | An **outdoor** section built using the Terrain editor (and dressed/painted appropriately with terrain elements). | Terrain | Week 07 | 25% | Mandatory |
| 03 | Indoor Environment | A dressed/furnished **indoor** section constructed using [ProBuilder](https://unity-technologies.github.io/procore-legacy-docs/probuilder/probuilder2-gh-pages/) and/or Unity primitives (cubes, spheres, etc). | Primitives & ProBuilder | Week 06 Week 08 | 25% | Mandatory |
| 04 | Indoor Textures | Appropriate [textures](https://docs.unity3d.com/Manual/Textures.html) applied to the indoor environment of your scene.  **NOTE:** Cannot be claimed if **Element 03** (Indoor Environment) has not been implemented/claimed. | Meshes & Textures | Week 06 | 5% | Optional |
| 05 | Height & Normal Maps | [Height maps and normal maps](https://docs.unity3d.com/Manual/StandardShaderMaterialParameterNormalMap.html) have been applied appropriately to the textures of the indoor environment in your scene. **NOTE:** Cannot be claimed if **Element 04** (Indoor Textures) has not been implemented/claimed. | Meshes & Textures | Week 06 | 5% | Optional |
| 06 | Physics Objects | At least two (2) objects which demonstrate [physics](https://docs.unity3d.com/Manual/PhysicsSection.html). | Physics | Week 03 Week 05 Week 12 | 5% | Optional |
| 07 | Physics with Joints | At least one (1) object which uses a physics system with [joints](https://docs.unity3d.com/Manual/Joints.html). **NOTE:** Cannot be claimed if **Element 06** (Physics Objects) has not been implemented/claimed. | Physics | Week 03 Week 05 Week 12 | 5% | Optional |
| 08 | Direct Light Sources | Minimum two (2) direct [light sources](https://docs.unity3d.com/Manual/LightSources.html). Does not include the default Directional Light provided in the scene. | Lighting | Week 10 | 5% | Optional |
| 09 | Baked Indirect Lighting | [Baked indirect lighting](https://docs.unity3d.com/Manual/LightMode-Baked.html) used in the indoor section of your scene. **NOTE:** Cannot be claimed if **Element 08** (Direct Light Sources) has not been implemented/claimed. | Lighting | Week 10 | 5% | Optional |
| 10 | Light-Probes | Use of [light-probes](https://docs.unity3d.com/Manual/LightProbes.html) for dynamic indirect lighting. **NOTE:** Cannot be claimed if **Element 09** (Baked Indirect Lighting) has not been implemented/claimed. | Lighting | Week 10 | 5% | Optional |
| 11 | Reflection-Probes & Reflective Surfaces | Appropriate use of [reflection-probes](https://docs.unity3d.com/Manual/ReflectionProbes.html) and reflective surfaces in outdoor environment of your scene. | Lighting | Week 10 | 5% | Optional |
| 12 | Multiple Cameras | Use of [multiple cameras](https://docs.unity3d.com/Manual/CamerasOverview.html) (at least two (2) excluding the provided First-Person Controller camera). For example, overlaid cameras or rendering to a texture. | Cameras & Rendering | Week 09 | 5% | Optional |
| 13 | Audio Source | At least one (1) appropriate 3D spatialised [audio source](https://docs.unity3d.com/Manual/AudioOverview.html) within your scene. | Sound | Week 03 | 5% | Optional |
| 14 | Audio Reverb Zones, Effects and Filters | Use of at least two (2) of the following within your scene: • [Audio reverb zones](https://docs.unity3d.com/Manual/class-AudioReverbZone.html) • [Audio effects](https://docs.unity3d.com/Manual/class-AudioEffectMixer.html) • [Audio filters](https://docs.unity3d.com/Manual/class-AudioEffect.html) | Sound | Week 03 | 5% | Optional |
| 15 | Global Post-Processing Effect | An appropriately chosen [post-processing effect](https://docs.unity3d.com/2022.3/Documentation/Manual/PostProcessingOverview.html) for your scene using a global [volume](https://docs.unity3d.com/Packages/com.unity.postprocessing@3.0/manual/Quick-start.html#:~:text=Custom%20Effects.-,Post%20Process%20Volume,-The%20Post%2Dprocess). | Cameras & Rendering | Week 09 | 5% | Optional |
| 16 | Local Post-Processing Effect | An appropriately chosen [post-processing effect](https://docs.unity3d.com/2022.3/Documentation/Manual/PostProcessingOverview.html) for your scene using a local (trigger) [volume](https://docs.unity3d.com/Packages/com.unity.postprocessing@3.0/manual/Quick-start.html#:~:text=Custom%20Effects.-,Post%20Process%20Volume,-The%20Post%2Dprocess). | Cameras & Rendering | Week 09 | 5% | Optional |
| 17 | Single-State Animation | A simple single-state [animation clip](https://mqoutlook.sharepoint.com/teams/teamsites/Games-Teaching/Shared%20Documents/Units/COMP1150%20Introduction%20to%20Videogames/24s1/Assessment/Game%20Design/animation%20clip). | Animation | Week 04 Week 06 | 5% | Optional |
| 18 | Multi-State Animation | A [multi-state animation](https://docs.unity3d.com/Manual/AnimationStateMachines.html) that responds to trigger or mouse events. | Animation & Interactivity | Week 12 | 5% | Optional |
| 19 | Particle System | At least one (1) [particle system](https://docs.unity3d.com/Manual/ParticleSystems.html) appropriately placed within your scene. | Particle Systems | Week 11 | 5% | Optional |