

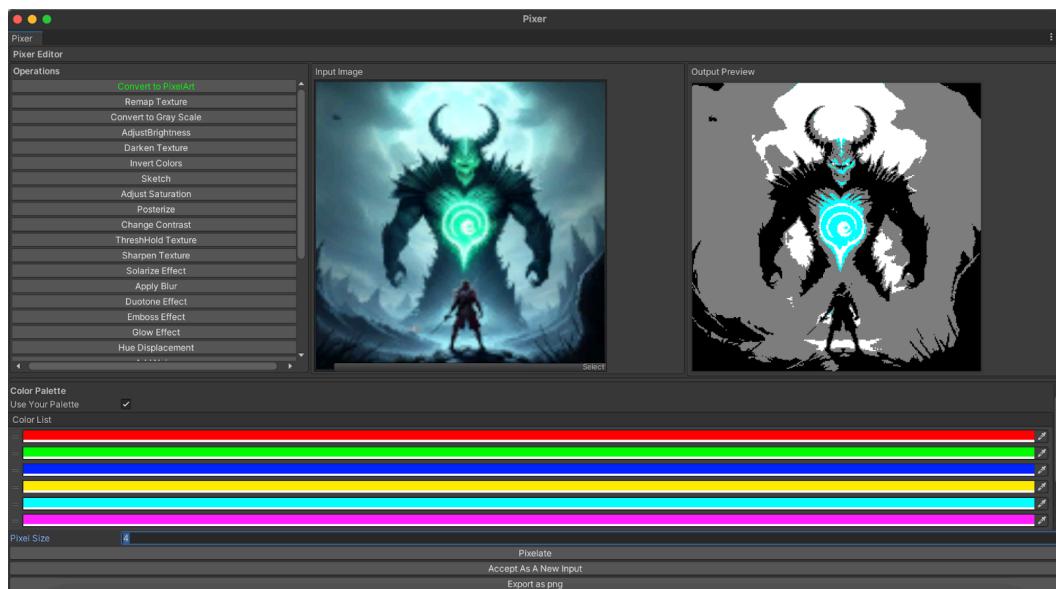
# Pixel Magic - Image Enhancer

## SUMMARY :

Pixer Magic Editor tool provides a comprehensive set of features for performing various image manipulation tasks, including color palette generation, alpha channel adjustment, texture blending, edge smoothing, outline effects, gradient generation, , texture resizing , etc... . These functionalities can be valuable for enhancing visual elements and creating custom textures within Unity projects.

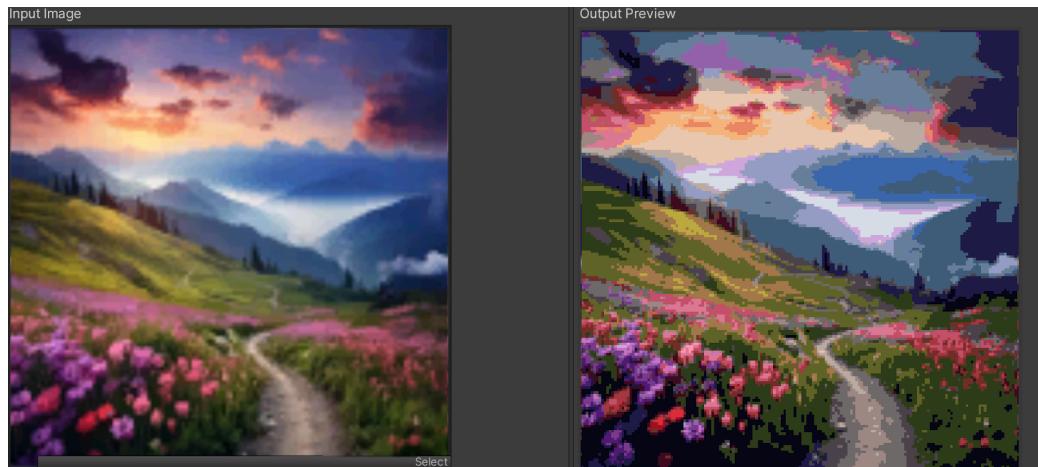
## Usage :

- Select Window => Pixel Image Editor tab. maximize window and select operation you want.
- select your input image and be sure read write enabled.
- Enhance your images and save them as a png file.

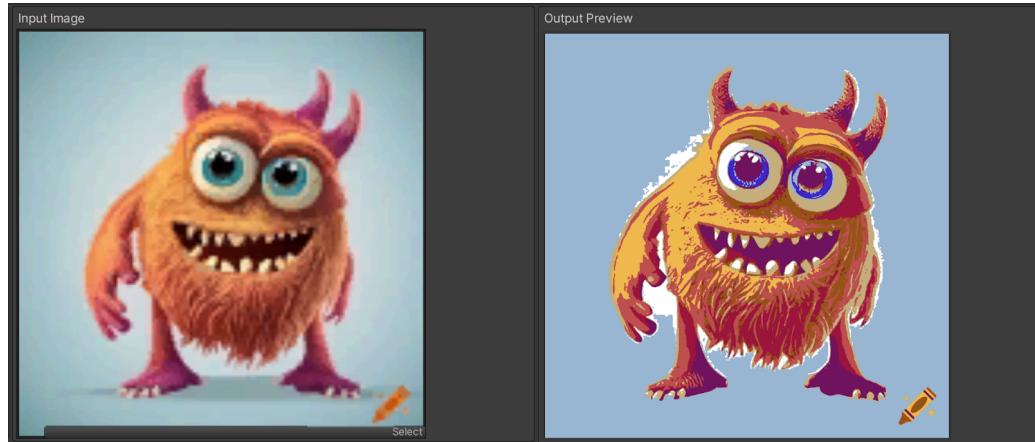


## Operations Included :

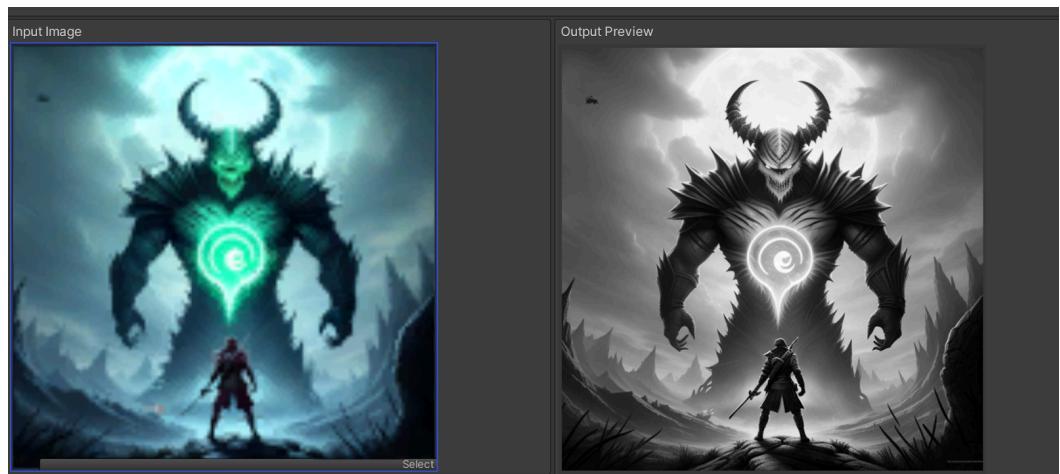
1. **Convert to pixel art :** It takes input image , reads its pixel colors and finds closest color from selected color palette , creates new pixel which has founded color at output texture.



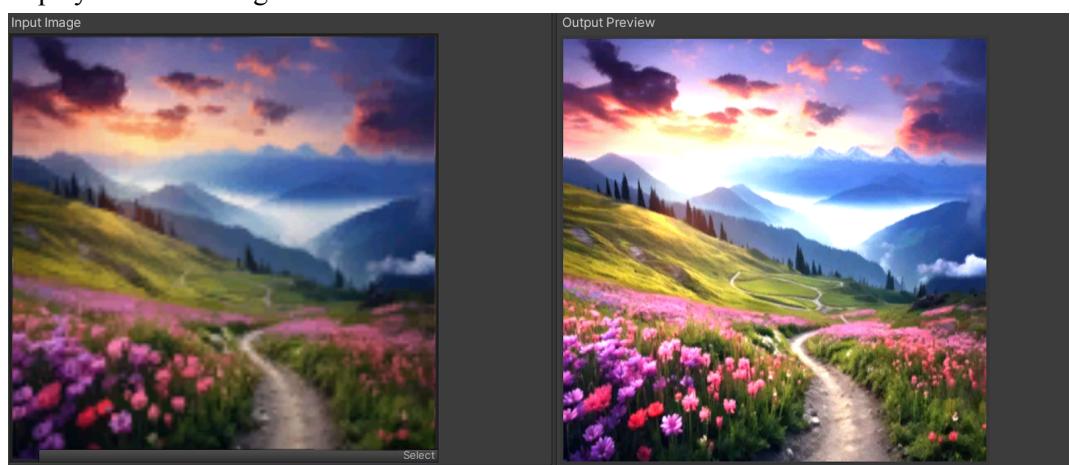
2. **Remapping** :It reads input image pixels and changes pixels comparing to selected color palette.



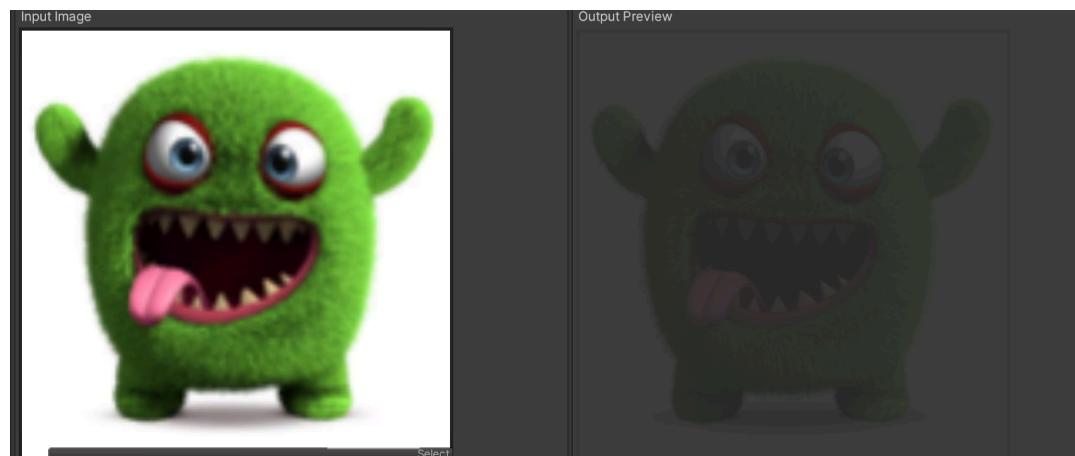
3. **GrayScale Transformation** : Converts Readed pixels to gray scale colors .



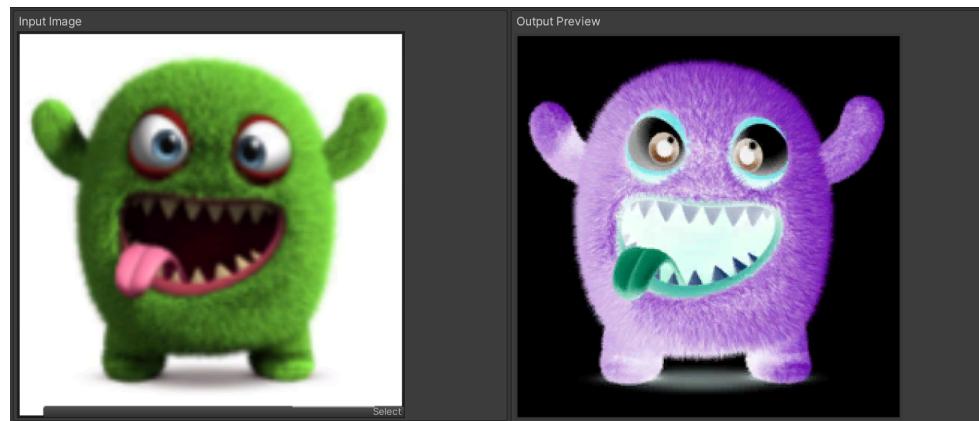
4. **Brightness Adjustment** :Process of altering the luminance level of an image or display to make it brighter or darker.



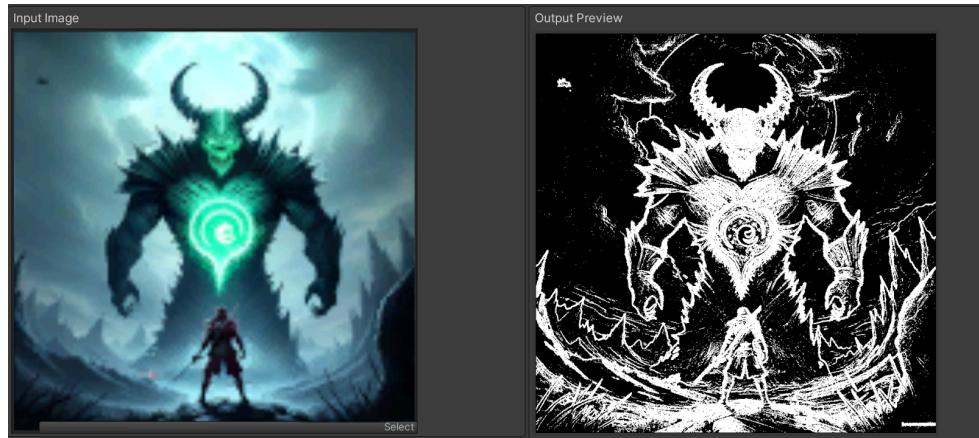
- 5. Darken Image:** Process of reducing the luminance level of an image or display to make it darker.



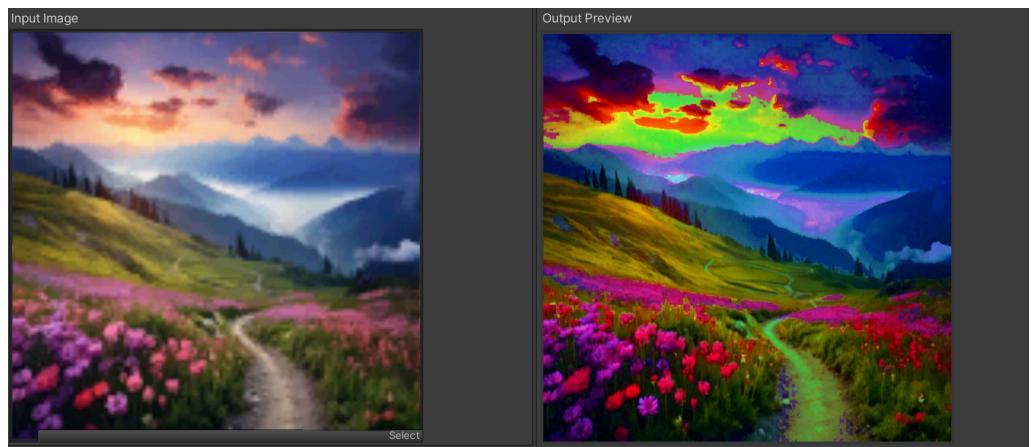
- 6. Invert Colors :**It refers to a process where the colors of an image or display are reversed. In other words, each color channel (e.g., red, green, blue) is replaced with its complementary color.



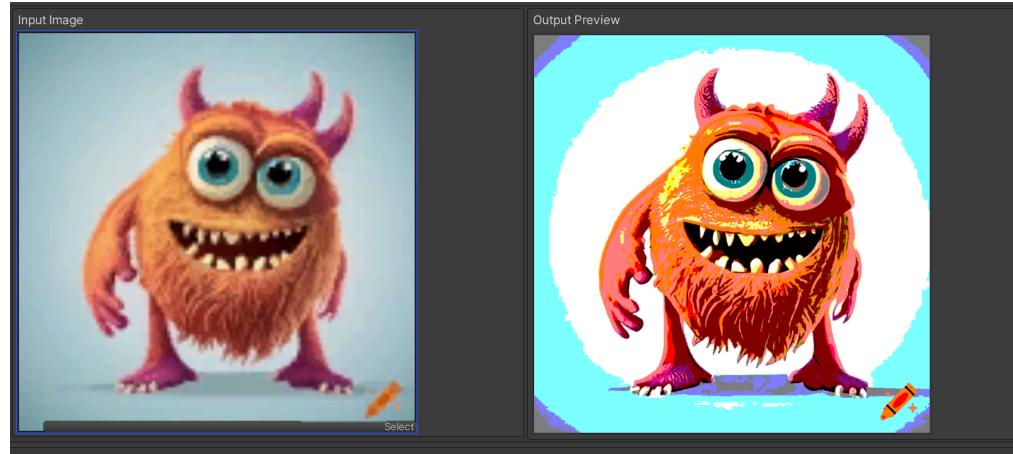
- 7. Sketch Image :**It contains the SobelEdgeDetection method, which performs edge detection using the Sobel operator. It calculates the gradient in both the x and y directions for each pixel and then computes the magnitude of the gradient. The magnitude represents the strength of the edge at that pixel. The result is stored in an output texture where each pixel's color represents the magnitude of the edge at that location.



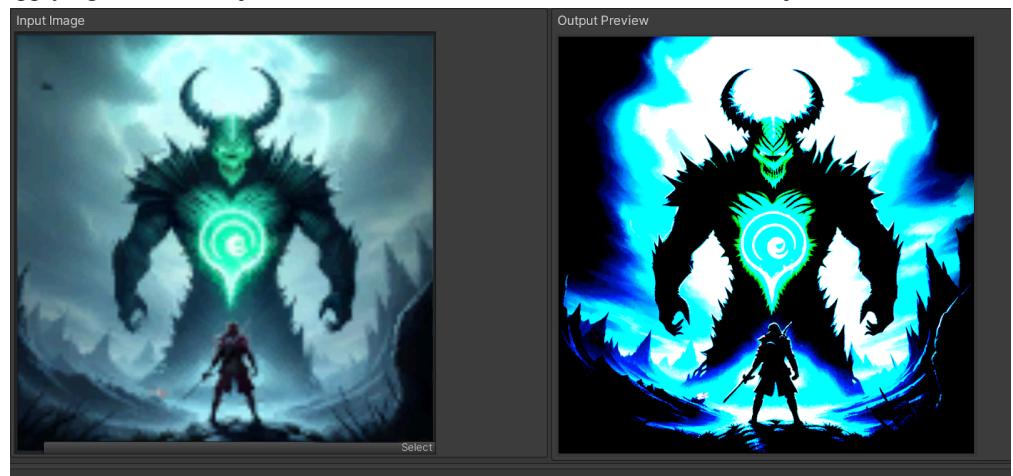
- 8. Adjust Saturation :**It applies a saturation adjustment to each pixel in the input texture by converting the colors to HSV space, adjusting the saturation, and then converting them back to RGB space. This allows for fine-tuning the saturation while preserving the overall color balance.



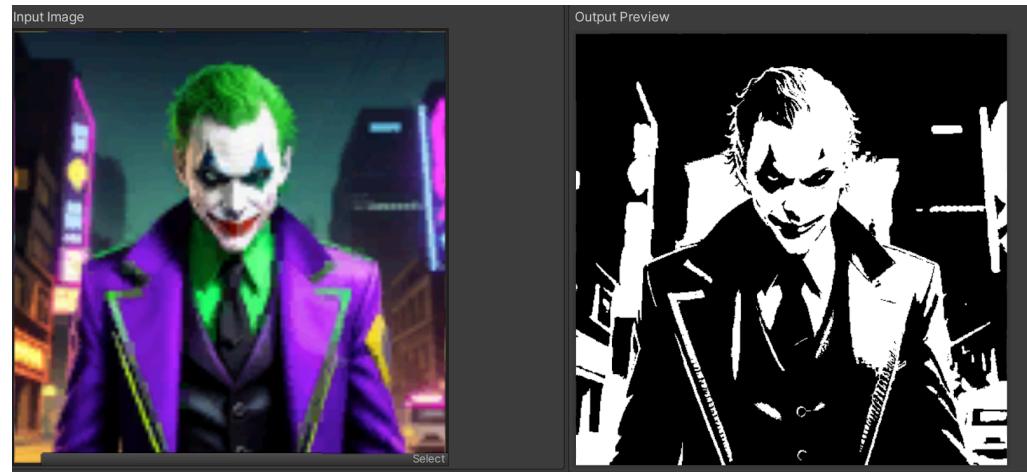
- 9. Posterize Effect:** This effect reduces the number of color variations in the image, leading to a stylized, "posterized" appearance. The parameter levels determines the intensity of the effect, with higher values resulting in more pronounced posterization.



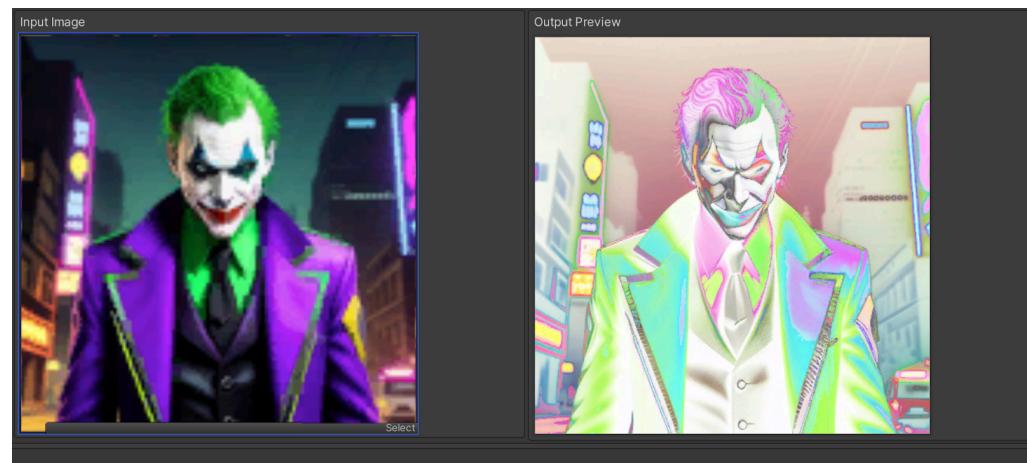
- 10. Change Contrast :** This process adjusts the contrast of each pixel in the input texture by applying a contrast adjustment formula and returns a new texture with adjusted contrast.



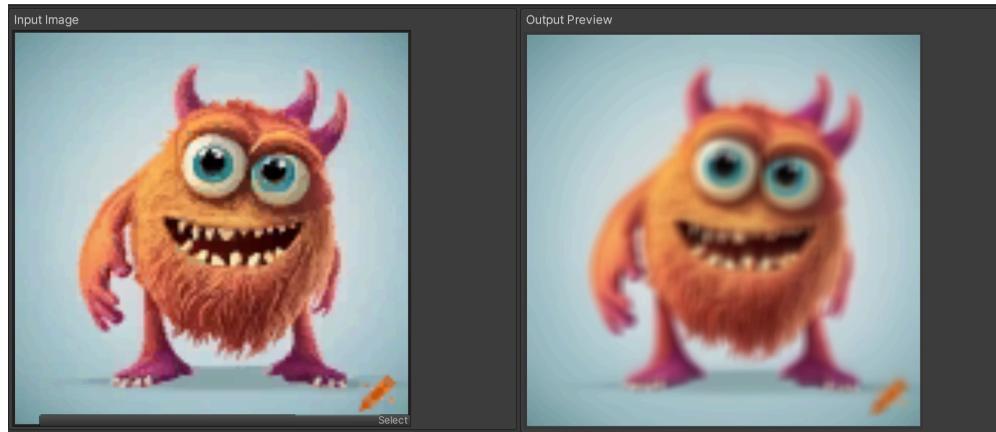
**11. Threshold:** This allows you to apply a threshold to a texture and convert it into a binary image.



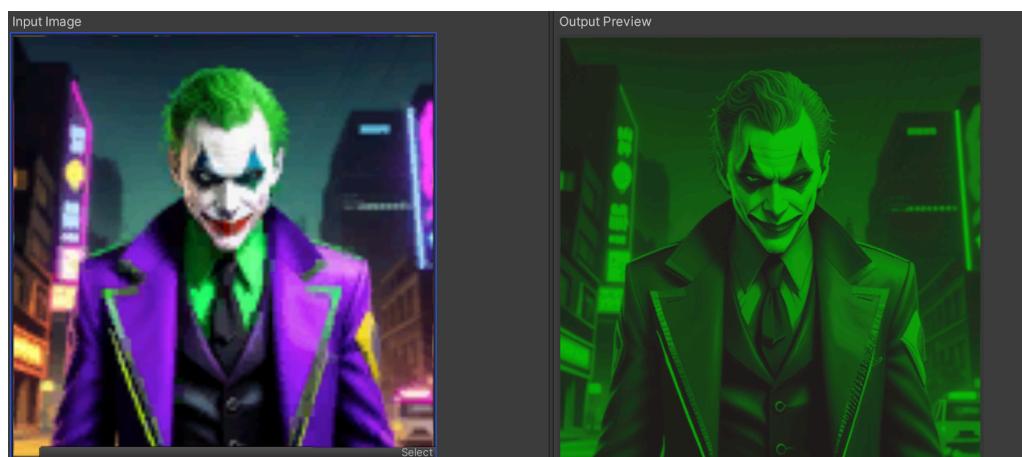
**12. Solarize Effect :** This creates a solarization effect by selectively inverting the colors of pixels based on their intensity relative to a specified threshold. This effect can produce visually interesting results with high-contrast images.



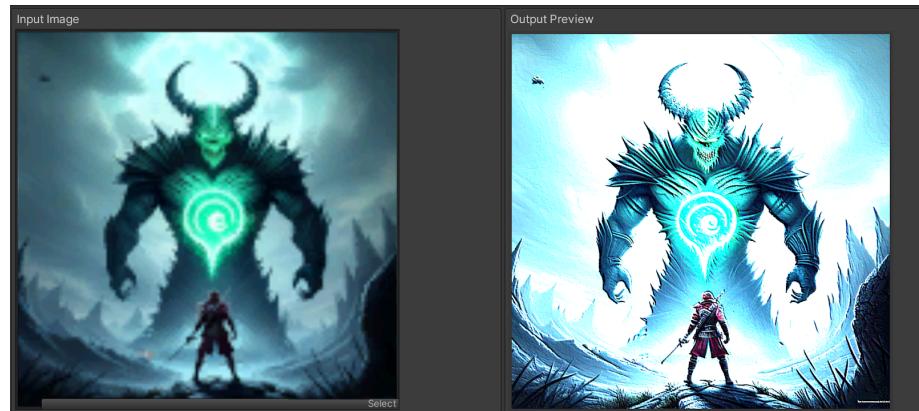
**13. Blur Effect :** It applies a simple blur effect to an input texture by averaging the colors of neighboring pixels within a specified radius. The blur is applied first horizontally and then vertically to achieve a smoother result.



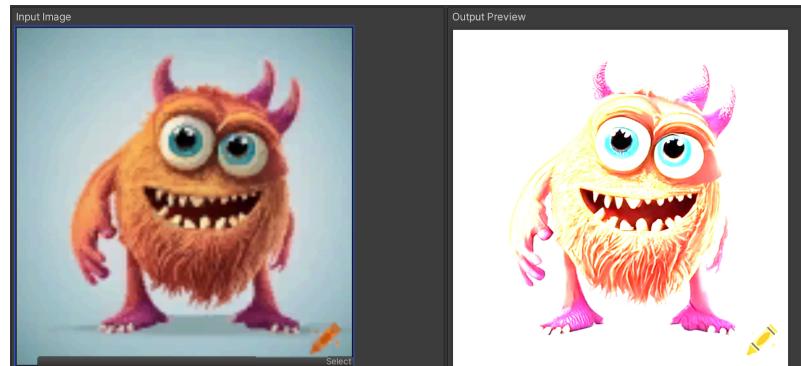
**14 .Duotone Effect:** It applies a duotone effect to an input texture by mapping grayscale values to a blend between two specified colors, resulting in a two-color representation of the image. This effect is often used for artistic purposes to create visually striking images with limited color palettes.



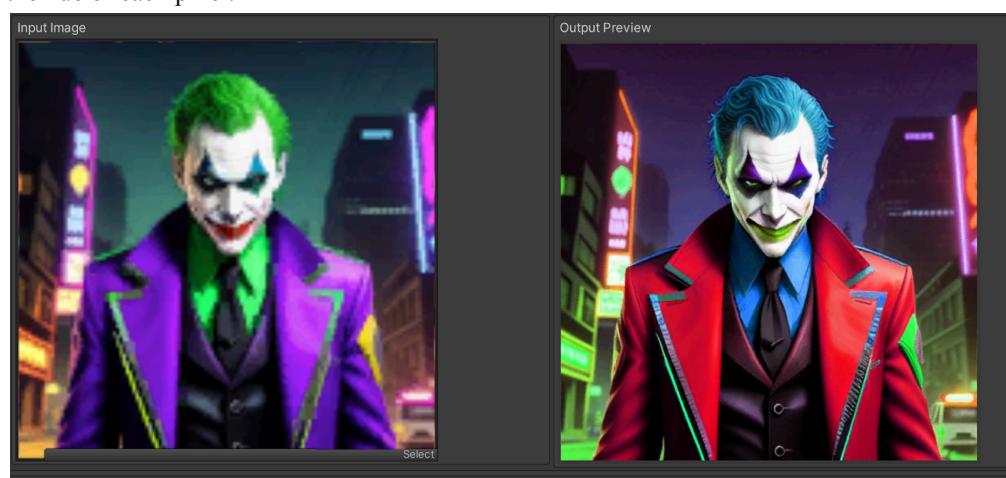
**15.Emboss Effect :** This applies an emboss effect to a texture by simulating the effect of light and shadow on the texture's surface, resulting in a three-dimensional appearance. The strength of the emboss effect can be adjusted, and grayscale conversion can be enabled to produce a grayscale embossed image.



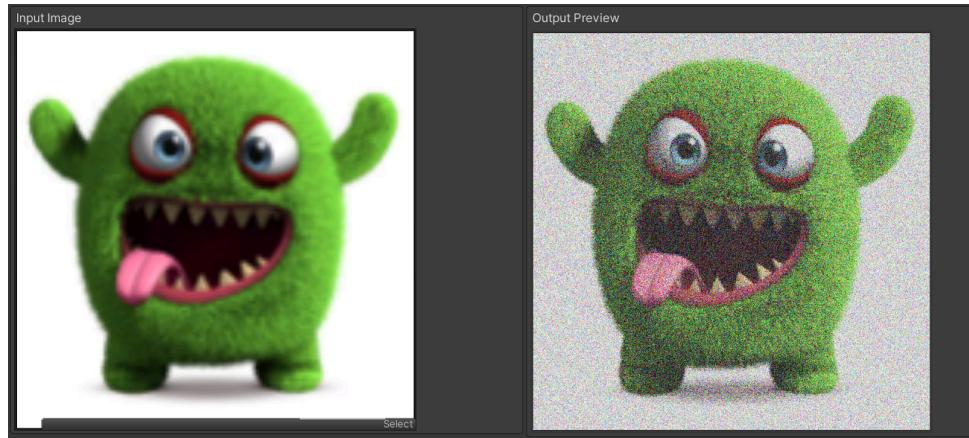
**16.Glow Effect:** It applies a simple glow effect to the input texture by increasing the intensity of each pixel's color. However, it's worth noting that this implementation might not achieve a traditional glow effect, as it doesn't take into account neighboring pixels or any blurring operations typically associated with glow effects. Depending on your requirements, you might need to enhance this code to achieve the desired glow effect.



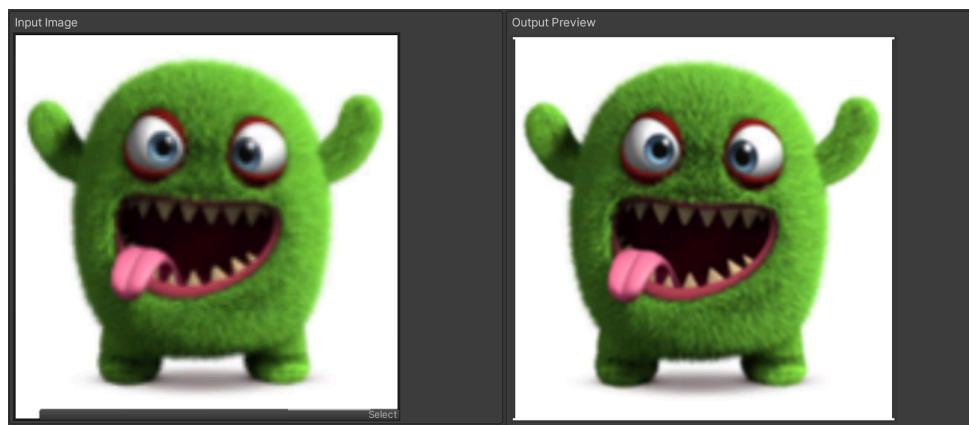
**17.Hue Displacement :** Applies a hue displacement effect to the input texture by shifting the hue of each pixel.



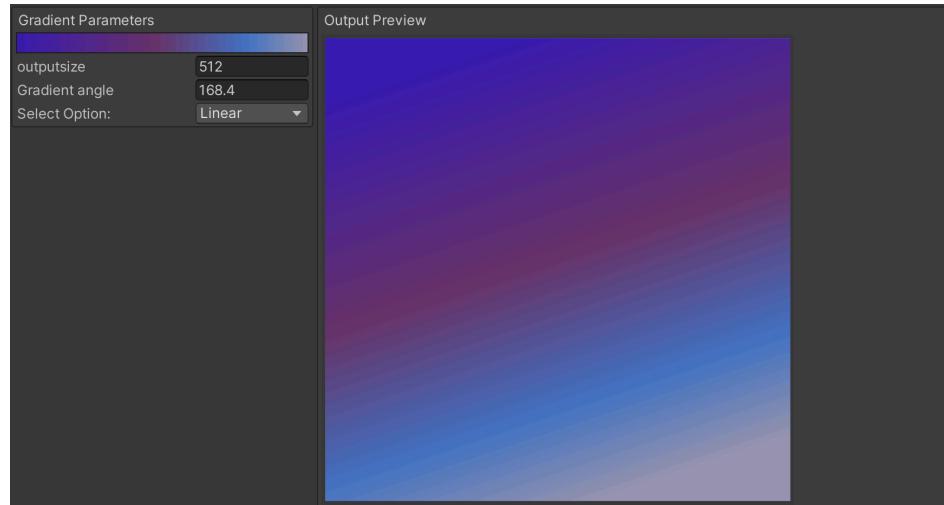
**18. Noise Effect :**Generates noise on each pixel of the input texture, allowing for the creation of various visual effects such as graininess or texture distortion. The `amountOfNoise` parameter controls the range of noise variation, while the `strengthOfNoise` parameter controls the intensity of the noise effect.



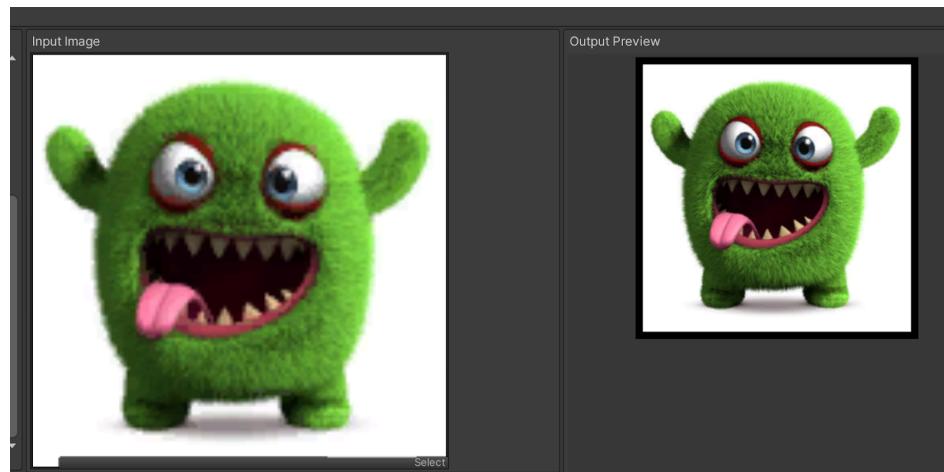
**19. Tilt Shift Effect :**Applies a tilt-shift effect to the input texture by performing horizontal and vertical blurring, simulating the depth of field effect seen in photography. The `blurSize` parameter controls the intensity of the blur effect. Adjusting this parameter allows for varying degrees of tilt-shift blur.



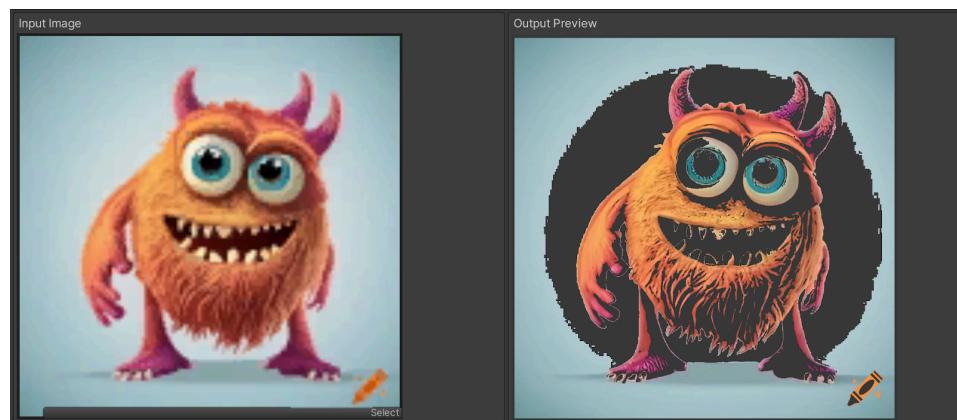
**20. Generate Gradient** :Provides a reusable utility for generating gradient textures, supporting both linear and radial gradients with parameters gradient angle and gradient radius.



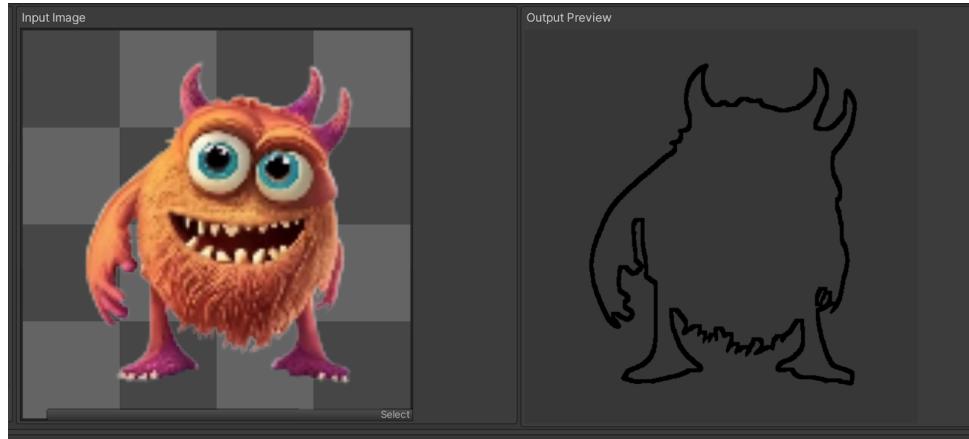
**21. Generate Border** :This allows you to generate a bordered texture with customizable parameters such as border thickness, colors, alpha threshold, and shadow effect.



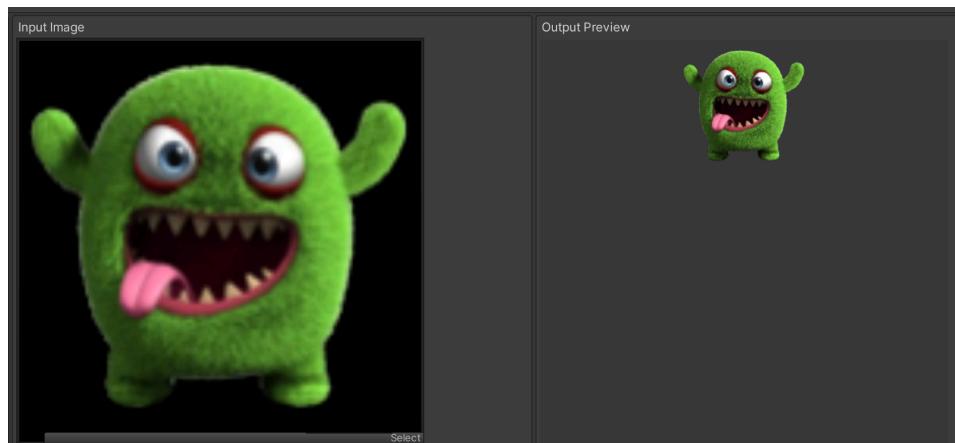
**22. Remove Colors** :This allows you to remove pixels from a texture that closely resemble colors in a given palette, effectively reducing the number of similar colors in the texture.



**23. Create Outline:** It allows you to create an outline effect around non-transparent areas of a texture, with options to preserve the original image, specify the outline color and thickness, and smooth the outline for a more polished appearance.

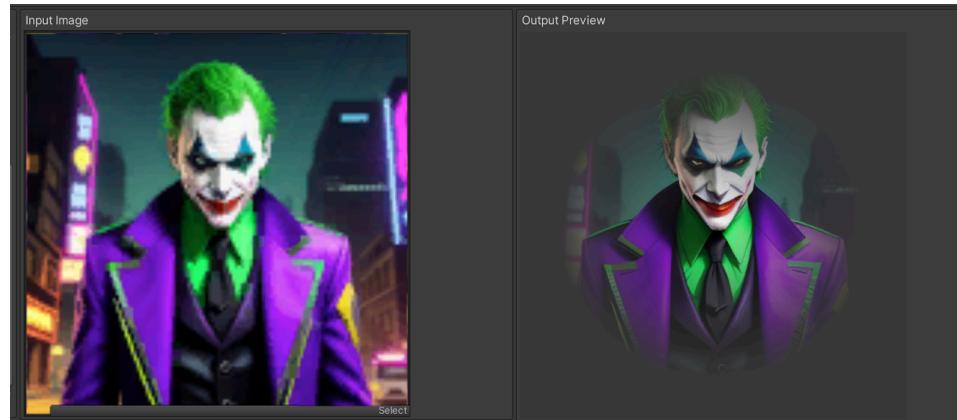


**24. Resize Image:** It provides a simple way to resize textures while maintaining their aspect ratio if desired. You can use this method to resize textures for various purposes in your project.



**25. Generate Color Palette :** It allows you to generate a color palette from a texture, which can be useful for various purposes such as image processing, color analysis, and more. Adjusting the `colorDetectionSensitivity` parameter allows you to control the strictness of color detection when generating the palette. Lower values result in a more precise color palette, while higher values may include more similar colors.

**26.Alpha Gradient :** It allows you to adjust the alpha channel of a texture using either a linear or a radial gradient. The resulting texture will have its alpha channel modified based on the gradient specified.



**27.Multiply Image :** This allows you to multiply textures together, which can be useful for various image processing tasks, such as blending textures, creating special effects, or combining different layers of textures.

