Asset Documentation

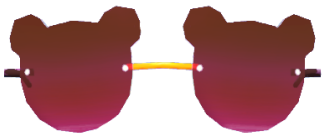
Asset Development & Documentation Writing by: **Saad “Bunssar” Abounasr**

Section I: Asset Overview

1. Overview:

“Shades” is a free accessory, made to be compatible with Matthew (my other asset), but can easily fit most stylized characters.This is, frankly, just a single, non animated model with a shader, so there’s not much to say about it, but i’m going to elaborate on the shader in case someone needs it.

N.B: All scripts in this asset are NOT meant for use by you, they’re just demo scripts included to help showcase the asset. For this reason, they will not be documented.

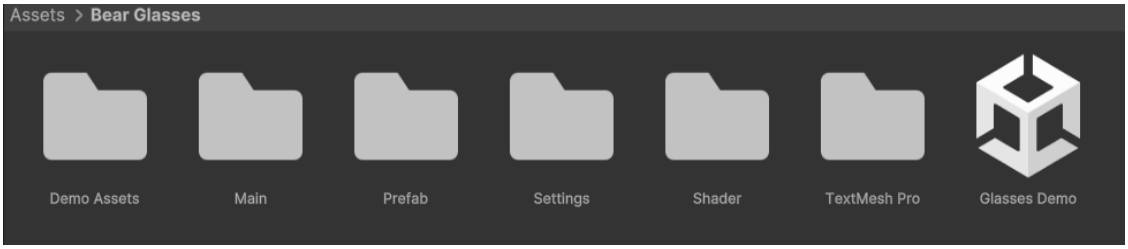


Render of the shades

2. Quick Start:

Once you import the asset, you’ll be met with a folder named “Bear Glasses”. This folder contains a set of subfolders, each containing a different category of files.

- **Demo Assets:** This folder contains bonus assets used to build the demo scenes. Things like showcase scripts, demo structures, and materials.
- **Main:** Here, you'll find the model of the shades, their materials, and their textures.
- **Prefab**: Within here is a ready-to-use prefab of the shades.
- **Shader**: Contains the Inkjet3D shader.
- **Settings:** The post processing profile and URP asset are in here.
- **TextMesh Pro:** To handle text rendering. It's an official Unity package.



The main folder

Section II: The Inkjet3D Shader

1. Quick Start:

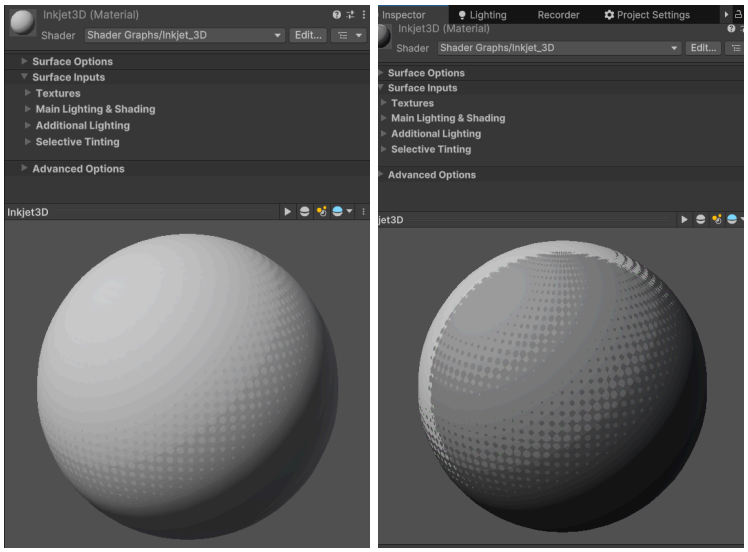
Stylization is easier than ever now with the Inkjet3D shader, a versatile, easily modifiable solution for realtime toon 3D shading.

To start using Inkjet3D, simply navigate to "Bear Glasses>Shader", right click the "Inkjet3D" shadergraph, and choose "Create>Material". This will create a new material with the shader, it comes already configured, so you can just drag and drop the material onto any mesh renderer and it will work right away.

Note: To maintain a certain degree of detail, and to also enable support for things like smoothness, metallic, and reflections, the Inkjet3D shader overlays the stylized shading over the existing one of the "Lit" shader. For best results, I recommend setting the ambient color in the lighting settings to a brighter color.

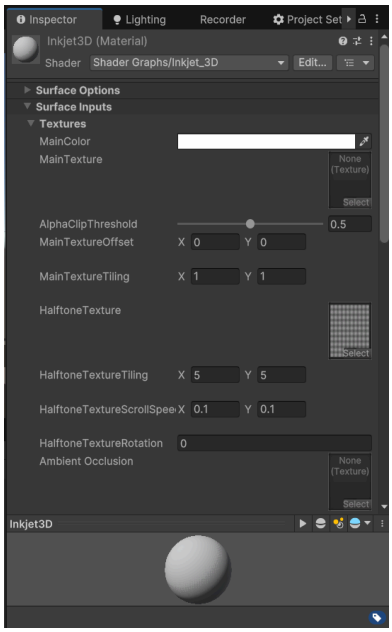
2. Configuring The Shader:

Inkjet3D is made to be customizable, there are plenty of variables to tweak, let's dive into what each one does.



1. **Textures:**
    - MainColor: This is the main tint that will be applied to the material, or the MainTexture if it is assigned.
    - MainTexture: The main texture of the material.
    - AlphaClipThreshold: The clipping threshold for the MainTexture if it includes transparency.
    - MainTextureOffset: Offsets the main texture by the X & Y coordinates.
    - MainTextureTiling: Sets the tiling of the texture to a X*Y grid.
    - HalftoneTexture: The pattern used for shading. This **MUST** be a monochrome, blurred pattern (reasoning available later on in the documentation).
    - HalftoneTextureTiling: Sets the tiling of the texture to a X*Y grid.
    - HalftoneTextureScrollSpeed: The scrolling rate of the shading texture. Adds a dynamic aspect to the shader. Set both components to 0 to disable.

- HalftoneTextureRotation: Rotation of the shading texture in degrees.
- AmbientOcclusion: Texture to use for AO.



Texture section

2. **Main Lighting & Shading:**
   - Smoothness: Reflectivity of the material.
   - Metallic: Metallic-ness of the material.
   - Emission: Emission color, useful to create a glowing material.
   - HalftoneShadingEdge: Controls the edge of the halftone shading.
   - HalftoneGradientSmoothness: Smoothens the halftone shading. (higher value results in a longer gradient)
   - AmbientLightStrength: Strength of ambient lighting. (0 means pitch black shadows)
   - SpecularReflectionStrength: Strength of the specular highlight.
   - SpecularReflectionGradientSmoothness: Smoothens the specular reflection. (higher value results in a longer gradient)

- SpecularReflectionEdge: Controls the edge of the specular highlight.
- AuxiliaryShadingStrength: Strength of the auxiliary shading. (the posterized bands of shading)
- AuxiliaryShadingSteps: Number of bands the auxiliary shading has. (higher value results in more bands in the gradient)
- RimLightGradientSmoothness: Smoothens the rim light (higher value results in a smoother rim light)
- RimLightEdge: Controls the edge of the rim light.
- RimLightStrength: Strength of the rim light.

Main lighting & shading section

3. **Additional Lighting:**
   - AdditionalLightGradientSmoothness: Smoothens the additional light's shading.
   - AdditionalLightAttenuationStrength: Determines the attenuation of the additional light. (lower value means the light fades out faster with distance)
   - AdditionalLightEdge: Controls the edge of the additional light.
   - AdditionalLightStrength: Strength of the additional light.

Additional lighting section

4. **Selective Tinting:**
   - Enabled: Whether Selective Tinting is enabled or not.

- SecondaryColorMask: Mask used for Selective Tinting. White areas in the mask get colored with SecondaryColor, black areas aren't affected at all. Shades of gray dictate influence. (closer to white means more influence)

- SecondaryColor: The color used to tint the areas marked with SecondaryColorMask.

Selective tinting section

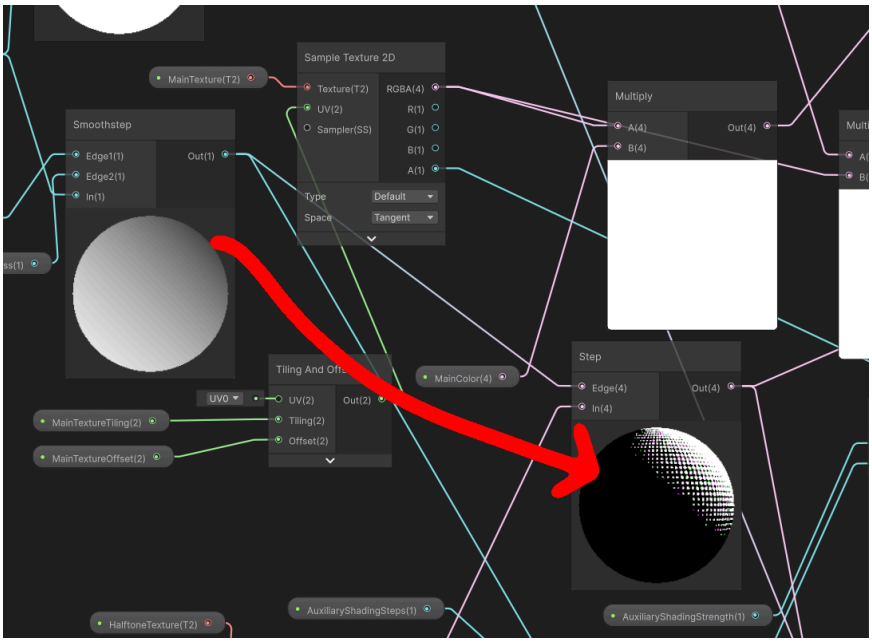
3. Behind The Scenes (Custom Shading Patterns):

You can make custom shading patterns for Inkjet3D if the included dots, lines, and ripples are not enough. A custom shading pattern should follow these criteria:

- It should be monochrome. (black, white, and shades of gray)
- It should be blurred.
- Preferably seamless and tiles well.

• Why a blurred monochrome texture?

Inkjet3D sets a threshold for the value of the shading texture, essentially forcing every pixel to be either black or white, rounding the gray values up or down. Whether a pixel is rounded to black or white depends on the dot product calculation of the lighting. If a pixel is on a face that points towards the light source, then the rounding will be aggressive to 0, making the pattern invisible in the brightest areas, and the opposite occurs for when a face points away from the light source; the rounding is aggressive to 1, making the pattern fully solid in the darkest areas. The areas in between will essentially have either a higher or a lower pattern density depending on the normal of the face in question.



Instance of the process in shadergraph

Section III: FAQ (Important Notes)

This section includes frequently asked questions and some very important notes on using the asset. I highly recommend reading it as it clears confusion in many aspects of the package.

- **Q: Does Inkjet3D support additional lights?**

  A: Yes, Inkjet3D supports 1 additional light alongside the main light.

- **Q: Is this asset compatible with all render pipelines?**

  A: No, this asset was made in URP and is only compatible with URP.

- **Q: Do I have to credit you when using this asset?**

  A: No, you can use it without giving me credit. It is, however, greatly appreciated.

- **Q: How can I contact you?**

  A: I’m active on Instagram (@bun.ssar) and on Discord (bunssar). You can contact me if you have questions about the asset, or if you simply want to chat with me.

And Finally…

I hope this documentation was of help to you. I’d love to see what you create with Shades, so let’s start a hashtag. Post your creations on Instagram with the hashtag #BunssarShades and tag me (@bun.ssar). Have fun!