

### Intro to Computer graphics Final Practical README

In this Unity project, the game chosen is the odd number one, creating Wario Land 3 in Unity 6.2 3D. The following shaders implemented are the Stencil, Toon, water, and polygon surface deformation shaders. The wario model is made and textured by me (my GDW character model)

- Second half shader, Water shader: The water shader is done in shader lab code, and it is applied to the water plane object in the scene. To create this type of water I changed the tint in the Base Colour property to match with the reference image, to get the number of waves I changed the value on the frequency, speed and amplitude. I noticed that in the screenshot of the game there are these little triangle points that look like water waves in retro games.
- First half shader, Toon Shader: The Toon shader is done in a shader graph, and it is applied to the player model called "Wario" and the enemy capsule in the scene. To create this type of effect I added a custom toon ramp with large spaces for the gradients. To create the outline of the object I changed the game's light source rotation to fit with the sample.
- Stencil: The Stencil shader is added to the Donut stencil object in the scene and it's applied to make the hole see through for the donut just like real life donuts.
- Polygon Surface Deformation: This shader is implemented to the background wall where all the mountains are behind Wario scroll or move according to Wario position, by adding a stone texture and by messing with the scales X and Y I was able to match it with the sample screenshot.

Stencil Diagram:

