### **Testing & Validation**

*Project Name:* Dark Fantasy Armoury 3D Scene   
*Student Name:* Sion Scognamillo P272942  
*Supervisor: Artur Machura*

Your testing and validation strategy will depend on your project.

**1. Testing Strategy**

My testing strategy to ensure quality for a 3D scene requires stages of gaining knowledge and checking that it has been correctly applied during development, this can include things like references for the objects you are creating to ensure accuracy of scale, realism, and historical accuracy.

During the development stage I created my assets with an optimized poly-count driven mindset and using the Blender smart UV project for quick and effective UV unwrapping, and once the assets with materials developed, several sprint cycles of self-reflection, peer review, and presentations of the development process.

This process of repetitive review after collecting the required information for asset creation lends itself well to the sprint cycles of AGILE development and helps ensure high quality, consistent and adaptable development.

**2. Test Cases and Findings**

Some examples of findings from tests during the development stage are: The tip of spear blade weapon misalignment due to a modelling error, the scene’s building topology went through several prototypes to find the right balance between detail and low vert count, feedback during presentations from my peers and supervisor prompt asset and scene improvements.

As the project developed, and the number of objects, vertices and materials grew, it increased the memory requirement to smoothly render and display the scene in the viewport. I experienced lagging and frame rate drops approximately down to 10fps, this highlighted that managing object count is vital to keeping the Blender software running smoothly to prevent lag and freezes, the same is true for other high memory demand features like lighting and flames and as such I reduced the memory demand by combining objects, reducing poly count by improving topology and scaled down my scene in blender so that I could lower the number of lights and their wattage, these adjustments allowed the scene to render more efficiently.

In addition, the render tests I conduct ensure that the render result is as expected, showing features like lighting and particle systems correctly, and highlights issues which are crucial for ensuring the desired render image result and provides ample time to adjust render settings.

The flame render test results were particularly vital as the flames appear differently from the viewport and a rendered image. The flame effects went through approximately 5 stages of prototyping before I successfully had the rendered result I wanted.

**3. Future Testing and Validation**

Moving forward, I would focus my attention on a sprint of materials inspection and improvement with the aim of playing further into the fantasy theme. Other topics that would improve the scene would be improved scenery for rendering back drop view as it is currently basic as my attention was majorly invested on the interior. Another development topic goal would be to ensure quad-based topology for the armour highlight assets and aim for vert count reduction.

**4. QA**

Made in Blender 4.4 for access to the latest version and functions, Any Blender 4.X version can view the project, Physical device requirements are a PC with enough memory to operate a large Blender file, keyboard, mouse, and basic knowledge of navigating Blender.