

Stylized Art Styles in Video games

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Introduction:

The goal of this project is to highlight and recreate stylized game art styles as they have been left behind in this modern AAA gaming market. The lack of a stylized art style has given birth to many games looking and feeling the same, as they all are trying to replicate the realistic art style. This has ultimately led to games being less memorable, not being unique, and not standing out in an oversaturated market.

AAA game companies are unintentionally forced into using a realistic art style as they believe it will appeal to a bigger audience, but this also has the opposite effect, as there is an overabundance of realistic art style games, and the art style has become tired and dull. This has pushed gamers into the indie markets to find more unique and artistic experiences.

By the end of this project, I will show how having a stylized art style in your game gives it a unique personality to help it stand out, makes it more memorable in gamers' minds, and makes a game artistically timeless with stunning visuals.

Aims, Objectives and Deliverables:

I am creating post-processing materials in Unreal Engine 5 to represent stylized art styles used in other stylized games. Then, I will be using them in multiple scenes and identifying their strengths and weaknesses

I will be creating Post processing materials inspired by:

1. Hand drawn pencil
2. Retro pixelation
3. Cell Shading and Outlines
4. Comic book
5. Vector lines
6. Black and white with film grain
7. Return Of the Obra Dinn Art style Dithering
8. Cuphead
9. VHS
10. ASCII
11. Gameboy

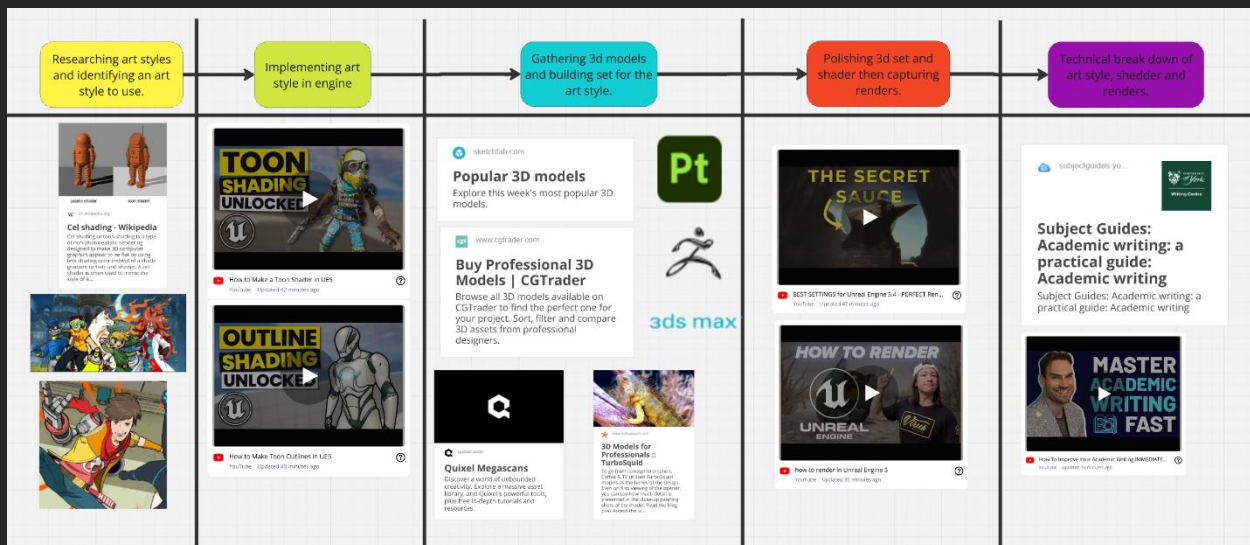
Research Methodologies

At the beginning of the project, I researched popular stylized games and identified their art styles. I then researched these art styles to gain a greater understanding of the creative processes, design decisions, technical difficulties encountered during development, and the artistic impact these games have had.

I then researched how to replicate these art styles in Unreal Engine 5 using post-processing materials. YouTube videos helped me create these art styles, and forums helped me troubleshoot and polish the materials. I made nearly 30 post-processing materials, which was too many for the scope of this project, so I chose the best ones that met the objectives.

I then researched scenes I could build to showcase these art styles' strengths and weaknesses, so I could give them a fair review. I tried to create scenes that were different from each other to best showcase and capture renders of them. I made a total of 18 scenes, but this was too many, so I chose the best.

This is my Kanban board; it is the best representation of the research and production pipeline I used in my project.



This is my PureRef board that was used to build a refrance catalogue:



Documentation of production and Final Artifact

Scenes Without post processing material

To best demonstrate the post-processing materials, I built scenes to showcase the potential of each material.



Sad Blob Fish Man: I chose this scene because it is dark and detailed, while also being colourful. This contrast of colours could create conflict in certain art styles.



Abandoned Tank in Forest: I chose this scene because it showcases nature and man-made objects, which could create an interesting



Mech Suit In Space: I chose this scene because it is bright, detailed, and cartoony. This would demonstrate whether an art style enhances or detracts from the scene when they change the colour or clarity of a scene. clash and highlight weaknesses in an art style.



Statues: These statues are beautiful and majestic; they will be a good test for the art styles to see if they can preserve the beauty or drastically alter it, causing it to be lost.



Racing Cars at the Track: I created this scene because the cars' personalities are defined by their paint colours. I was also curious if these personalities would hold up with art styles that reduce colour.



Old City Street: This scene has highly detailed areas and limited colour palate. This would evaluate the art styles potential by showing if they can enhance a scene's details or diminish it for the viewer.



Masks: I chose the masks because they are all artistically distinct. This scene would reveal which art styles work or don't work with different types of artistic assets.



The Bat: A horror scene is a great test for an art style, as it could enhance the horrific visuals or destroy the horror atmosphere.



Angler Fish Monster: This monster is scary with a realistic art style because it is an unrealistic monster in a real-world setting. An art style could either amplify or diminish this atmosphere.



Night City: A night scene with low dark colours will test an art style's ability to enhance the mesmerizing quality of a night city. Could an art style add to that, or completely change it.

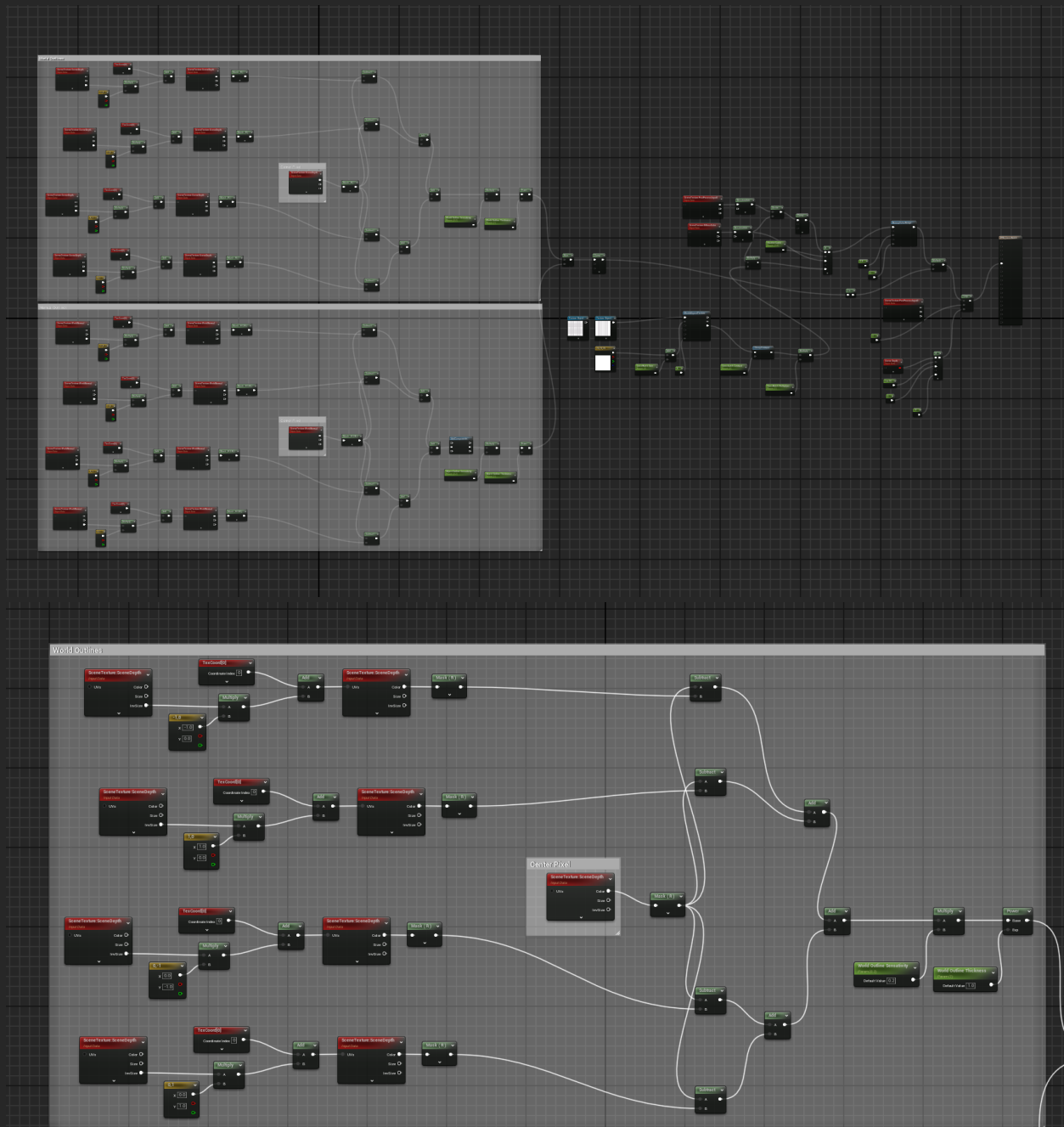
Pencil

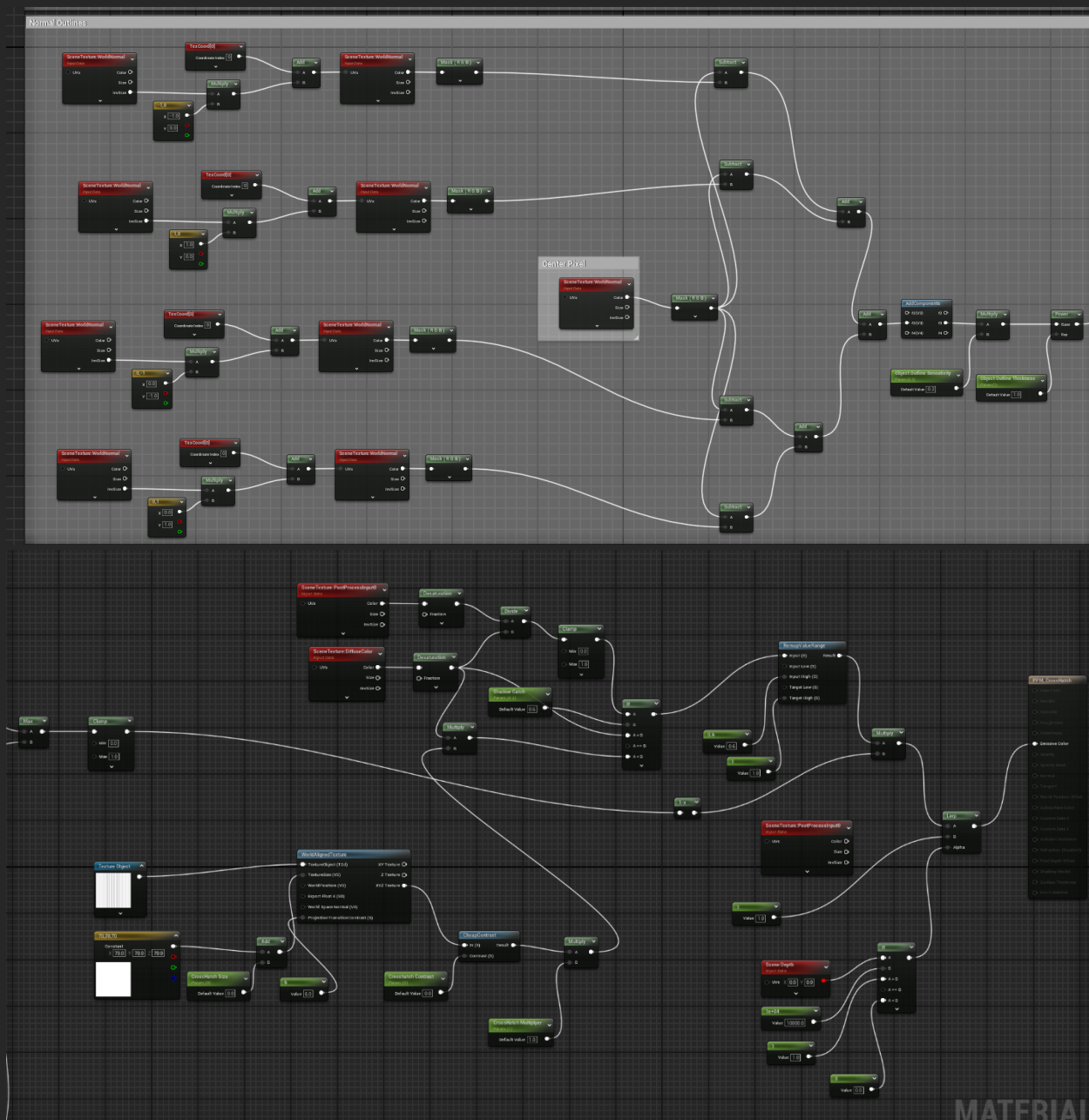
In the game Toem, the pencil art style is entirely white with black outlines and grey shading, simulating pencil and paper drawings. What this art style achieves beautifully is a doodle or sketch-like aesthetic, which gives the game a very cozy and nostalgic feeling.

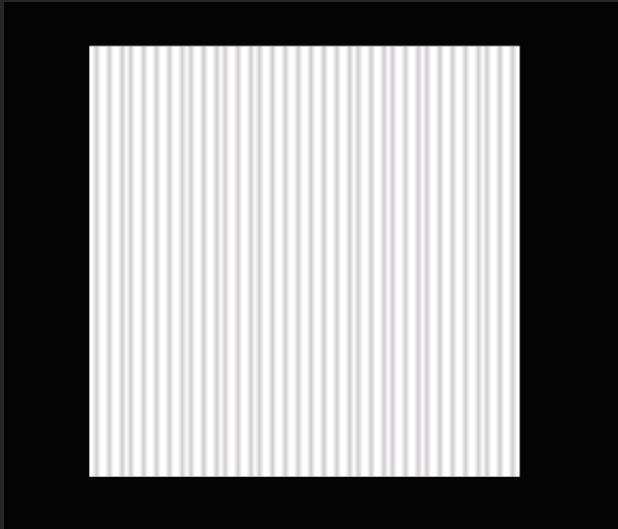


TOEM 2021

Pencil Post Processing Material Blueprint-

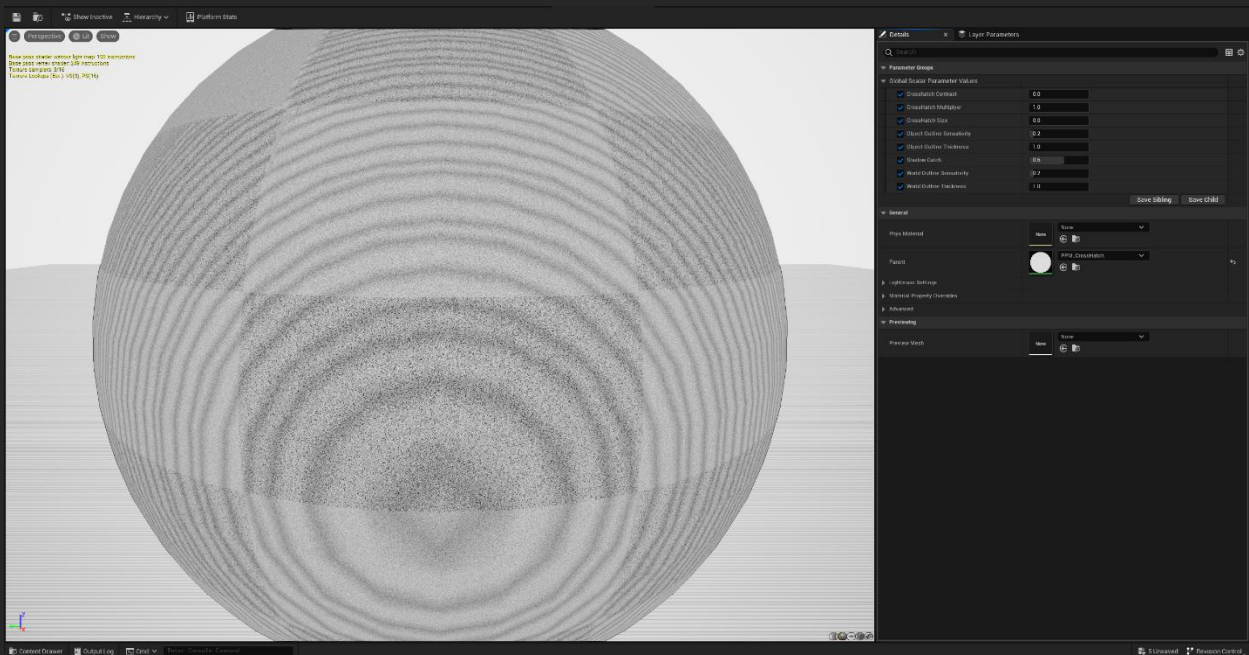






I made this texture in Photoshop. This is simulating stylized shading lines.

This is my material Instance customisable settings:



Renders











Review

Pros: The pencil art style works well with scenes that have high detail and strong shapes, for example, the Mech Suit, Masks, and Statues. The statues, in particular, retain their beauty while highlighting details and showcasing the complexity of their form.

Cons: In the Racing Car scene, the art style removes the colours, eliminating the cars' personalities and making them all look the same. This removal of colour also negatively impacts the Blob Fish scene, as it relies on colour to create its atmosphere. Additionally, in the Bat scene, the horror atmosphere is lost, and the scene is no longer scary, defeating its purpose.

Conclusion: This art style is visually striking with its contrasting white and black colours, simulating paper and pencil. It effectively highlights details, making them more impressive and visible to viewers. However, this is also a limitation, as it relies on detailed models to achieve its impact. Models with fewer distinguishing details or those that use colour to define themselves will not work well with this art style.

Retro pixelation

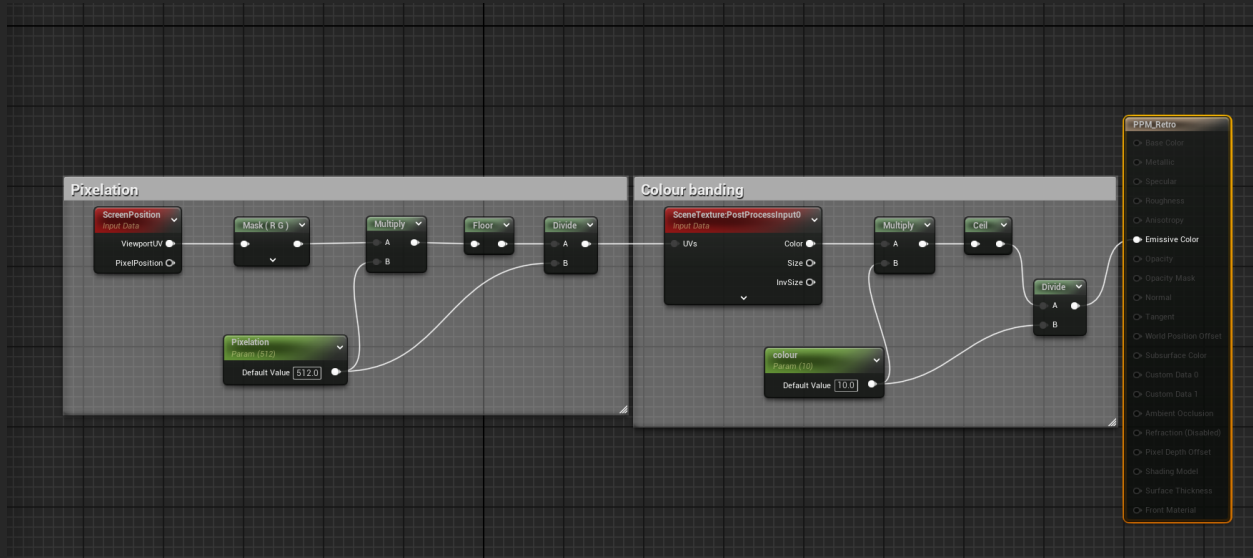
The ironic fact about this art style is that it was once considered modern, high-end graphics for its time. Now that graphics have reached near-realism, some gamers feel nostalgia for retro video game graphics and want to recapture that aesthetic in modern games.

Modern games featuring retro graphics are often horror games, as this art style obscures detail. This makes it difficult for viewers to immediately comprehend what is on screen at first viewing. The low-detailed graphics portray a sense of unease and distortion of reality, which contributes to the fear factor in horror games.

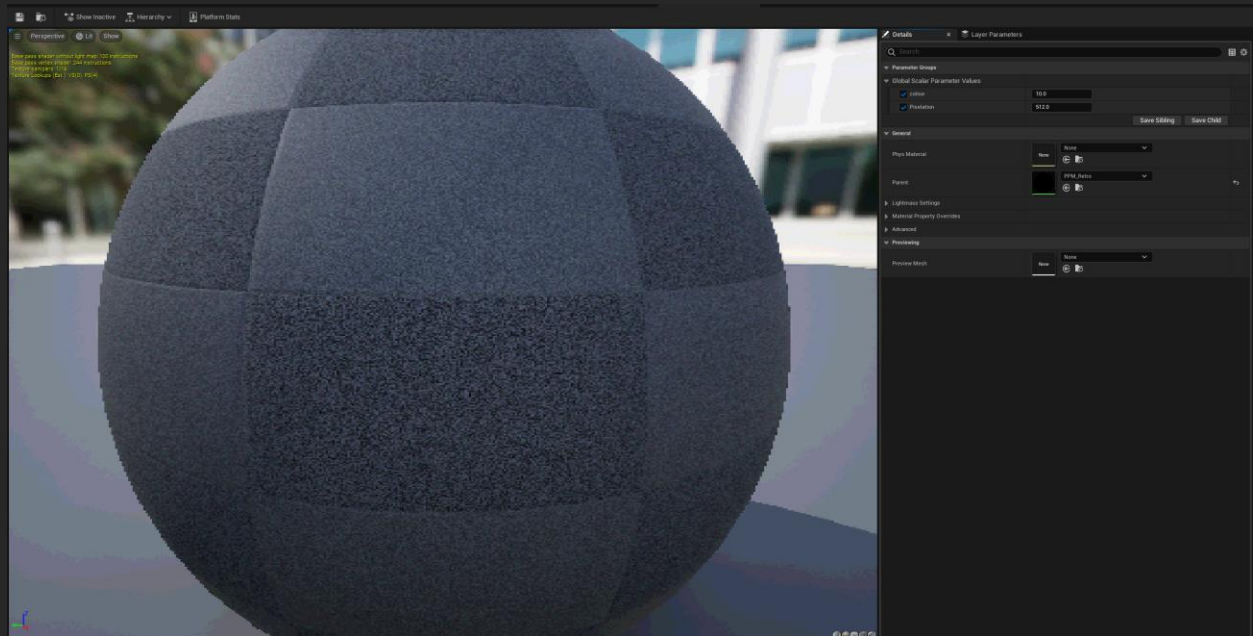


Metal Gear Solid 1998

Retro Post processing material Blueprint-



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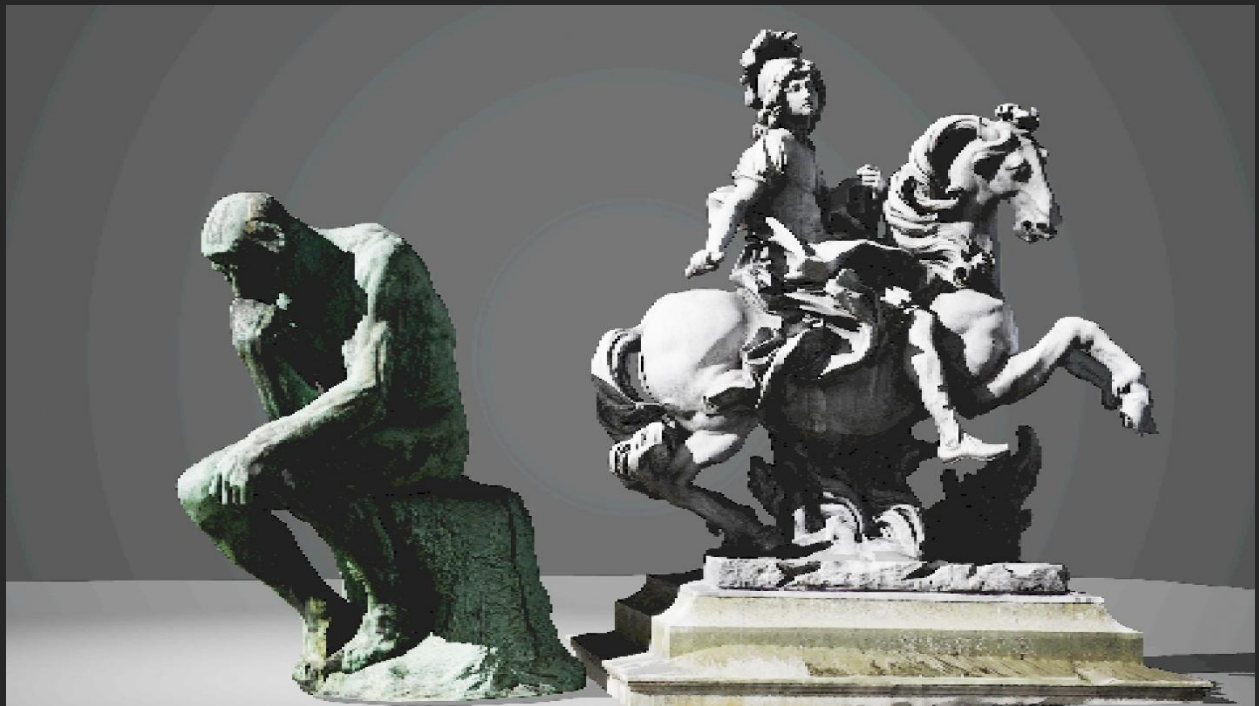


Renders











Review

Pros: The lack of clarity due to the pixelation of the image makes the Bat and the Angler Fish Monster scenes more disturbing, as it compels the viewer to examine the image more closely for a better understanding. For example, the first thing you see in the Bat scene is the bat itself. Upon closer inspection, you notice something in the bath, then the bloody handprint on the wall, and finally, you realize it's a dead body in the bath.

Cons: This art style relies on the viewers' nostalgia for it. Without that nostalgia, it can be frustrating to discern what is happening in the scene. For instance, many of the details on the masks and statues are lost, making the scenes less visually appealing.

Conclusion: The PS1 art style is effective for horror games because the lack of image clarity adds a horrific and unsettling atmosphere upon first viewing. However, this relies on viewers having nostalgia for retro art styles, as this style intentionally replicates the limitations of retro consoles. This inherently makes the graphics appear dated and old, which may deter viewers unfamiliar with these graphics. This limits the market for this art style, but given the popularity of horror games, it can be an effective way to create a chilling atmosphere with minimal development and reduced time spent on models and textures, as the pixelation obscures details.

Cell Shading and Outlines

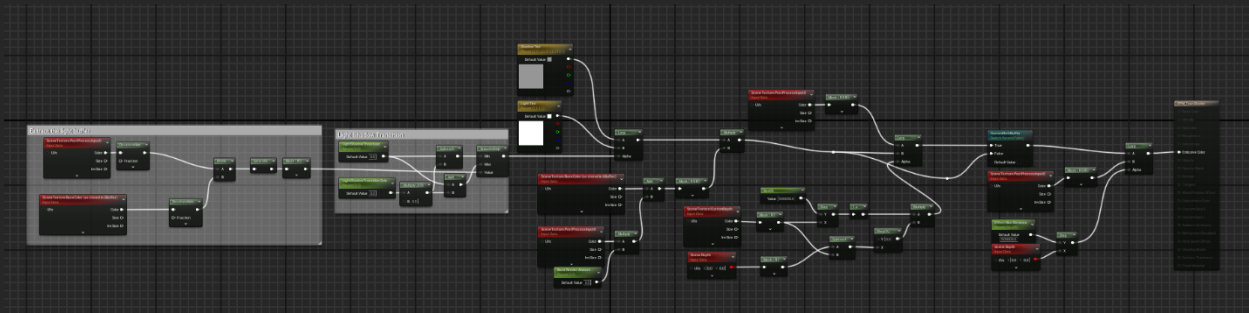
Cell shading is a timeless art style. Games that utilize cell shading remain visually impressive. For example, The Legend of Zelda: Wind Waker's graphics do not show their age compared to its successor, Twilight Princess, which used modern graphics for its time and now appears more dated.

Combining cell shading with outlines to achieve an anime or cartoon aesthetic is widely used today across all aspects of gaming. It is prevalent across various game genres and can be played on low-powered gaming systems, making it ideal for mobile games.

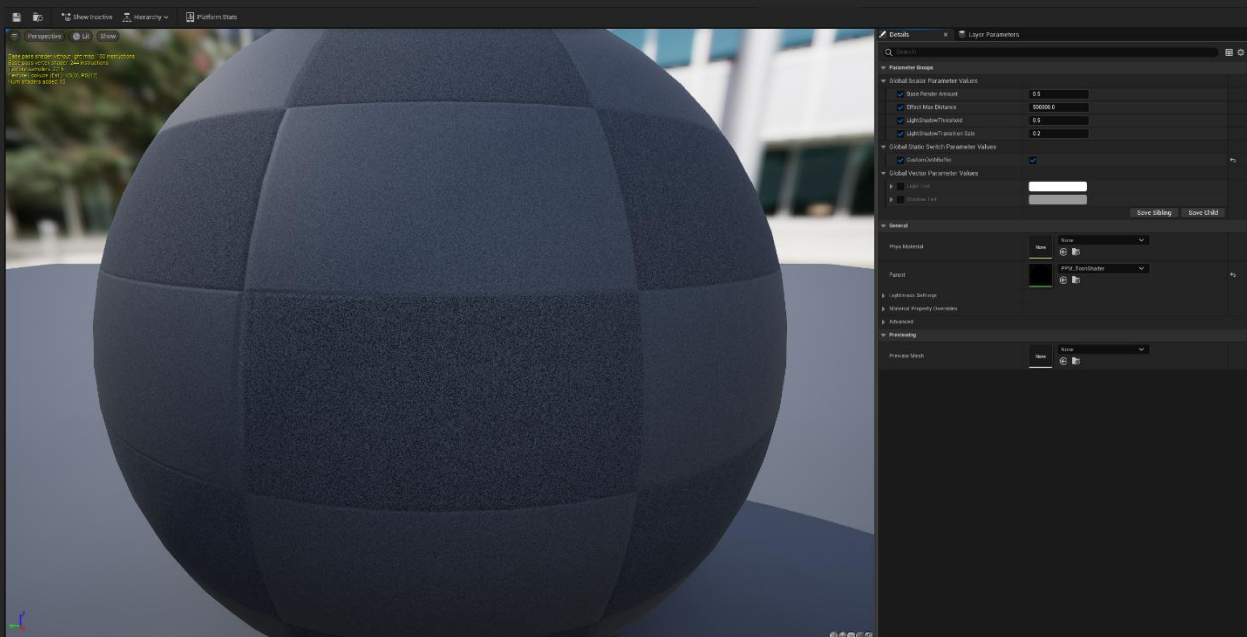


The Legend of Zelda The Wind Waker 2002

This is my Cell Shading Blueprint:

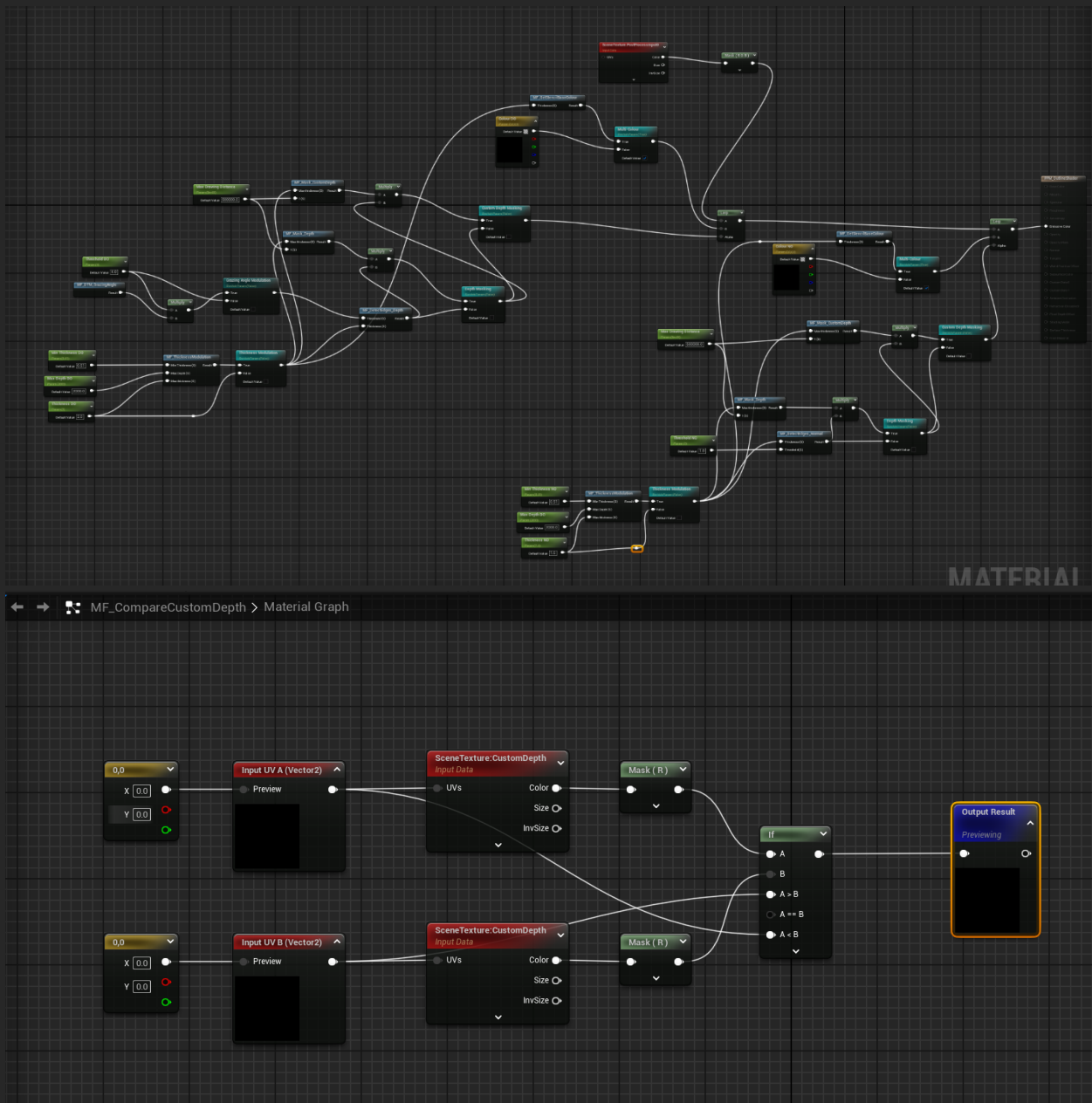


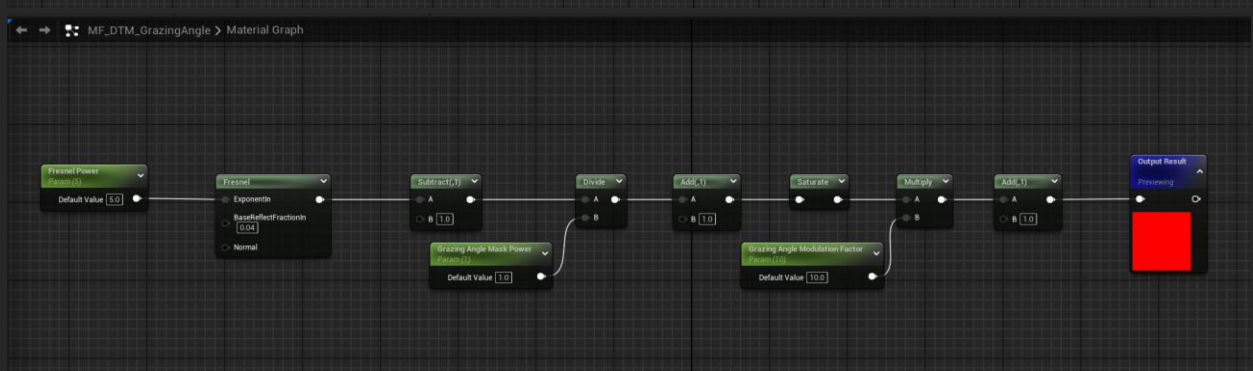
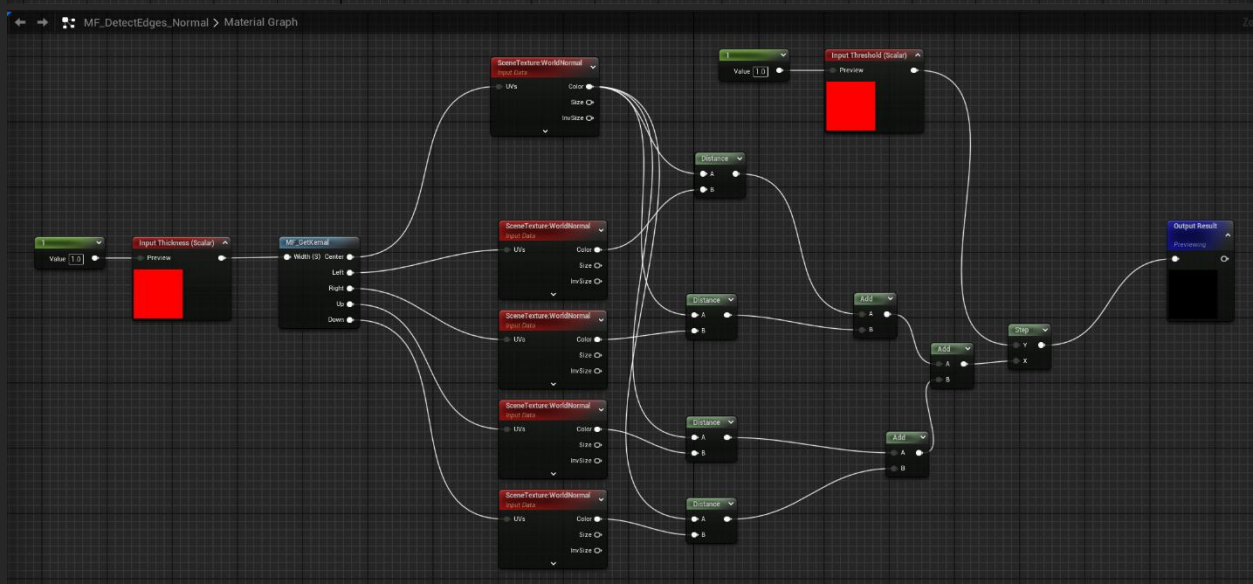
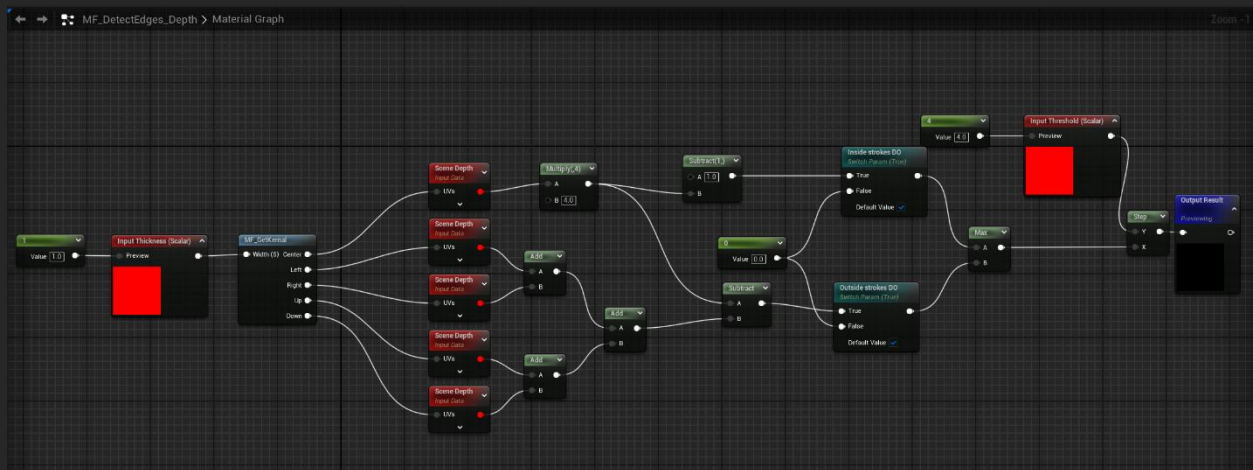
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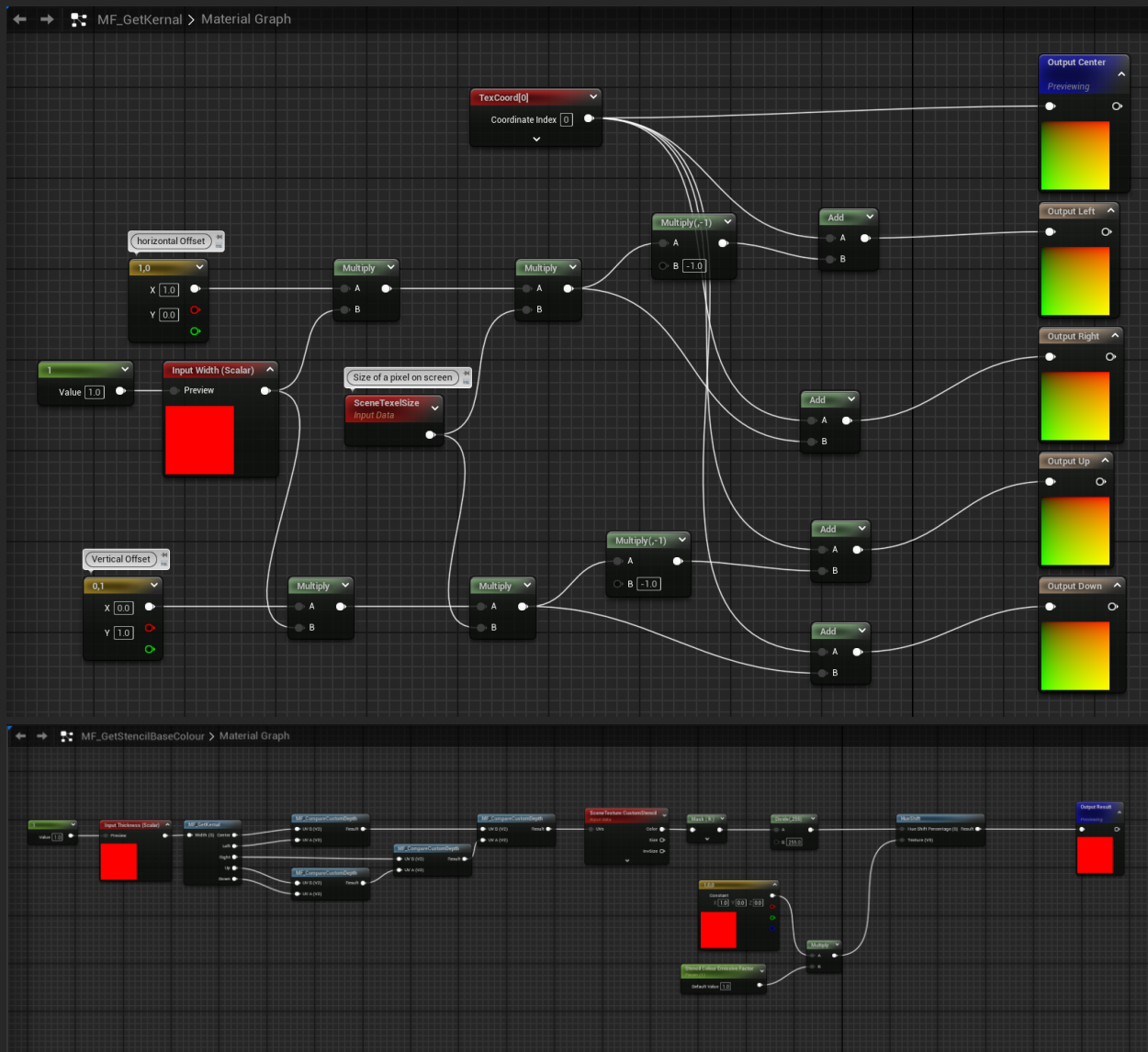


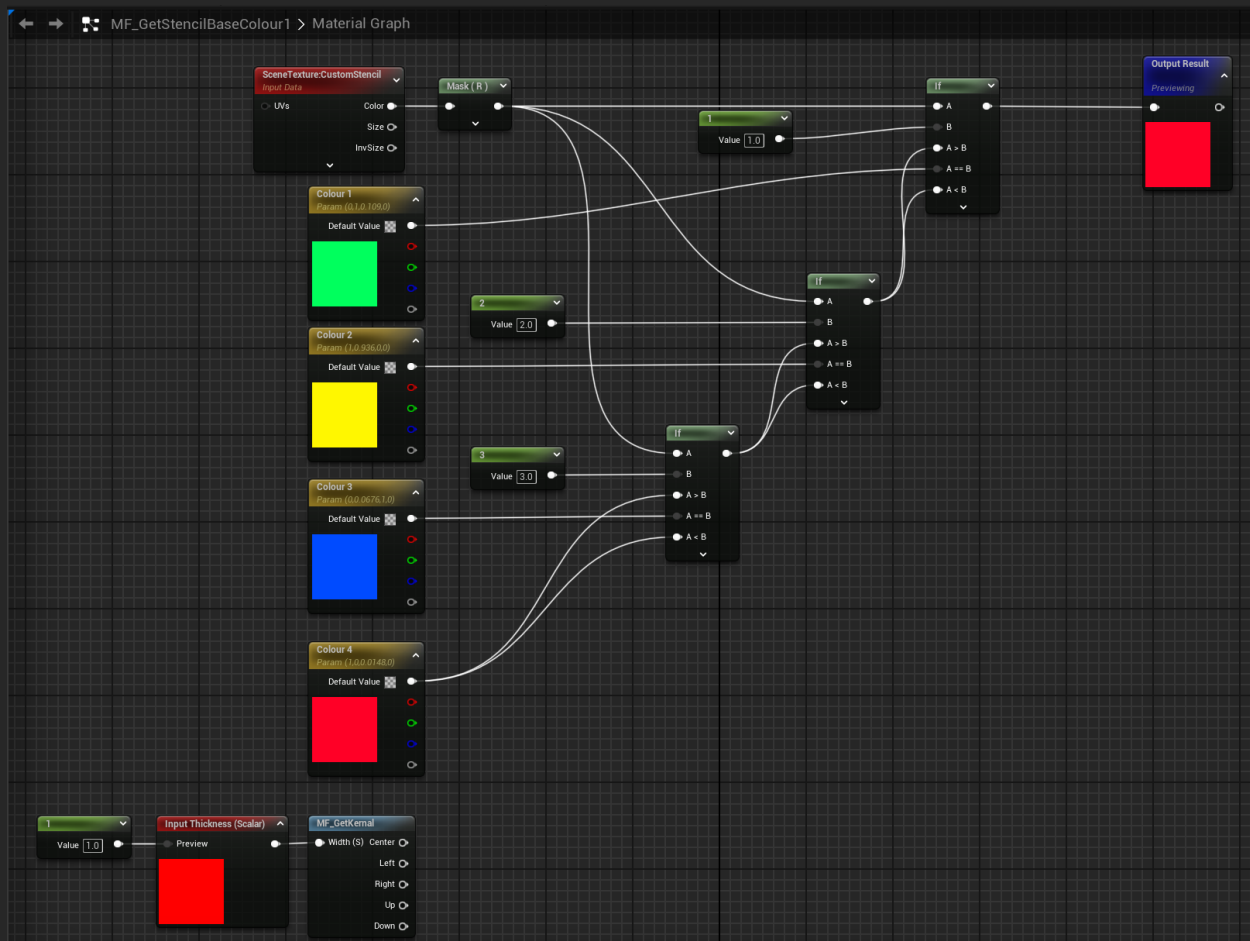
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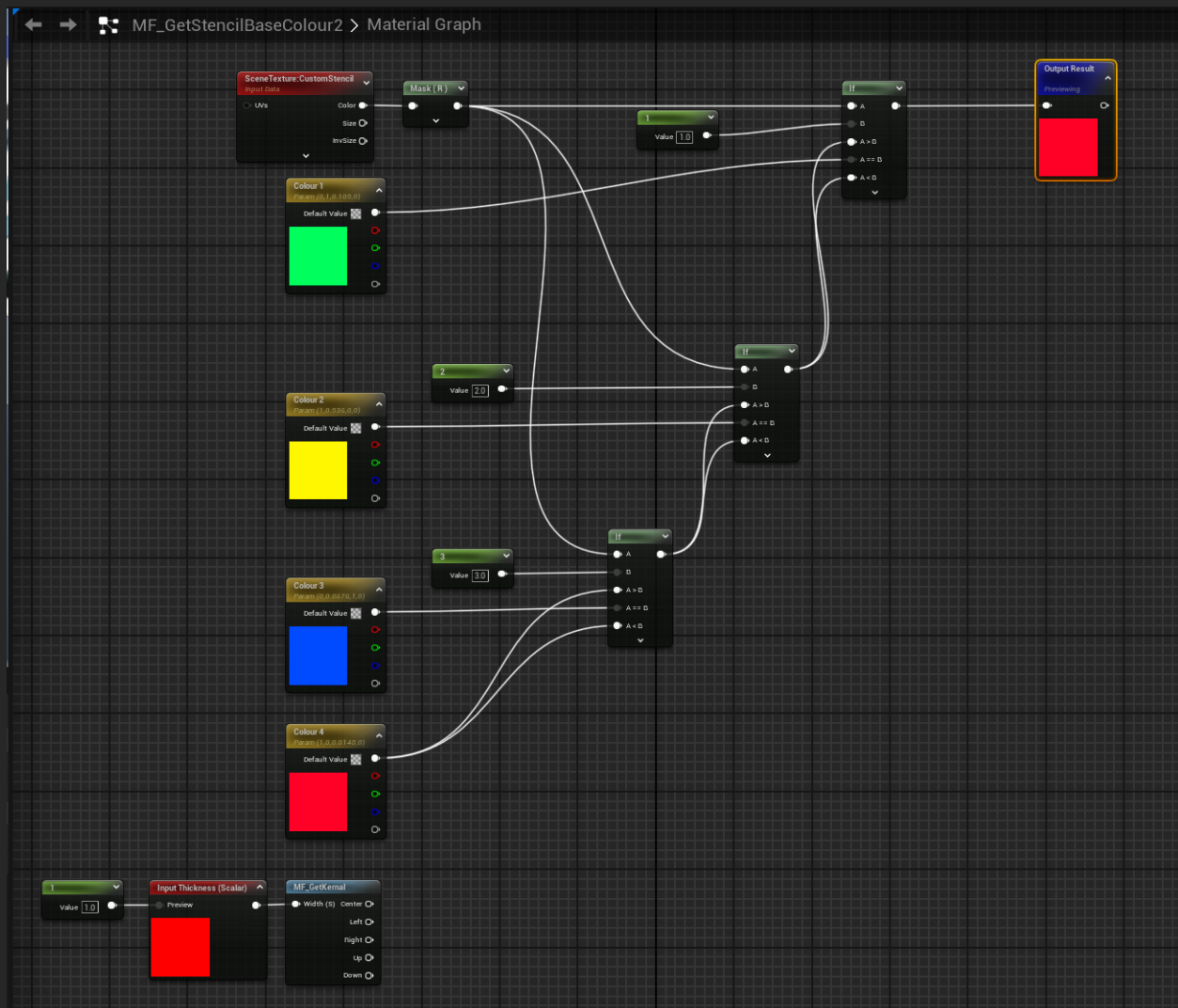


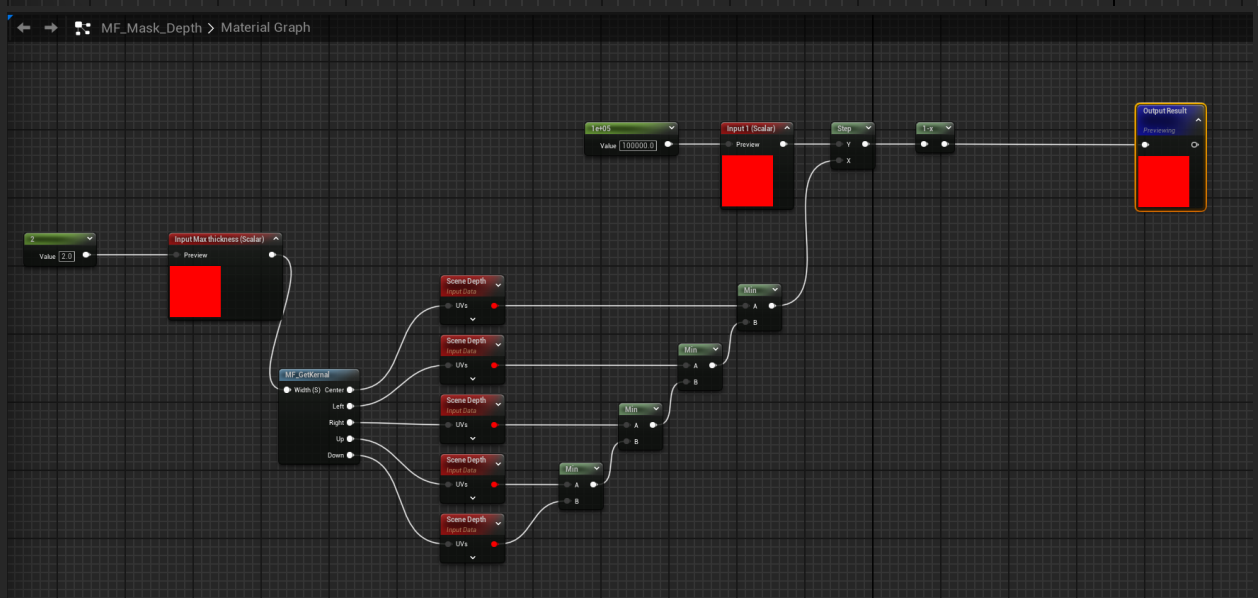
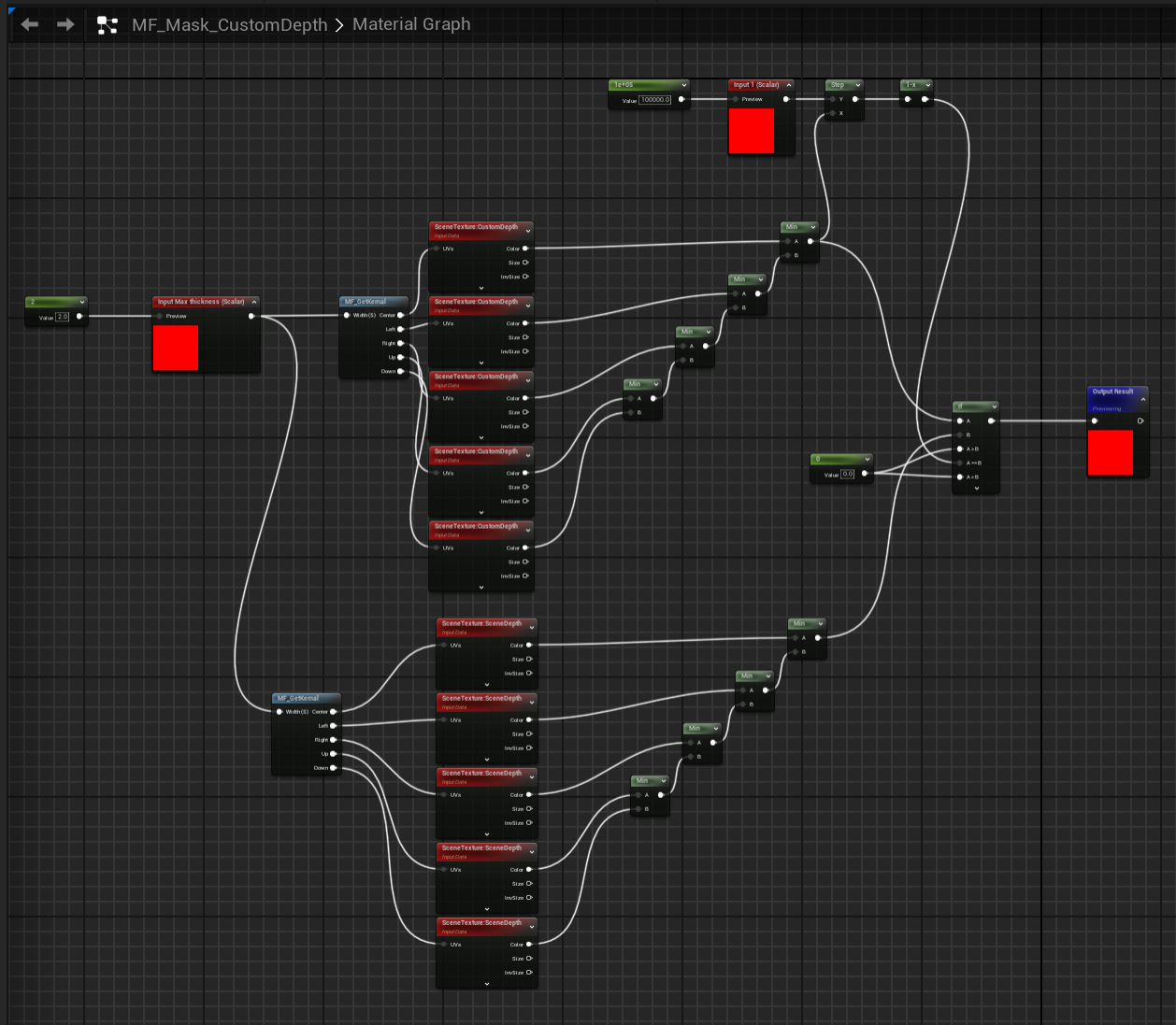


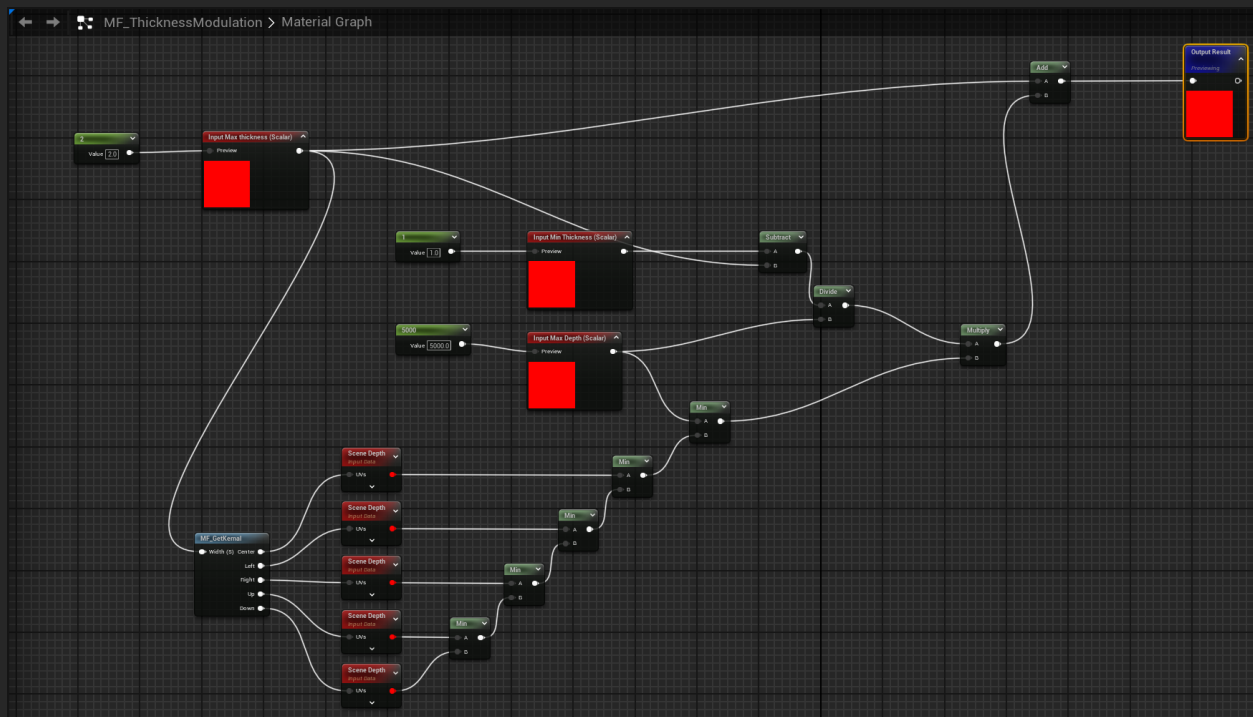




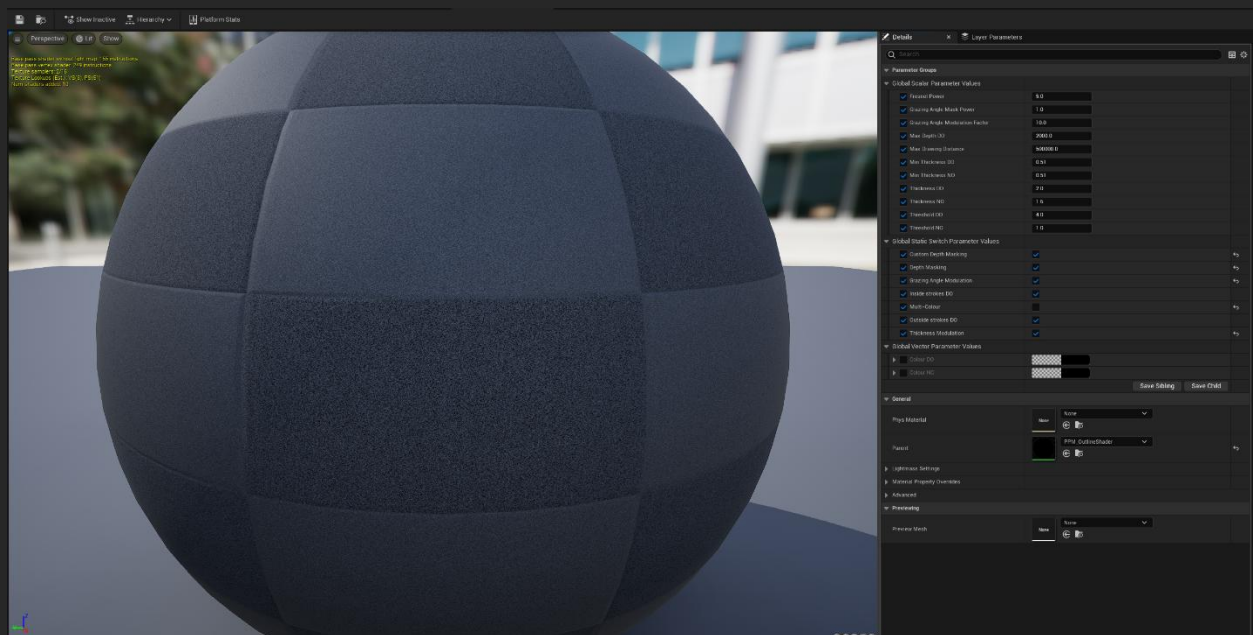








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Renders





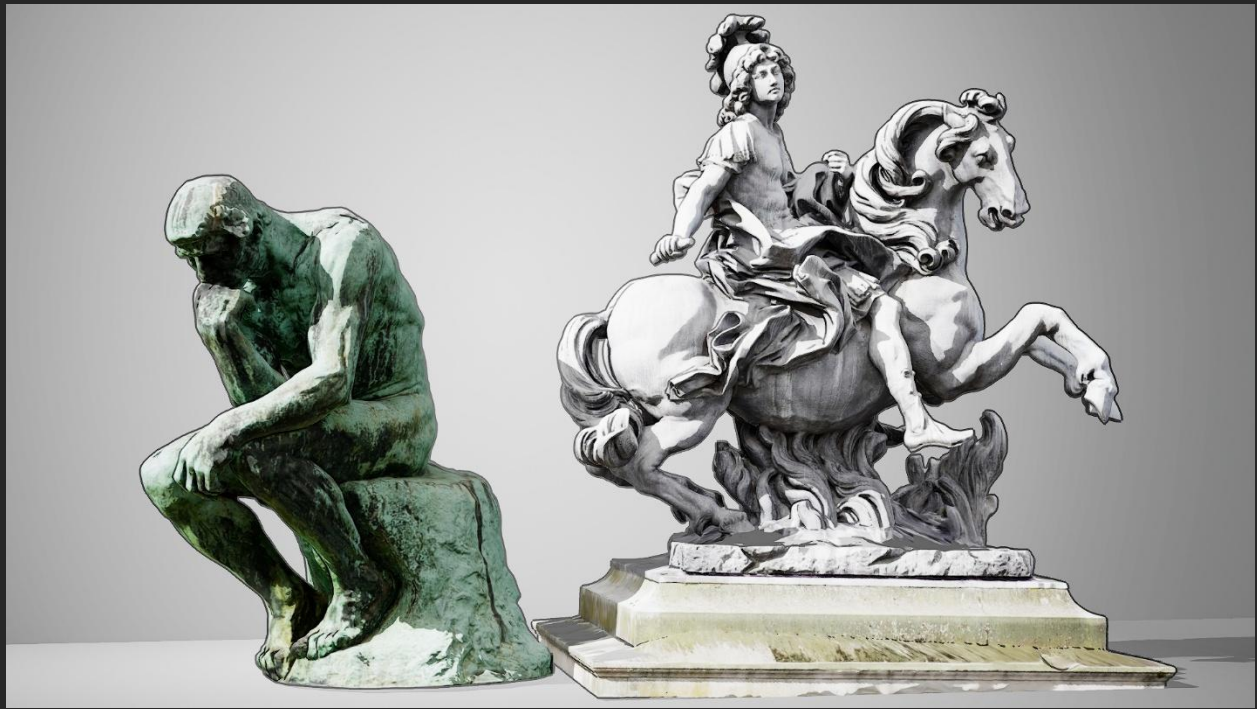
















Review

Pros: Cell shading makes colours pop, which grabs the viewer's attention because it is extremely visually appealing. For example, the Mech Suit and the cars' models stand out from the rest of the scene, immediately drawing the eye. This, combined with the outlines, further defines the models and gives them a defining edge on the models Silhouette.

Cons: The bright colours of cell shading have destroyed the horror atmosphere of the Bat scene. Additionally, the outlines have accentuated some of the Angler Fish Monster's features, making it look goofy and less scary.

Conclusion: This is a highly appealing and attractive art style for all types of gamers. The bright and colourful appearance it imparts to games makes it perfect for many genres. This art style is timeless and does not age, as it is so vivid and bold. However, this can also be a negative, as it could be perceived as immature and lead some to believe the game is intended for children. This will restrict the use of this art style in more violent, ultra-realistic, or simulator games, as its unrealistic nature would detract from the games immersive.

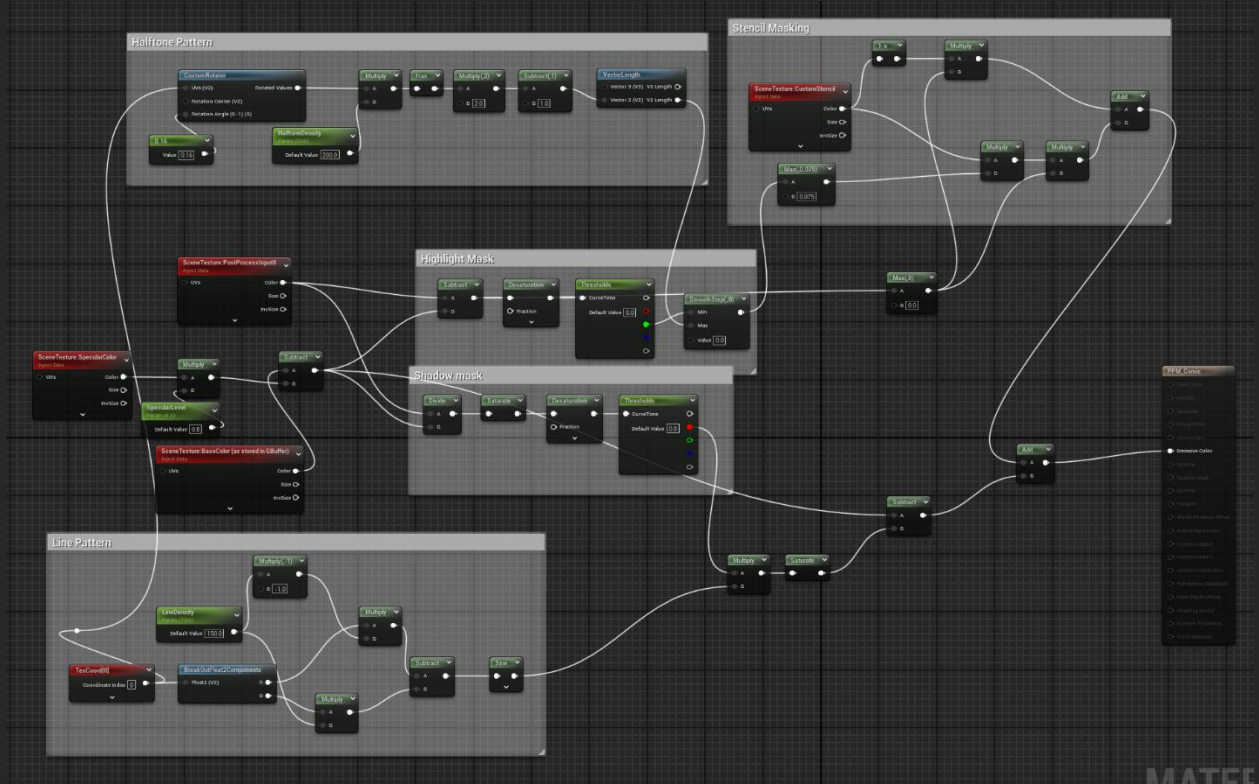
Comic Book art style games

The comic book art style is similar to cell shading, but it is more specialized to replicate the aesthetic of comic books. It mimics artistic stylized techniques, dynamic colours, and distinct shading methods. When executed correctly, the comic book art style is nostalgic and playful, as seen in games like *Borderlands*.

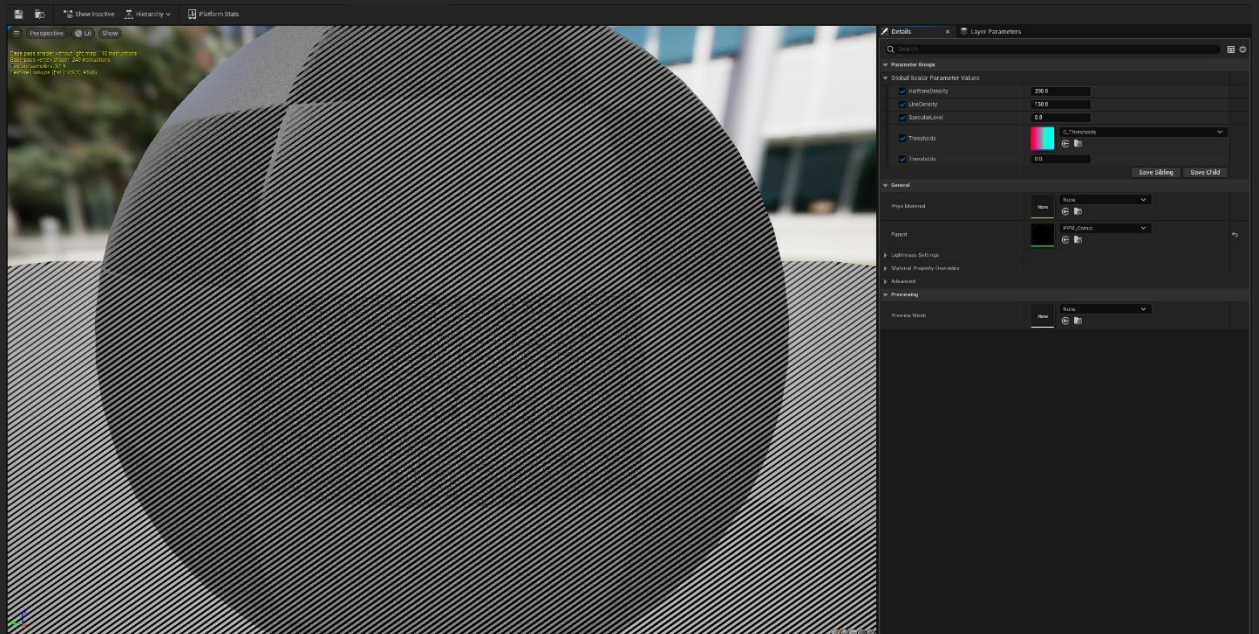


The Wolf Among Us 2013

Comic Book Post processing material Blueprint-



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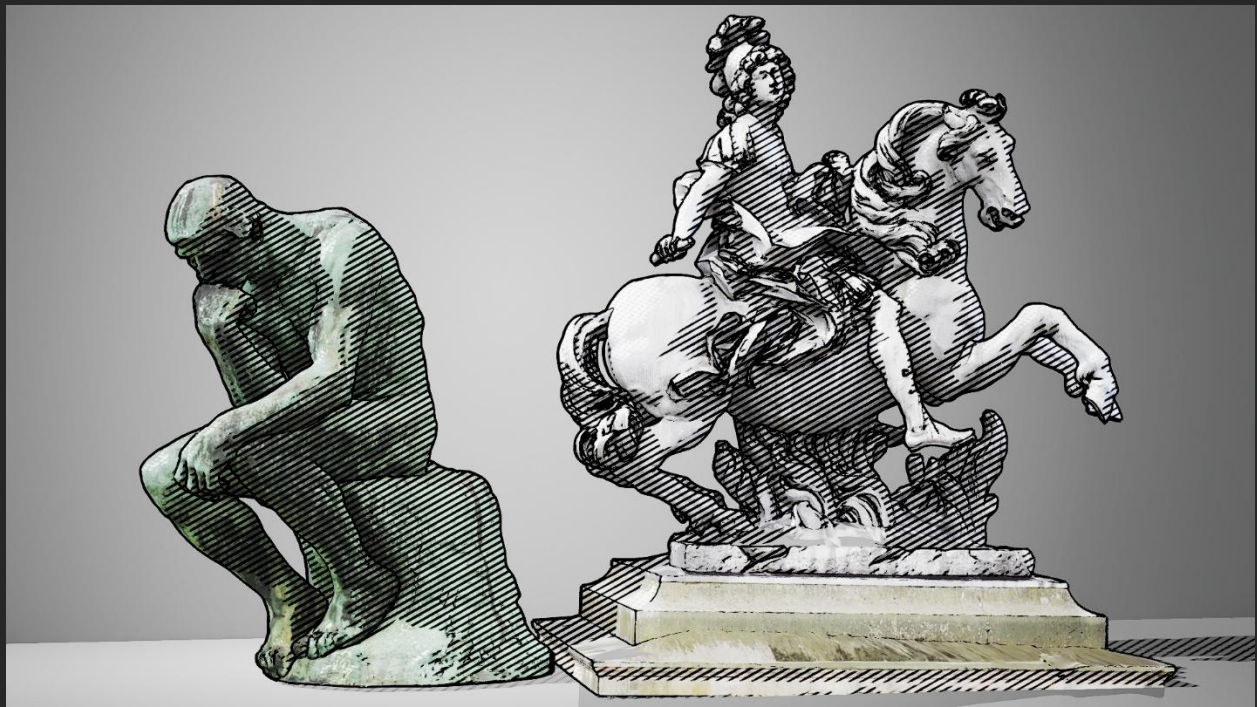


Renders





















Review

Pros: Similar to cell shading, this style makes colours pop, and the stylized line shading, paired with outlines, gives the scenes a bold and striking appearance. For instance, the statues have retained their beauty while acquiring a comic artistic style. Also, the cars and the masks have popped out of the scene with the brightening of the colours, and the stylized shading has given them a striking look. Additionally, the outlines define the silhouettes, making the shapes stronger and more defined.

Cons: Also, like cell shading, this style has destroyed the horror atmosphere. The outlines, paired with the comic shading, have blurred and darkened the grass in the Tank scene, resulting in an overabundance of harsh black colours. It has also eliminated the lighting and colour in the Blobfish scene, converting it to stylized shading that has ruined the atmosphere.

Conclusion: This art style replicates the comic book aesthetic, which is visually striking and bold. The stylized shading and shadows are memorable, but they may destroy scenes that rely on lighting and shadows to build an atmosphere. However, with these restrictions in mind during development, you can achieve an extremely impressive and memorable stylized visual experience.

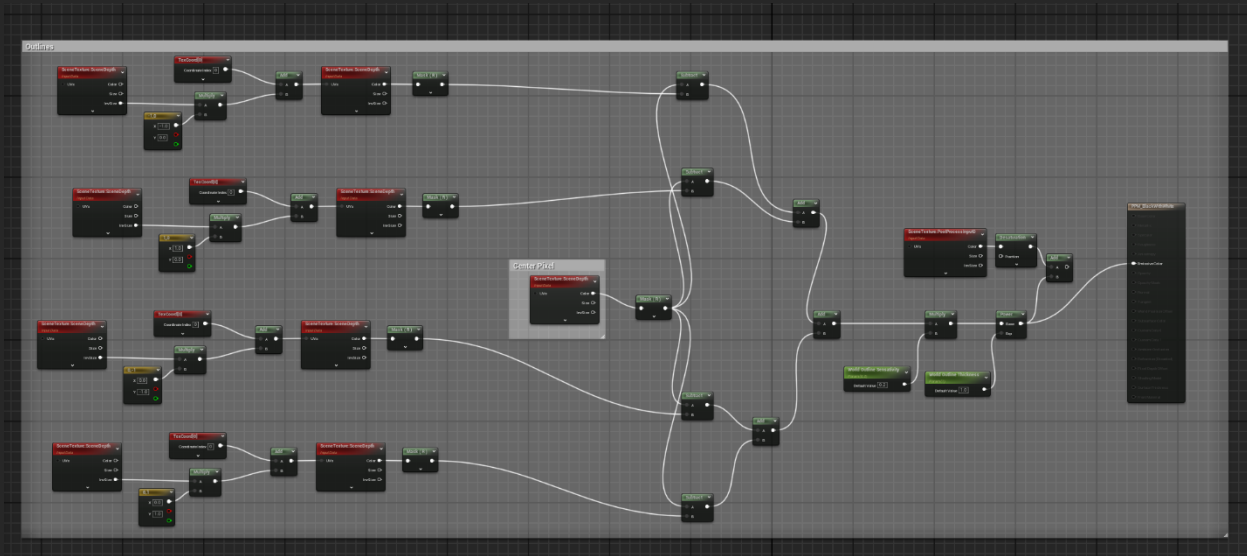
Vector line

Early arcade games utilized vector lines instead of pixels. The line graphics impart a retro-futuristic, minimalist vibe that is distinct and memorable. Examples include Asteroids and Tempest.

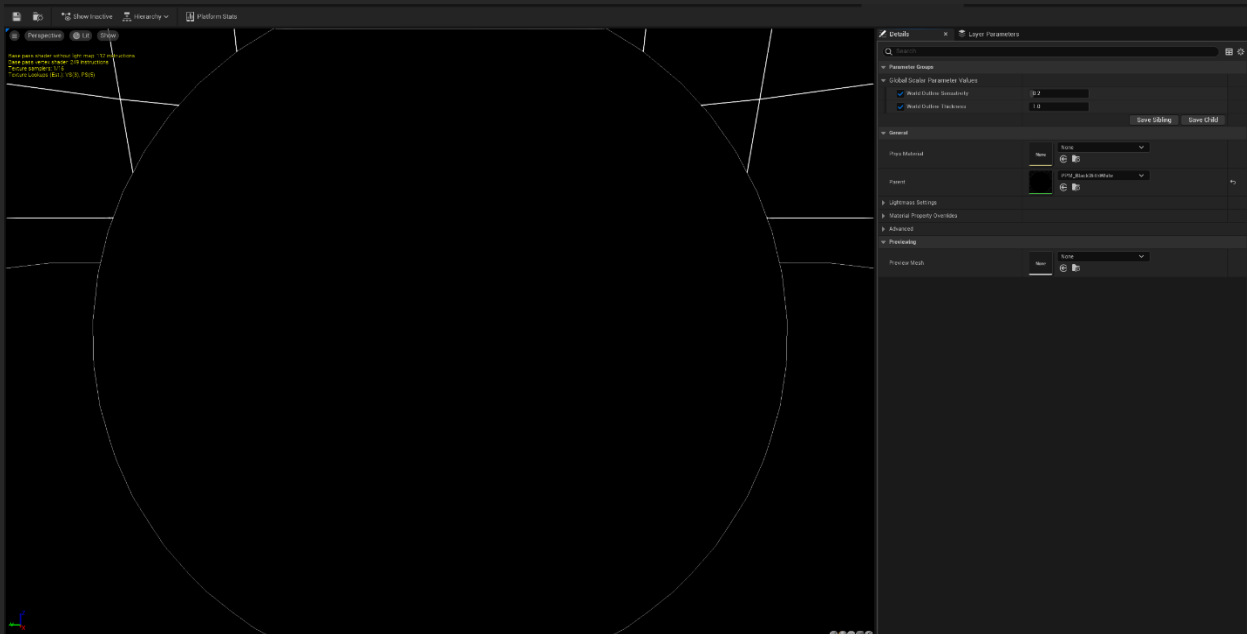


Vib-Ribbon 1999

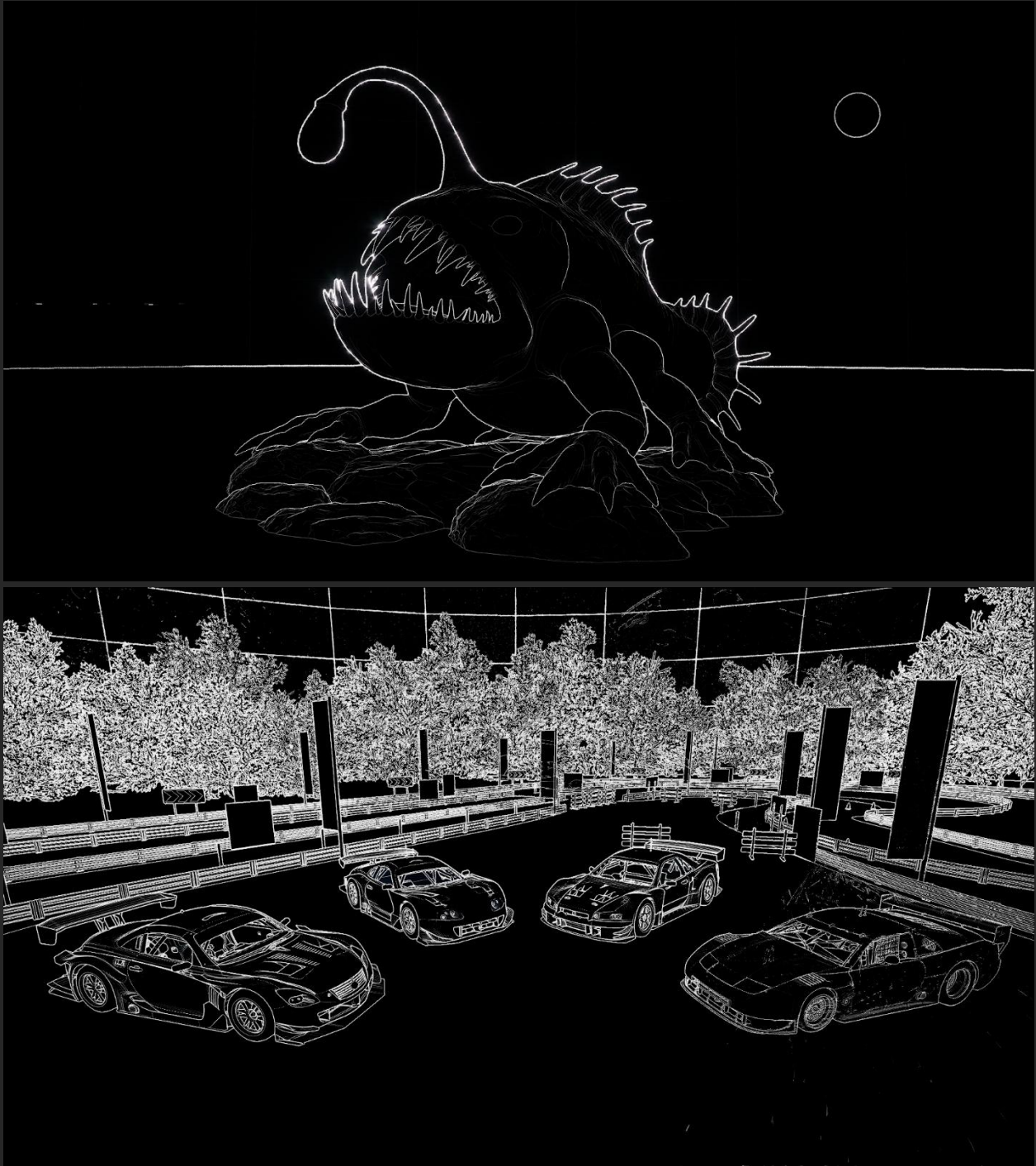
Vector Line Post processing material Blueprint-



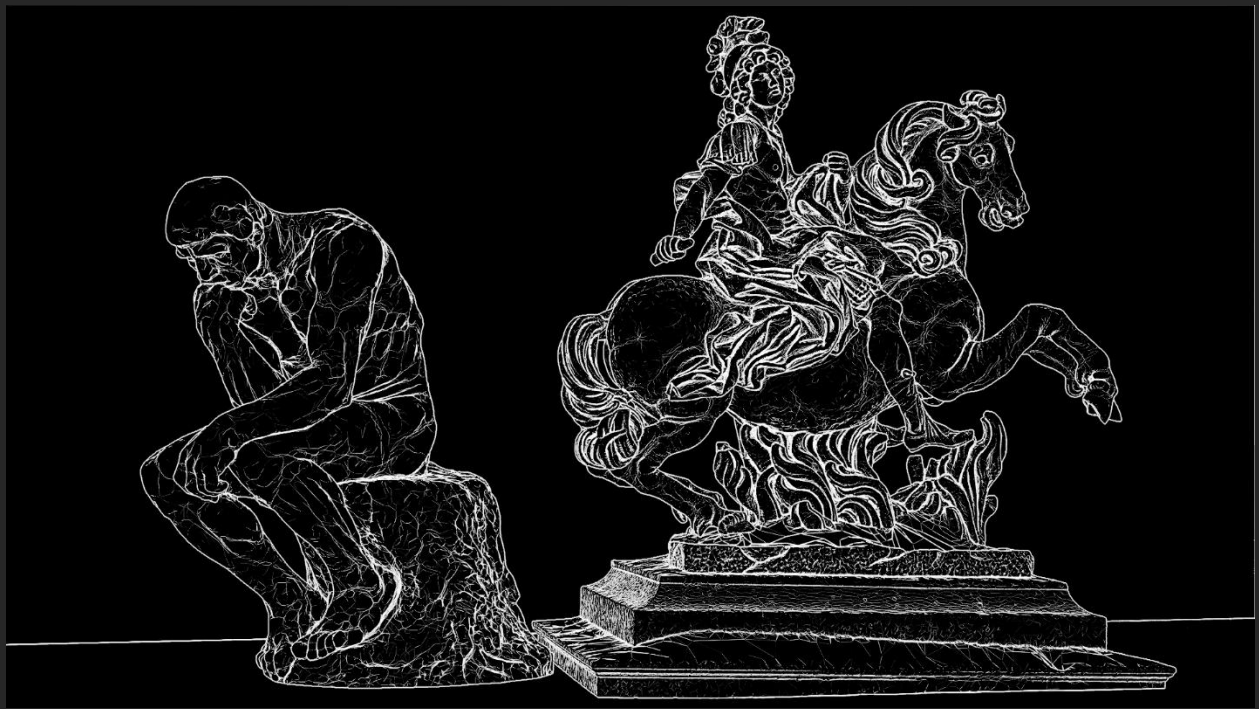
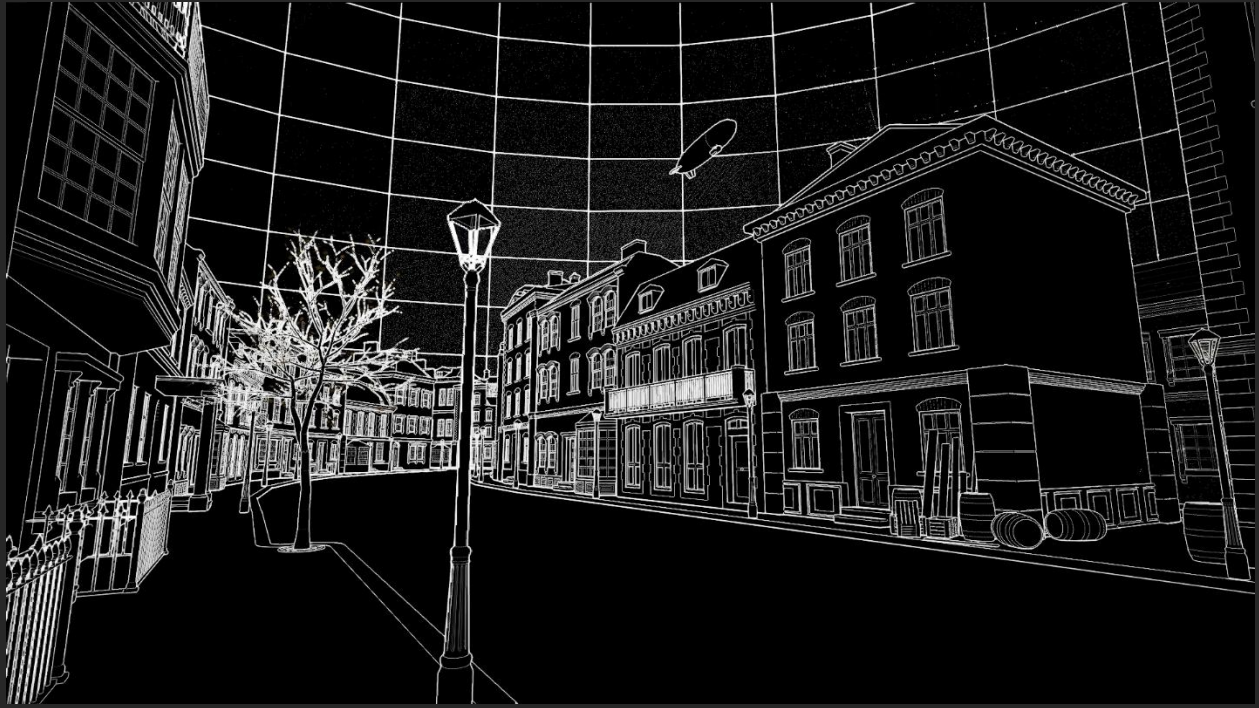
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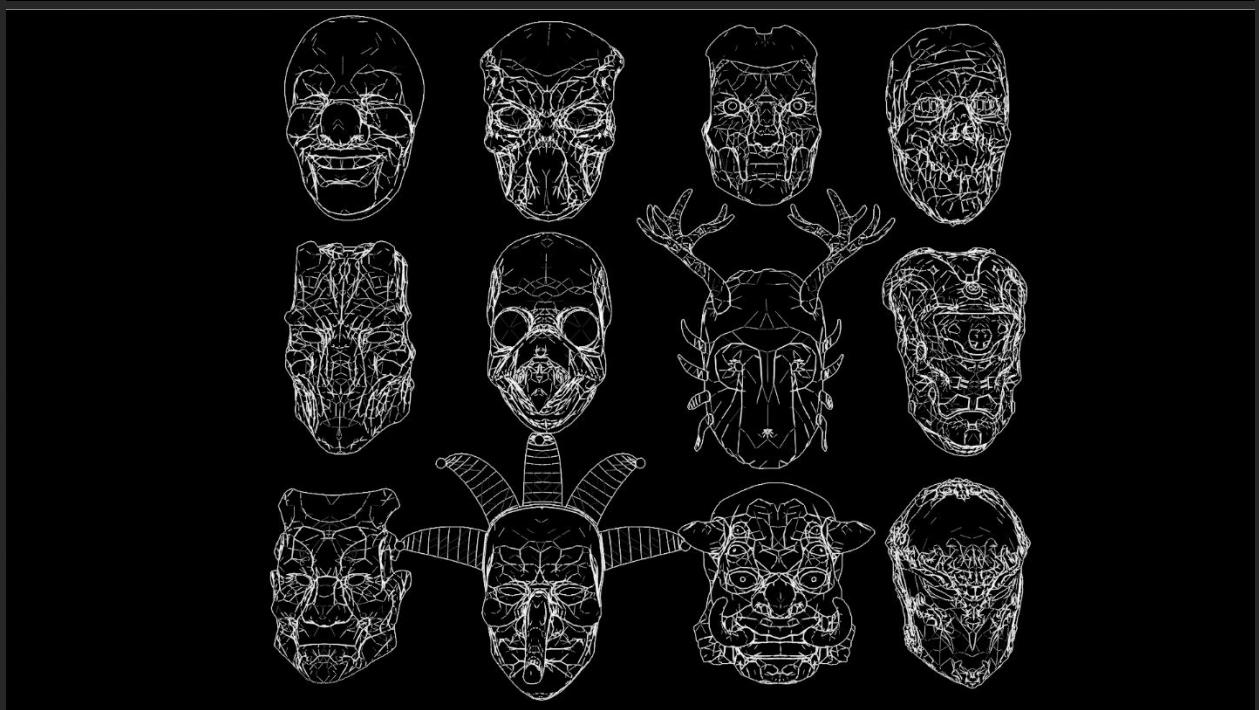


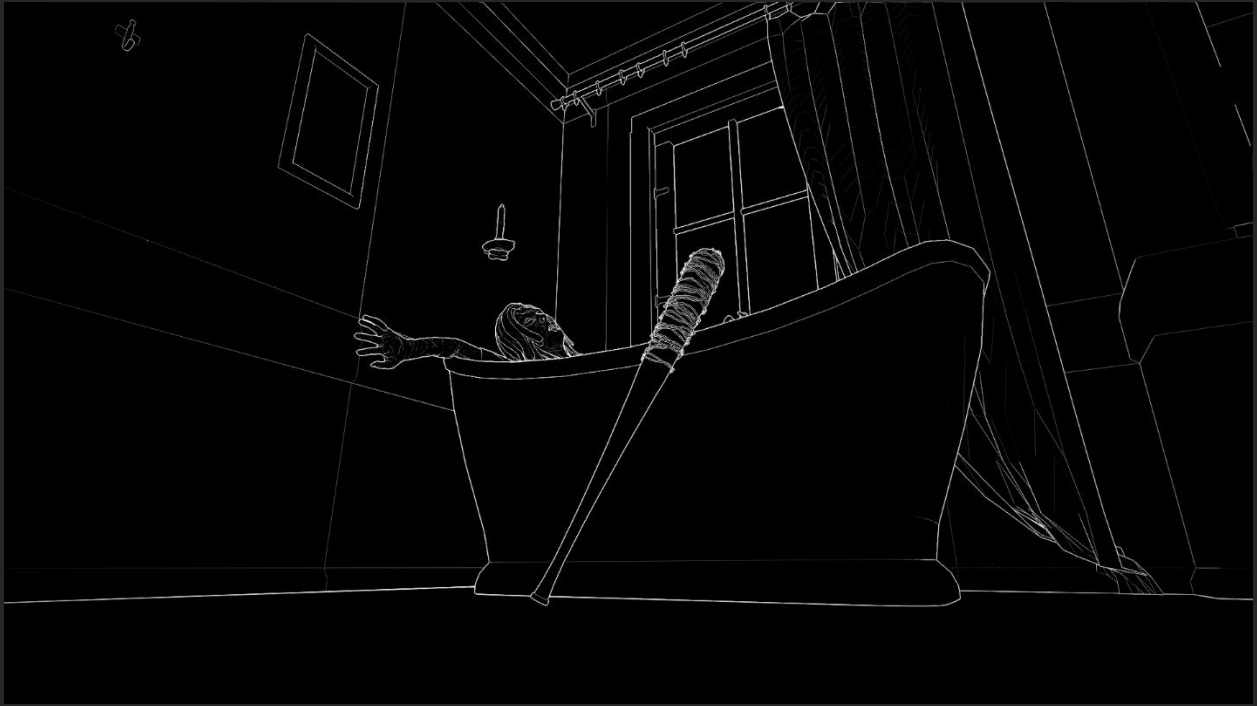
Renders











Review

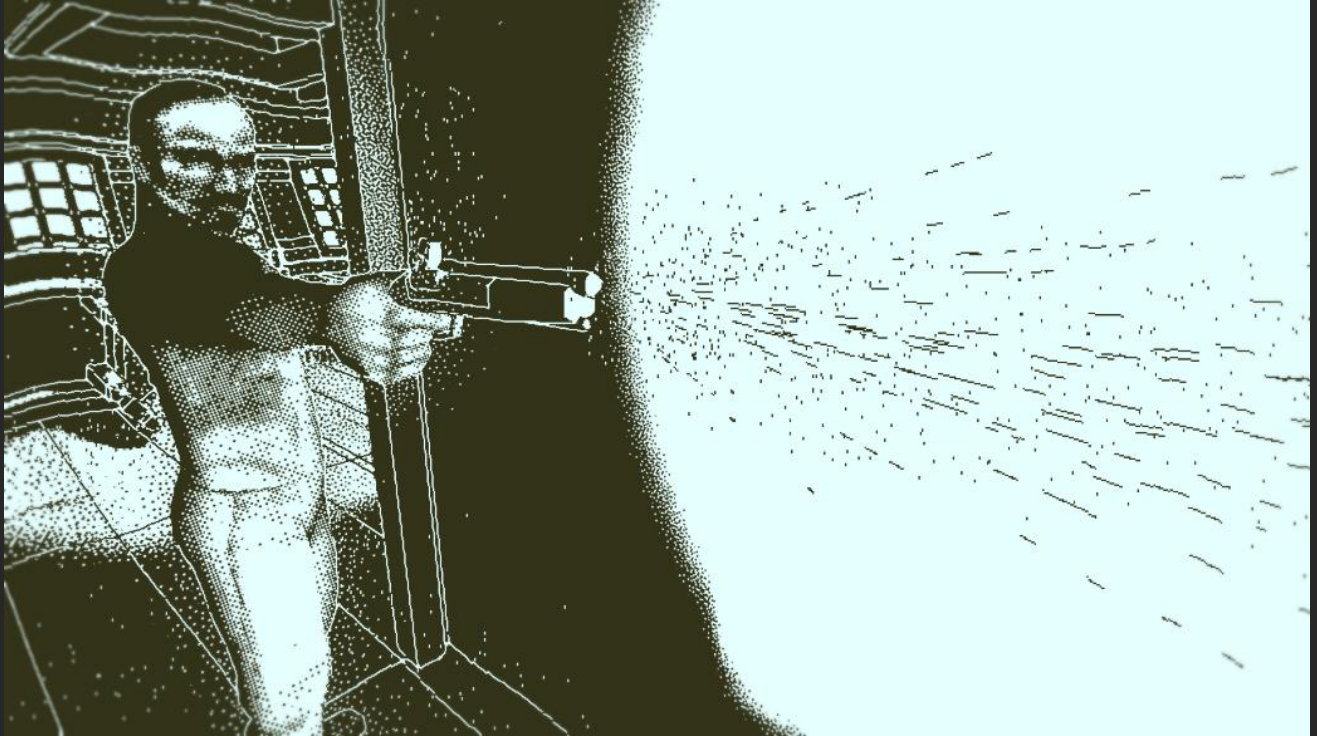
Pros: This vector line art style highlights details and defines geometry in a digitally mesmerising way. For example, the Mech Suit, Masks, and Statues' details are highlighted, revealing elements that would have been obscured with other art styles. The City scene and the Town scene have been completely transformed, as this art style has defined every detail of the models, providing the scenes with more clarity and transforming it to be a minimalist aesthetic due to the absence of colour.

Cons: The minimalist approach has destroyed the atmosphere of the Bat scene and the Blobfish Man scene due to the lack of colour, lighting, and shadows. It has also eliminated the personality of the cars in the racing scene.

Conclusion: This art style works exceptionally well with models that possess intricate geometry and details. It offers a minimalist and mesmerizing visual experience with sharp outlines. However, this minimalist approach is not universally appealing, as it may be perceived as too primitive to capture a modern gamer's attention. The use of a stark black background with sharp white lines can become repetitive. Nevertheless, if the objective is to replicate the retro arcade game art style, this retro-futuristic style can be mesmerising with the optimised models.

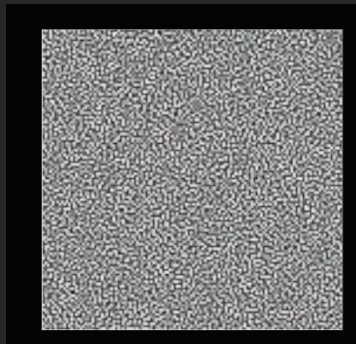
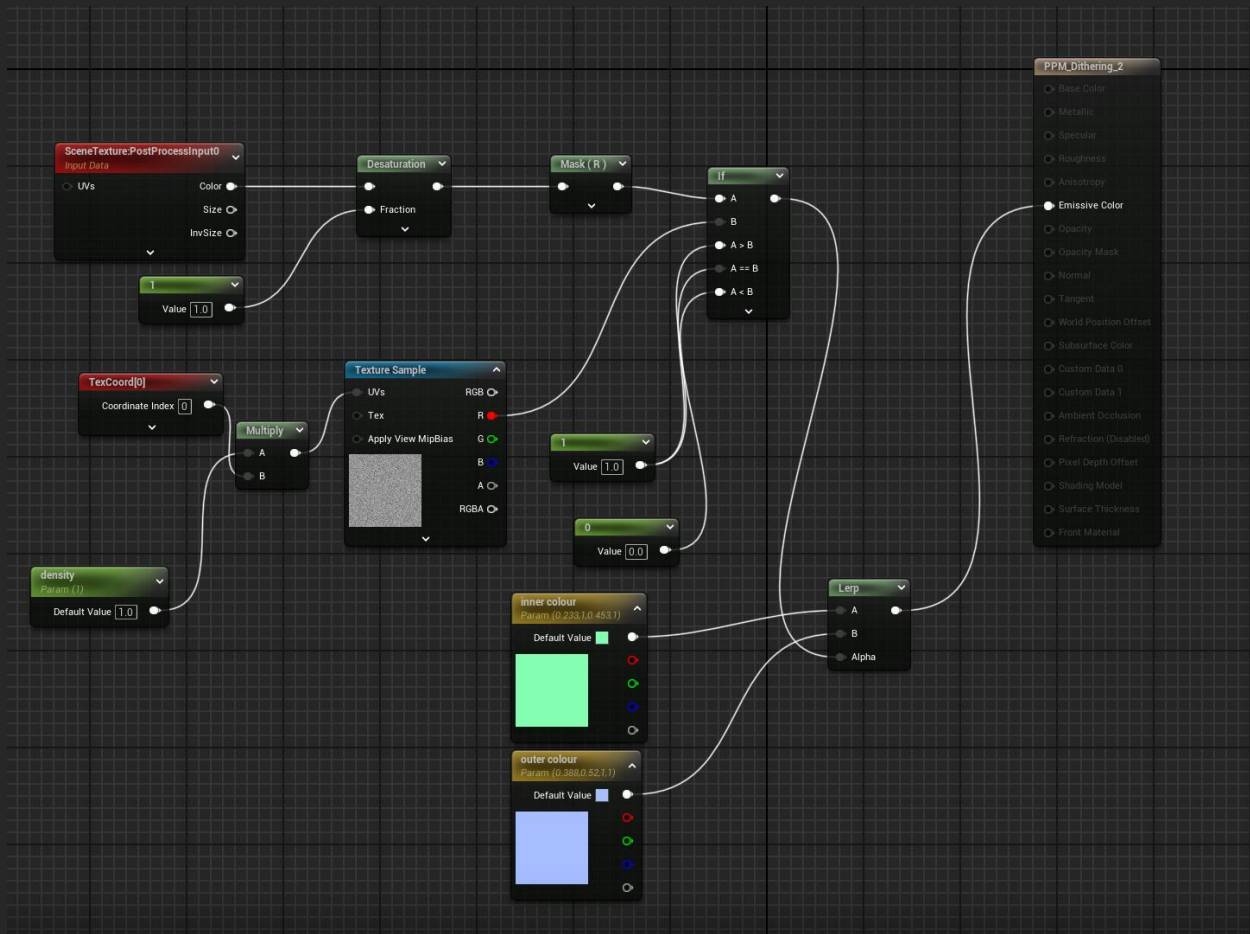
Dithering

The Return of the Obra Dinn graphical style makes this game stand out and significantly enhances its uniqueness. Its art style is extremely atmospheric and builds tension effectively within the game. This distinct and memorable visual style has lingered in players' minds long after completing the game. The art style technique used is called dithering, which is used to create the illusion of colour depth, compensating for the limited colour palettes of older systems.



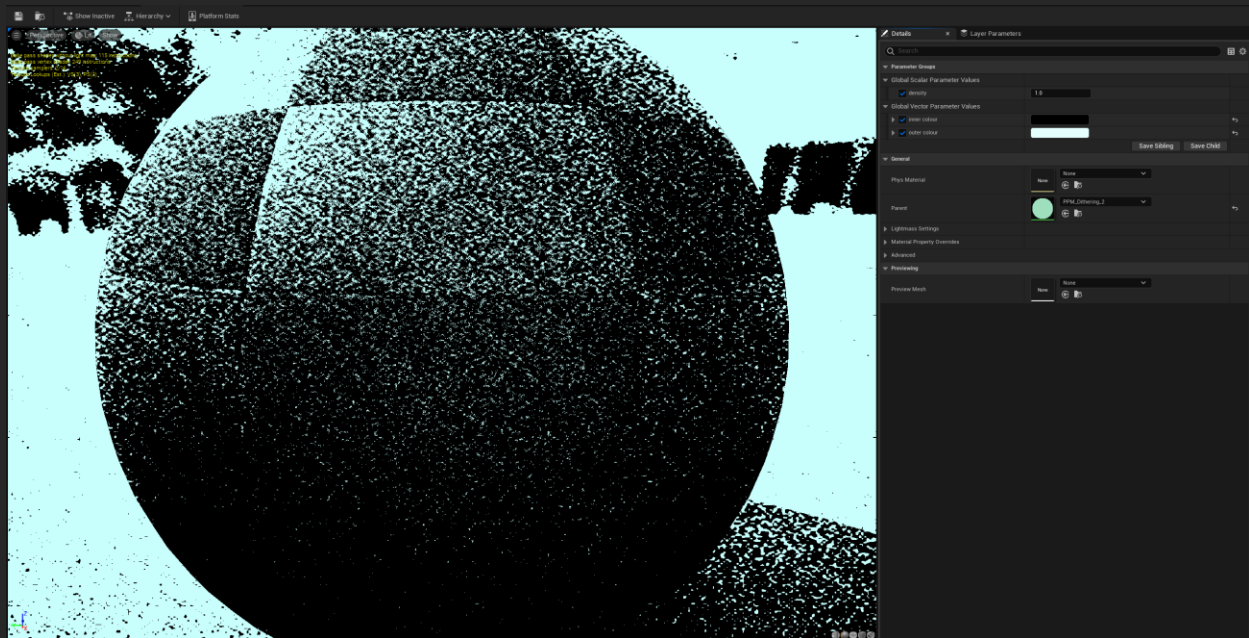
Return Of The Obra Dinn 2018

Dithering Post processing material Blueprint-



This is the texture I used.

This is my material Instance customisable settings:



Renders











Review

Pros: The art style deepens the horror atmosphere, as seen in the Bat and Angler Fish Monster scenes. The two-colour dithering creates a stark contrast between dark and bright areas, enhancing the scariness of the horror scenes. It also creates depth and texture within its limitations. This is evident in the skin texture of the Angler Fish Monster.

Cons: The two-colour limitation is its biggest weakness, as it does not work well in bright scenes, such as the Town scene. The bright daylight on the buildings and the dark shadows obscuring details and geometry.

Conclusion: This art style works perfectly with dark horror settings, as its use of colours can intensify dark scenes while making lighter parts of the scene more visible and prominent. The contrasting colours effectively highlight characters and objects whilst building an effective horror atmosphere.

Black and White With film grain

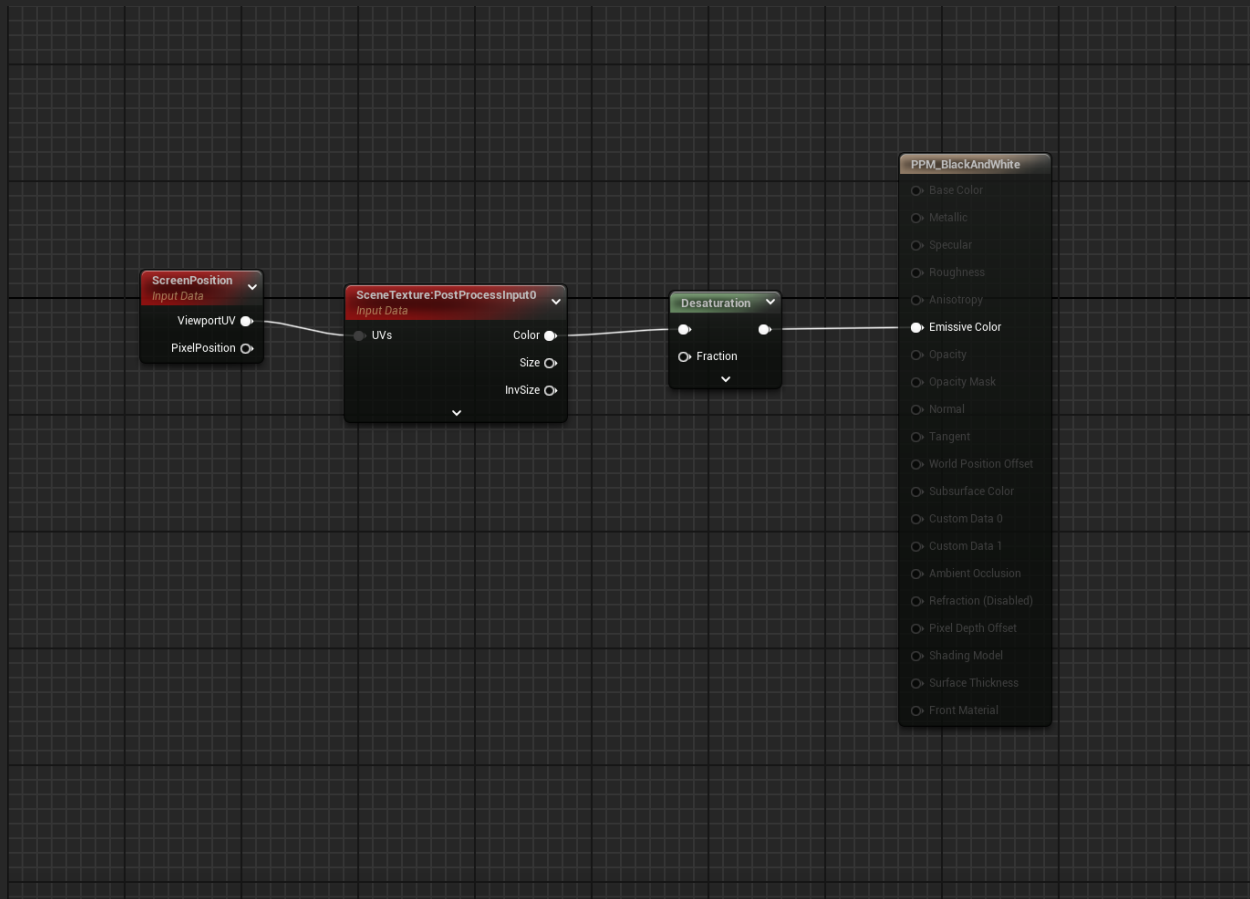
This art style aims to capture the look of early film recording technology. In gaming, it is most commonly used in thriller, detective and horror games, as its two-colour palette creates a moody atmospheric experience. The stark contrast between black levels and whites results in deeper blacks and brighter whites. For example, the game *Limbo* uses this art style to create a haunting atmosphere. The silhouettes of monsters are difficult to discern in the shadows, as they blend into the darkness, leading to high tension and panic during attacks.



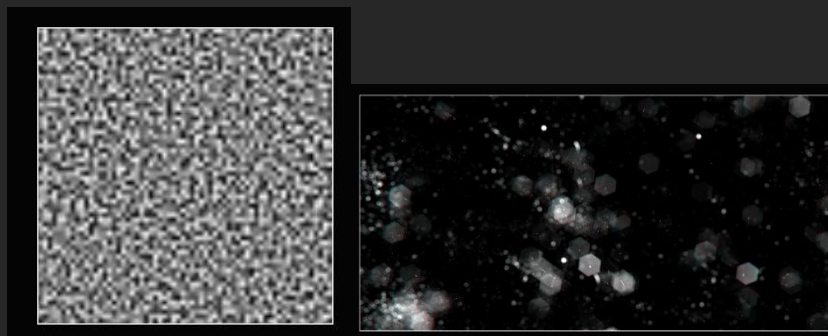
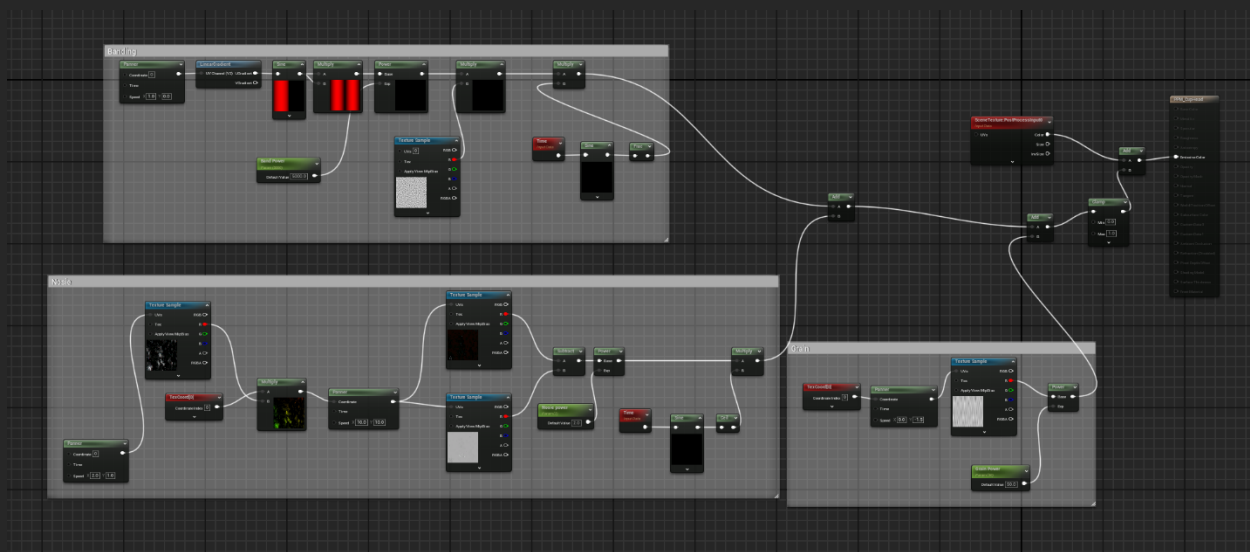
Mouse P.I. For Hire 2025

Black and White with Film Grain Post processing material Blueprint-

This my Black and White Blueprint:

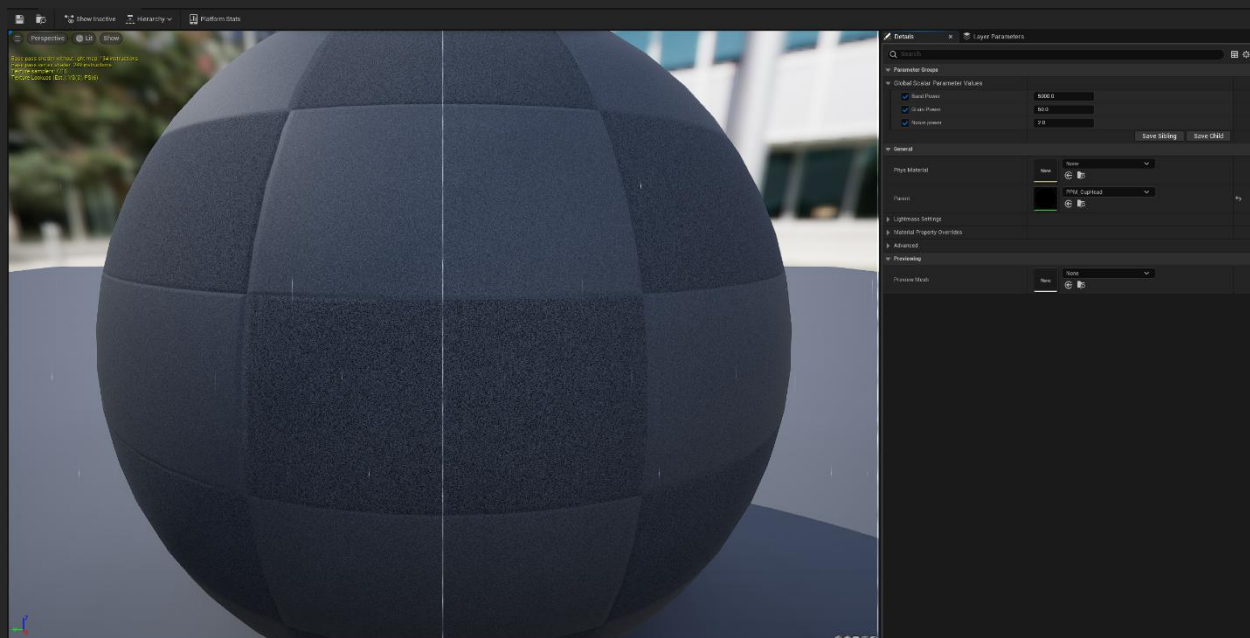


This my Film Grain Blueprint:



These are the textures I used.

This is my material Instance customisable settings:



Renders

Please click the videos below to play them:













Review

Pros: This art style is highly atmospheric, as seen in the Bat scene. The black and white colours have highlighted the bat while subtly obscuring the woman in the bath. This makes the scene more mysterious and atmospheric, as the full story is not immediately apparent. You need to examine the scene closely to discern the details and construct the narrative.

This art style creates an aging effect, as seen in the Town and Tank scenes. It imparts an vintage feel to the scenes, as the film grain and dirt marks emulate the look of old film.

Cons: The vintage film style does not work well with modern scenes and objects, as seen in the car scene. Additionally, the removal of colour has diminished the appealing visuals of the Mech Suit.

Conclusion: If you are trying to create a vintage and atmospheric film aesthetic, this art style is very effective. It also works well for horror scenes, as it adds a mysterious atmosphere. However, the removal of colour can detract from scenes that rely on colour to make the main subject stand out. Furthermore, the vintage look can be detrimental to modern scenes, as it does not make sense to capture modern settings with retro technology.

Cartoon art style

I have combined my film grain post-processing material with my cell shading and outline post-processing material to replicate a traditional animation style. A game that exemplifies this perfectly is Cuphead, which uses this art style to capture the traditional cel animation style of the 1930s. This art style evokes a nostalgic and friendly feeling, capturing the pure essence of cartoon joy and wonder. The art style, coupled with the gameplay, contributed to its massive success.

I also created another version by combining the black and white post-processing material, film grain post-processing material, and my cell shading and outline post-processing material to replicate an earlier animation style, such as that of Steamboat Willie.

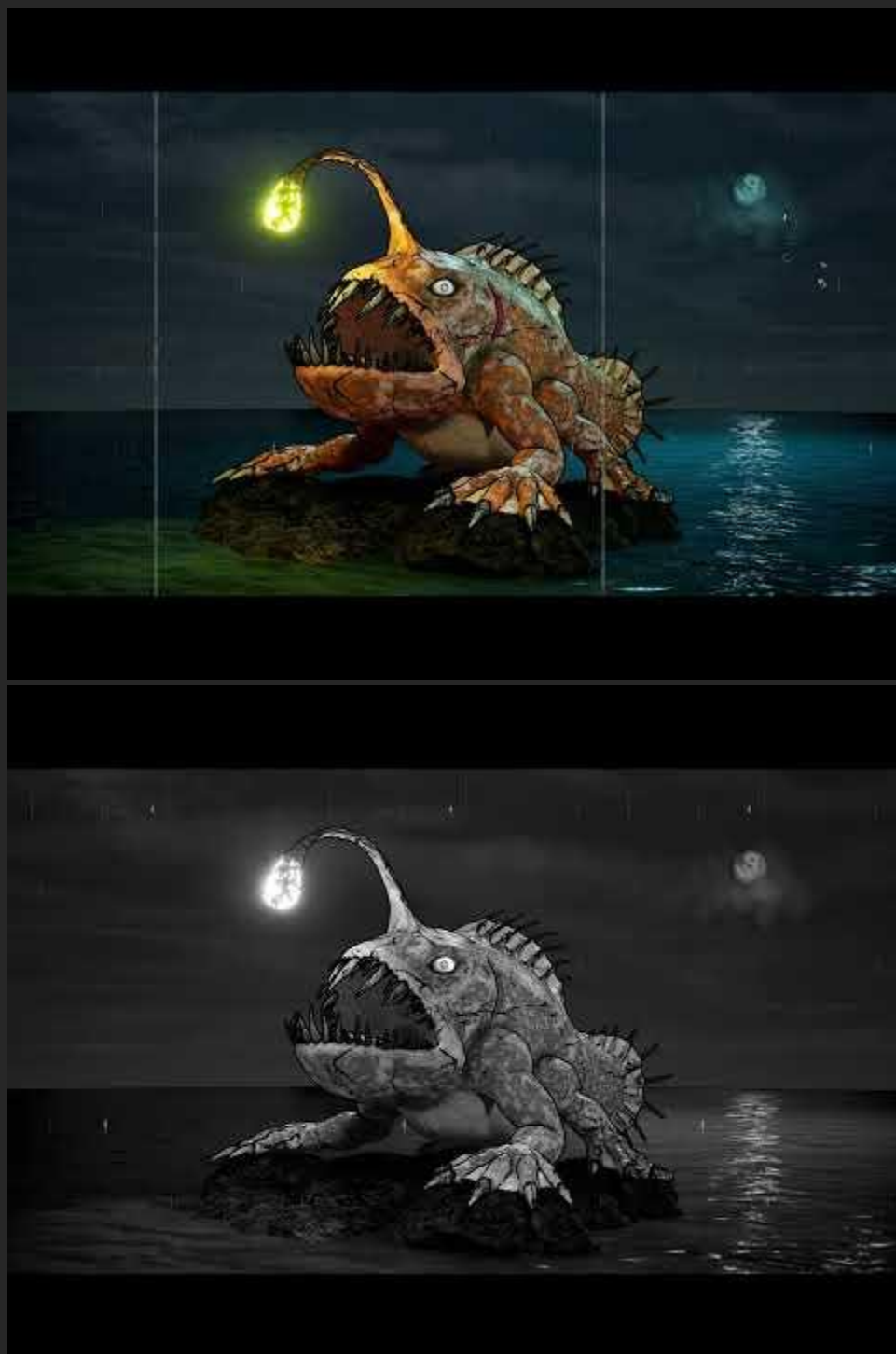


Cuphead 2017

Renders

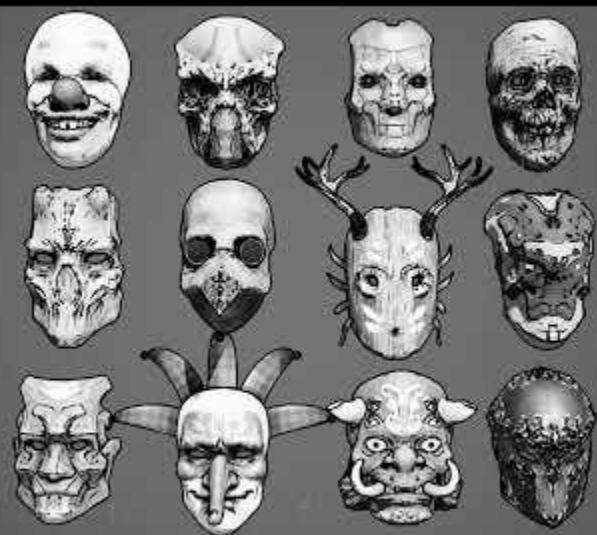
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Review

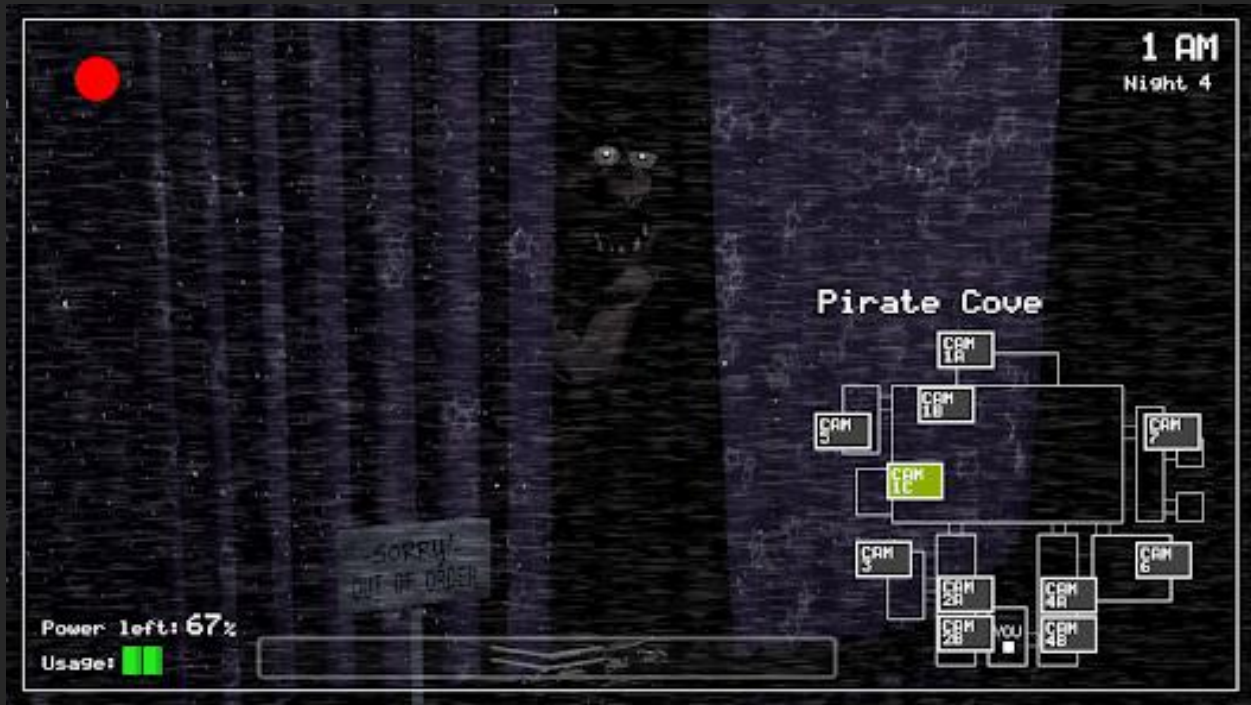
Pros: Each mask's personality and details shine in the full-colour version. The black and white version adds a greater nostalgic feeling to the town and city scenes, as its minimalist approach to colour emphasizes the building structures themselves.

Cons: The animation style may not work for many genres. As seen in the Bat and Angler Fish scenes, they are no longer horrific and lack atmosphere. They also seem don't make sense in the car scene, as modern cars clash with the old-fashioned animation style.

Conclusion: This art style replicates a traditional cartoon aesthetic, which is highly nostalgic for many people and, as a result, has become timeless. This, in turn, limits its use in some genres, as the art style is often perceived as kid-friendly, unconsciously leading viewers to think it is a children's game. However, when used correctly, this art style is highly appealing to a wide audience, and its popularity in Cuphead has demonstrated the significant potential for more traditional animation style experiences.

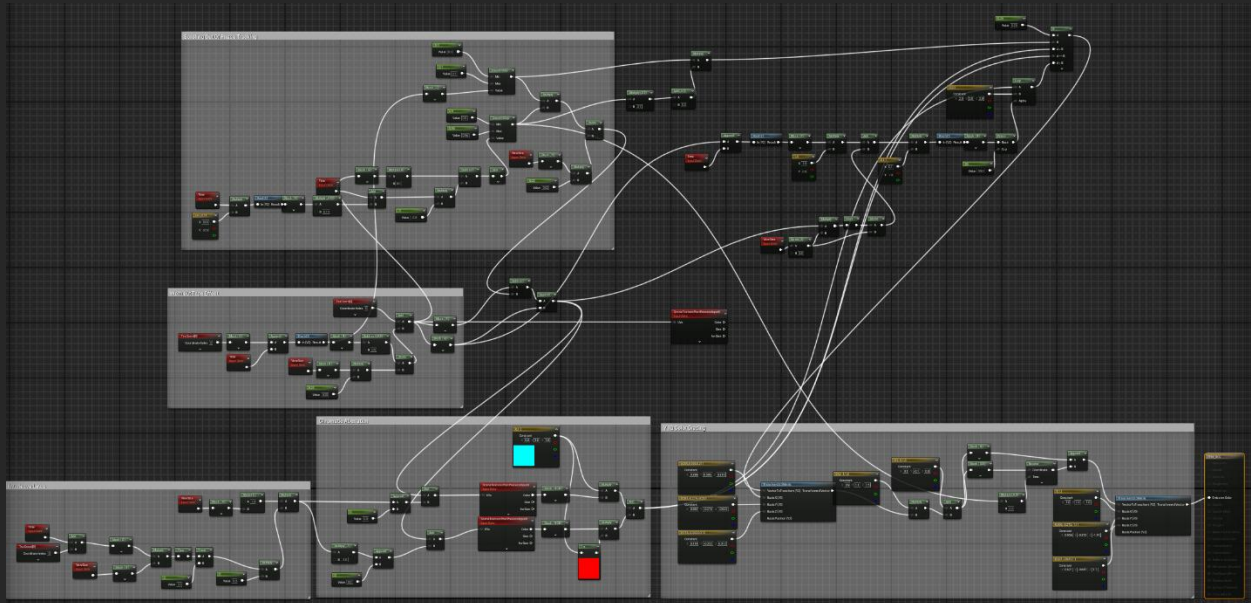
VHS

The VHS art style uses limitations and visual errors to replicate the experience of a traditional consumer VHS player. Its lack of detail and blurry visuals are perfect for horror, as they evoke a homemade and found footage feeling. This enhances a horror game by creating a realistic and believable atmosphere.

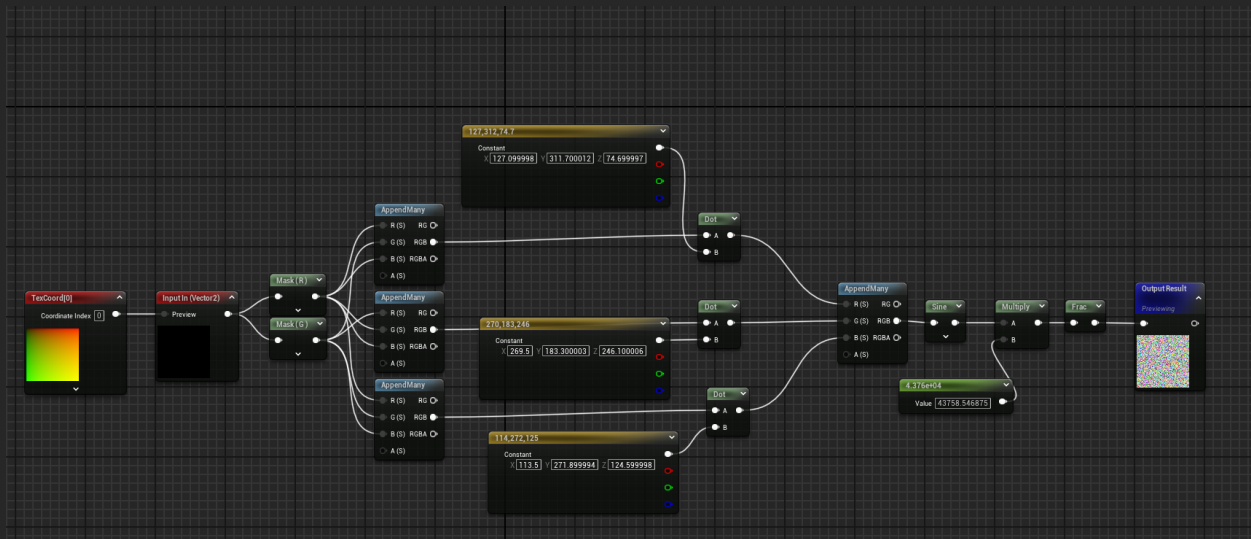


Five Nights At Freddys 2014

VHS Post processing material Blueprint-



This is Material functions: Please click the videos below to play them.



Renders

Please click the videos below to play them:











Review

Pros: The VHS art style brings a nostalgic and homemade feeling to the Town, City, Tank, Statue, and Car scenes, as they feel like real-world events that someone would record. This is also true for the Bat horror scene, which gains a more horrific feeling, as it seems like a real event captured on tape. The Mech Suit scene has a nostalgic feel as it looks like a recorded episode of a cartoon show. The distortion, visual artifacts, and colour values make everything feel less like a prop in a scene and more like a real-world object that someone decided to record.

Cons: This style may only work in the horror genre if the viewer has experienced VHS technology. For example, I have used VHS tapes as a child to watch cartoons and movies, I have developed a positive nostalgia for the visuals. However, for younger people who did not grow up with this as their standard viewing format, the distortion, visual artifacts, and colour values are visually unappealing and may only work in a horror game set in the appropriate time period.

Conclusion: This art style will evoke nostalgia in people who have experienced its visual imperfections, and it works perfectly with horror games to build a terrifying atmosphere. However, outside of the horror setting, it may not be effective, as the degraded visuals will be unappealing to a younger audience unfamiliar with this type of visual distortion.

ASCII

ASCII art was an early way to create art using early computer technology. It uses only keyboard symbols and colours to form an image. This art style evokes strong nostalgia among retro PC gamers and is very striking when executed effectively.

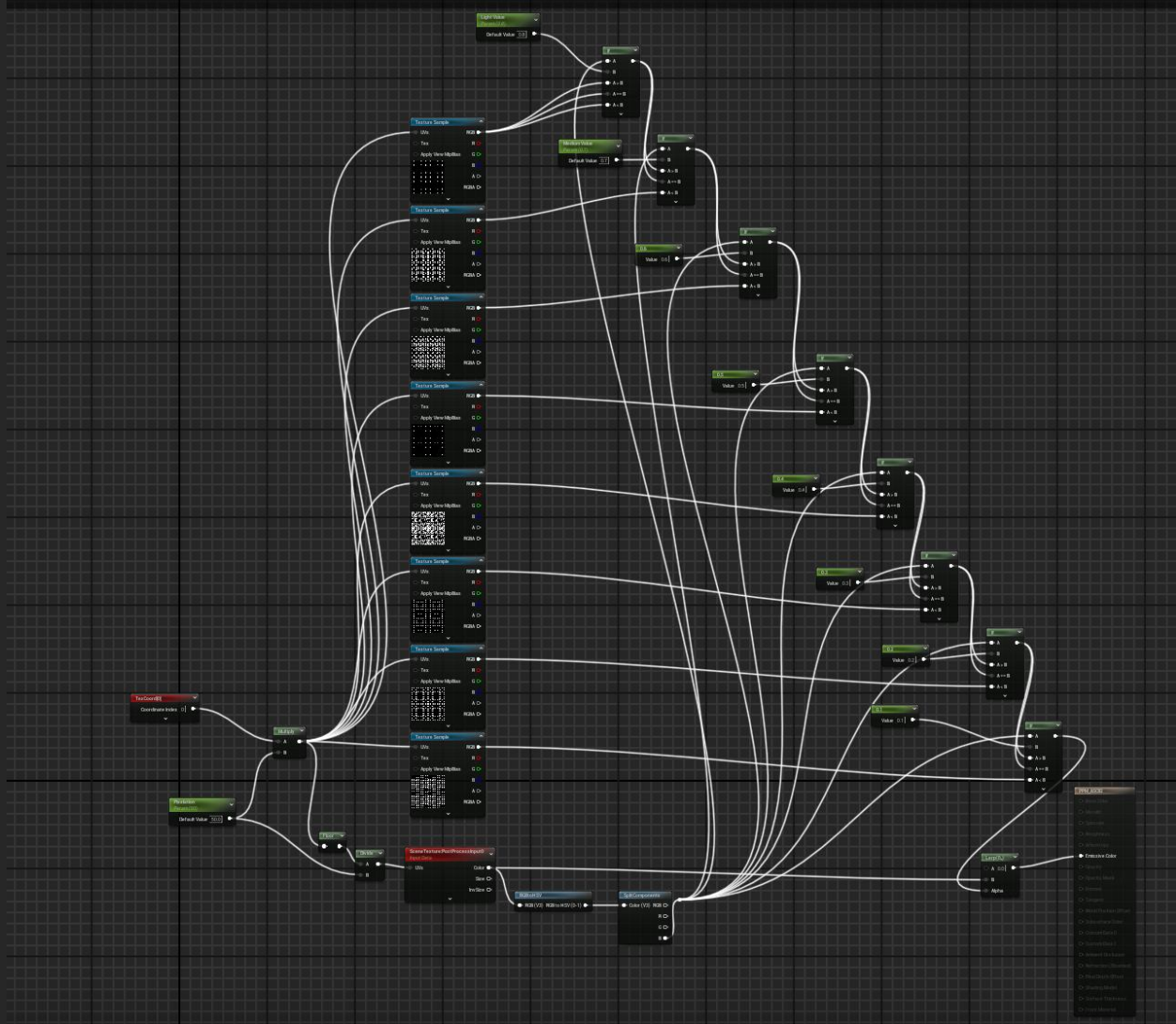
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MX          BM          M2          WB
.M8        MM          M0          WB
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;ZBM87 .S72X7MBR$2XX SBMBa.
iM8 .;2BMMM.:::i:iii:iMMM0Xr :BM
;MMM8: iXXSB:::ir:r:i:7BXXX. XOMMM.
.2WBX .:::i.i:iri:..XCaodemon
rr: .i:..:7?:..r7?:..i. Big. fl
;7:ii:..iii7?:..7rii7?i iXrii:riiThey sp
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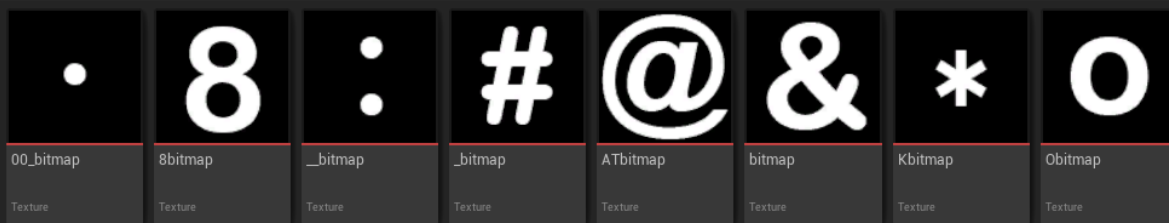
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ASCII Post processing material Blueprint-

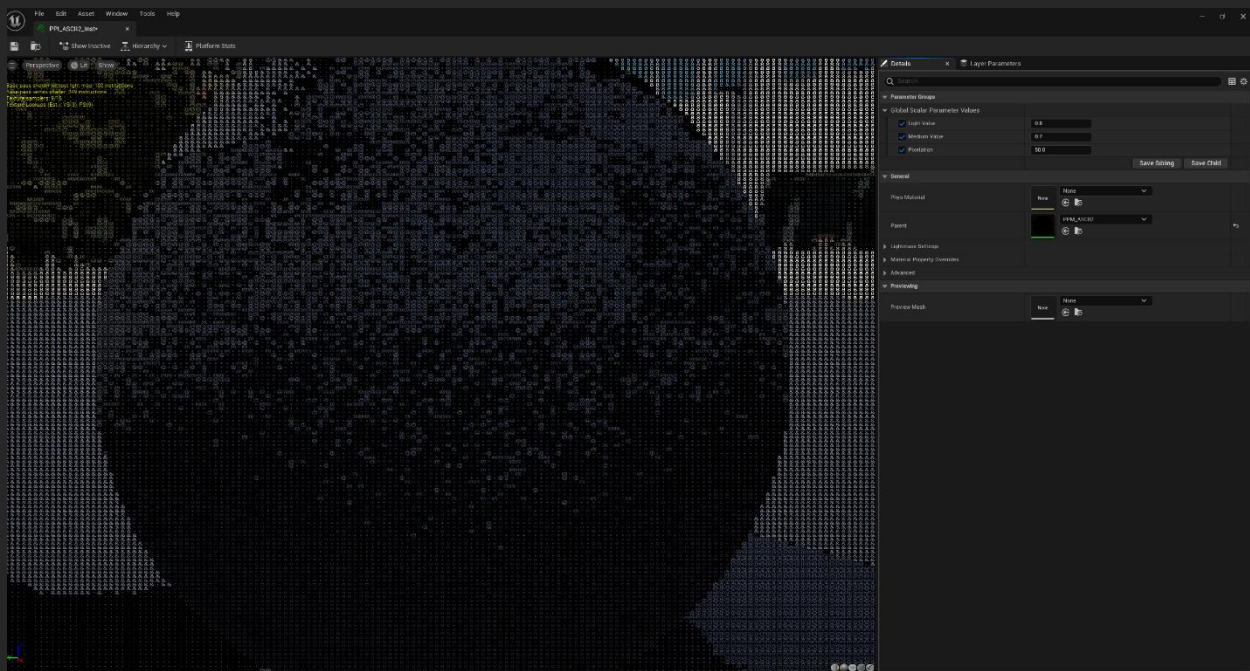
PPM_ASCII2 > Material Graph



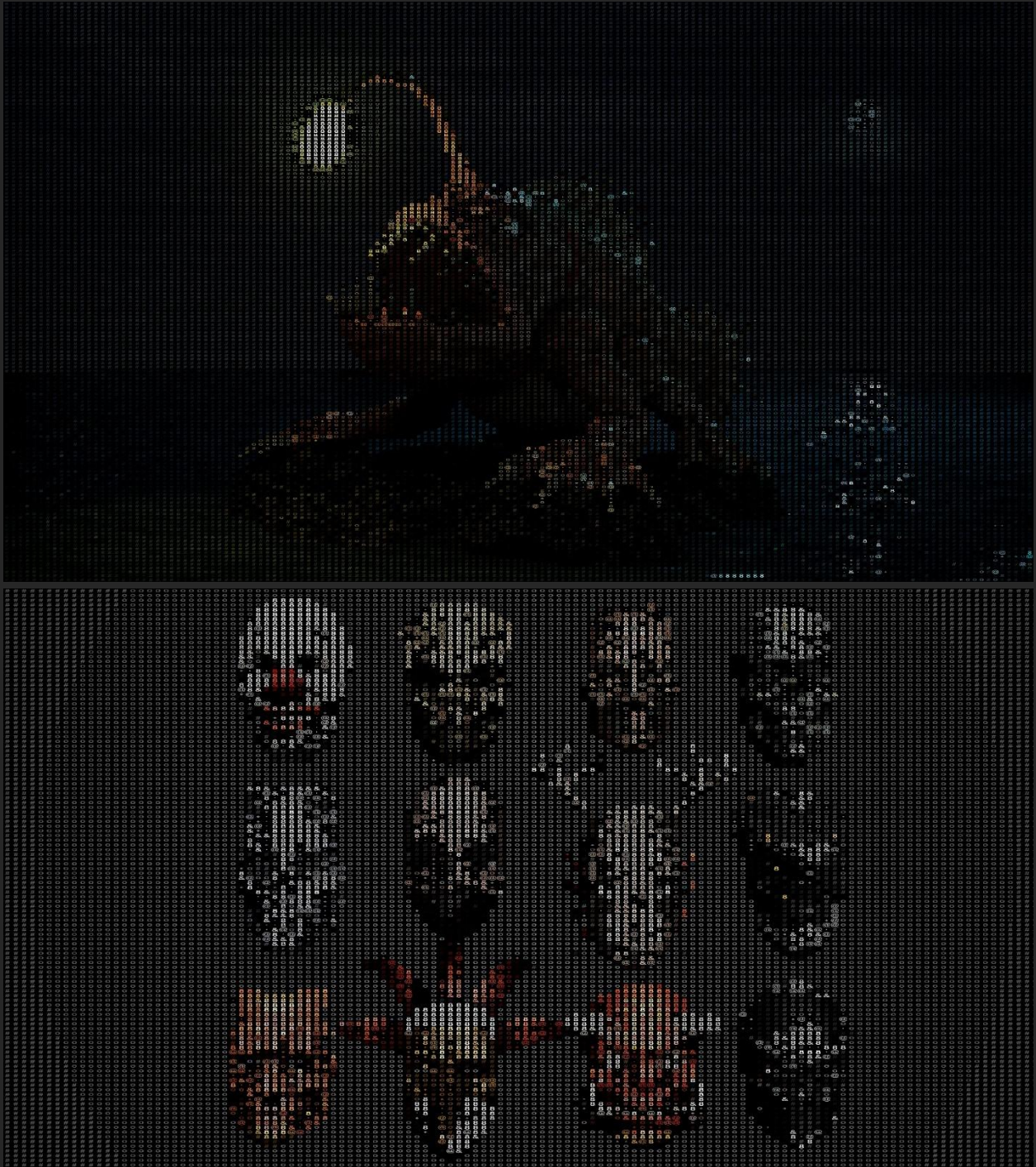
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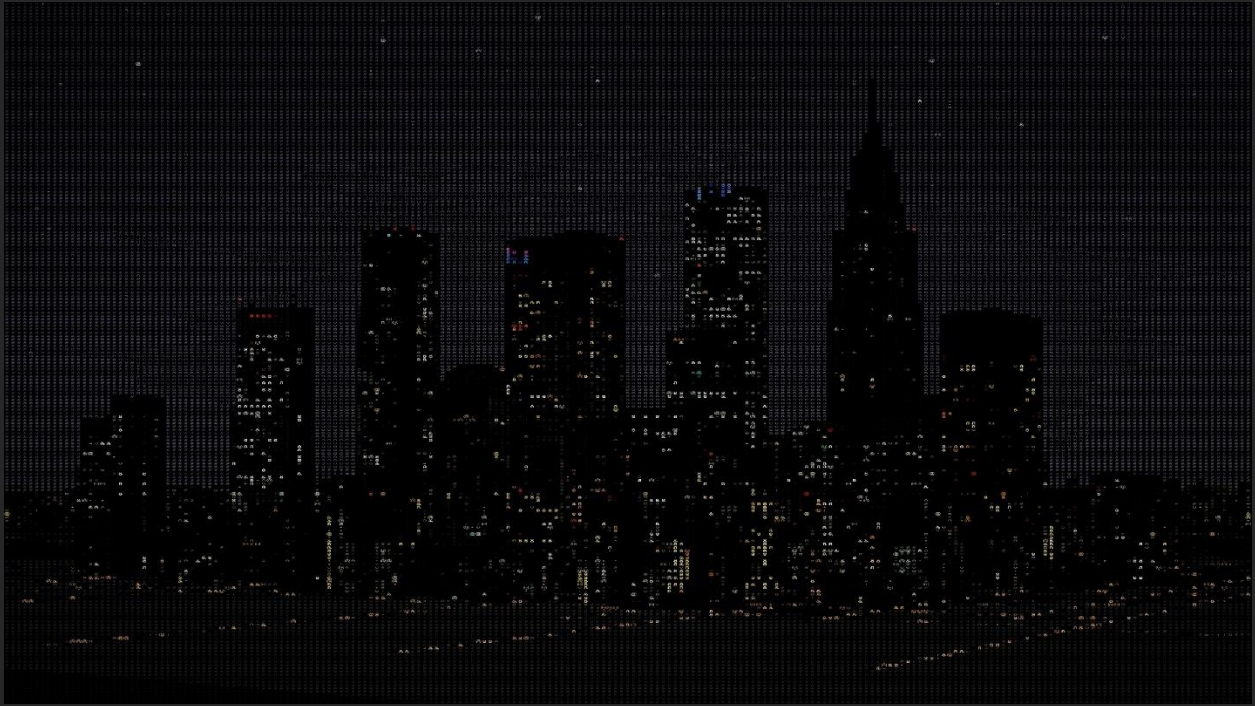


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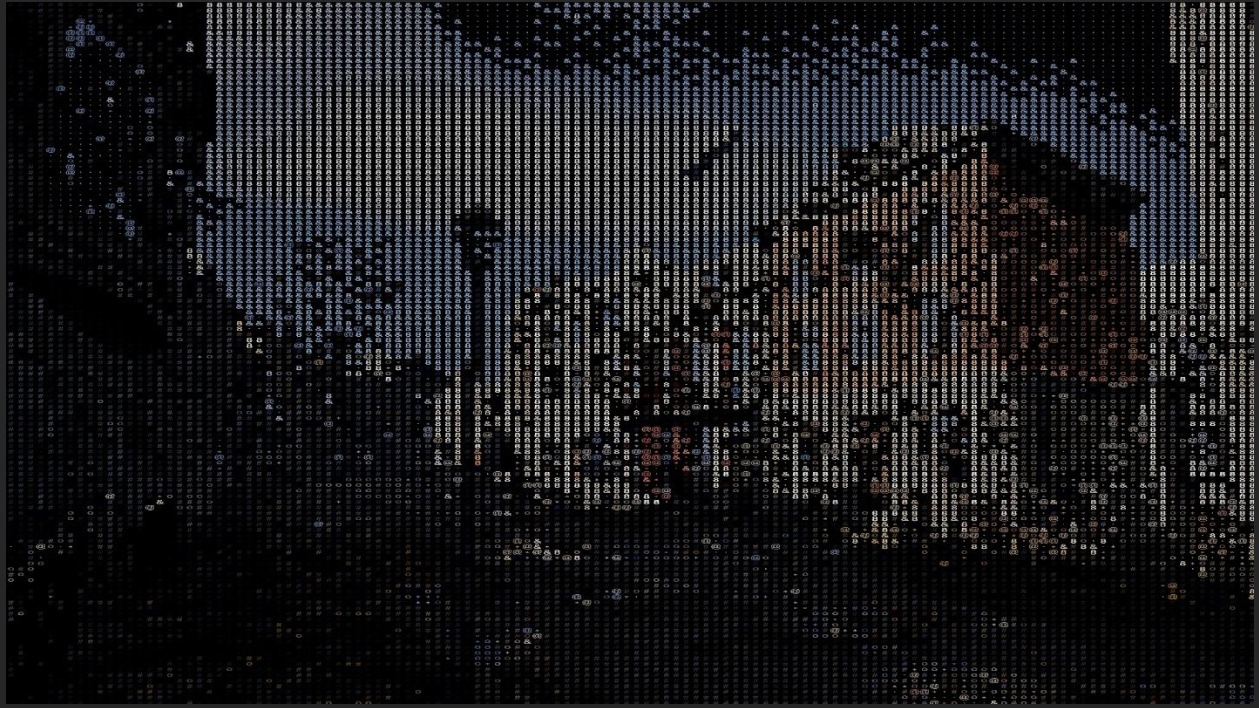


Renders











Review

Pros: The ASCII art style works well when there are bright colours in the scene. For example, the Mech Suit and Cars really stand out, as their bright, contrasting colours help them pop against the background. Also, the statues' details and silhouettes are preserved with the ASCII symbols, giving them an interesting and unique look.

Cons: The ASCII symbol art style is inherently dark. This is because the symbols do not fully occupy the pixel, leaving pure black to fill the unoccupied space. If a smaller symbol is used (for example, a full stop symbol), then there will be more black space to fill the pixel. This, in turn, darkens the scene.

Conclusion: The ASCII art style is striking and bold when its limitations are carefully considered. However, this art style has limited applications, as its constraints are very restrictive and could be a significant deterrent. This art style might only be effective for nostalgic reasons and may be visually too restrictive for a modern-day game.

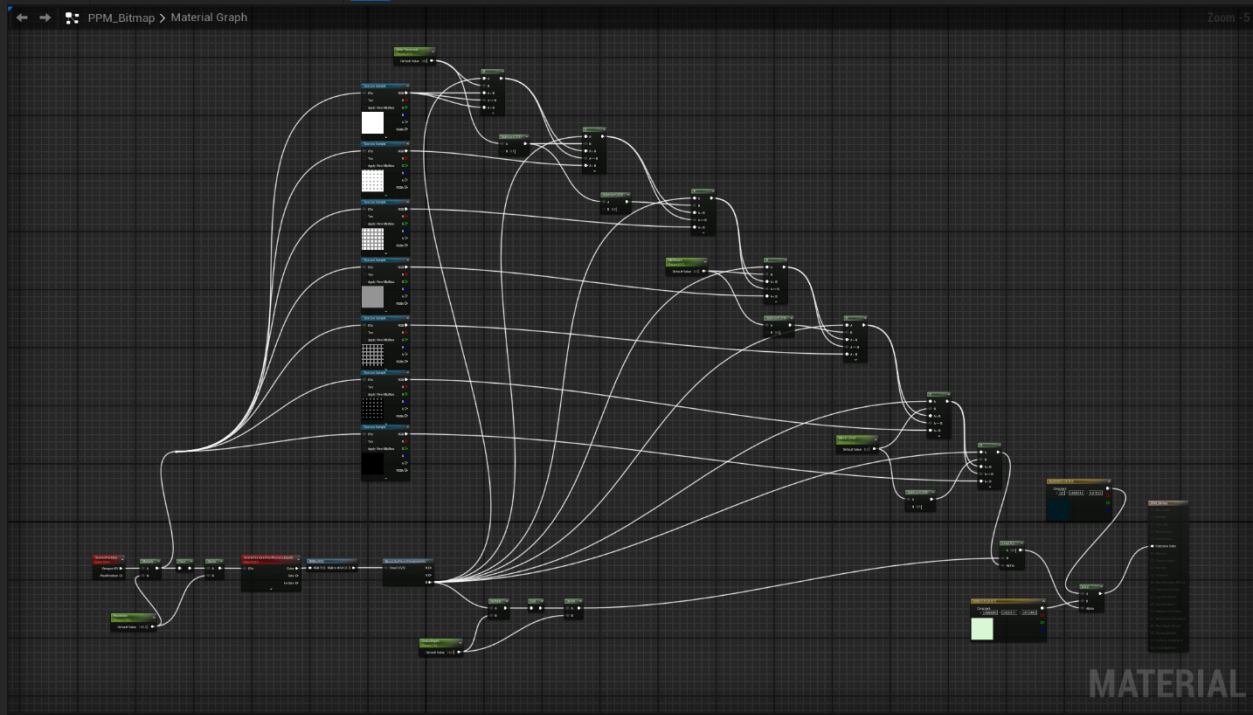
Gameboy

The Game Boy is the fourth best-selling system ever at the time of writing, and there is a fan base nostalgic for its pea-green graphics. My Game Boy post-processing material is more inspired by the Game Boy visuals than being completely faithful to its limitations. If I were to be fully faithful, I would only have a 160x144 pixel resolution to use on scene, which would make my scene unrecognizable.

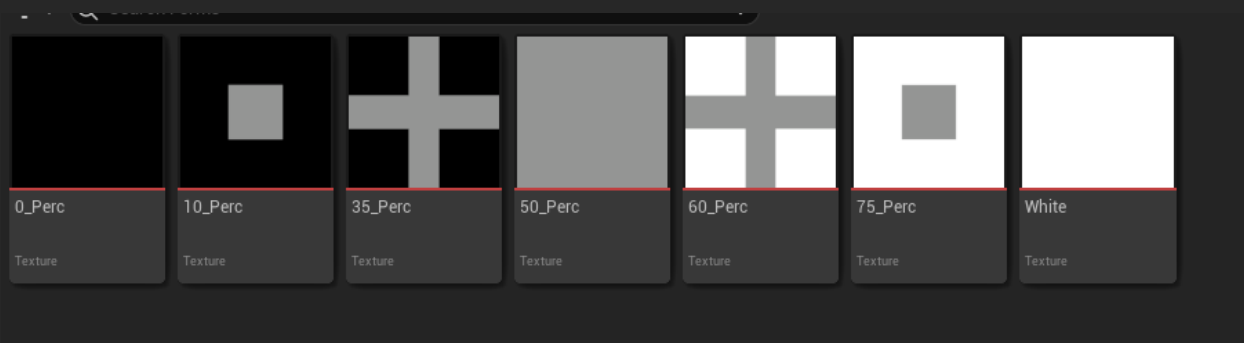


Kirby Dream Land 1992

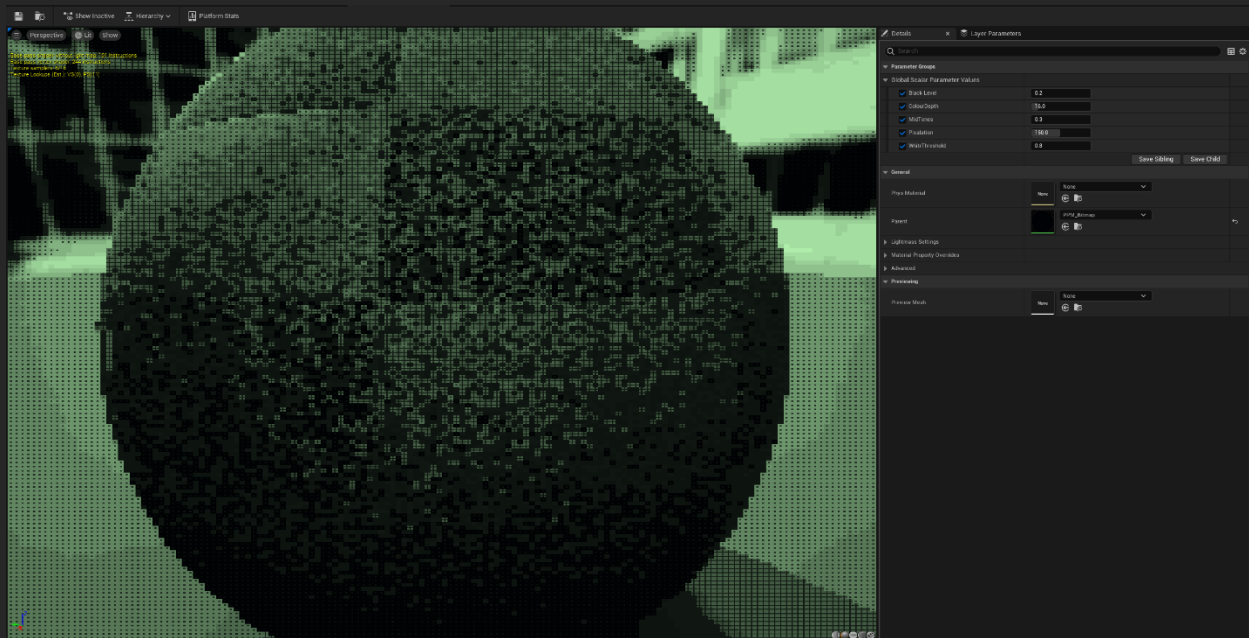
Gameboy Post processing material Blueprint-



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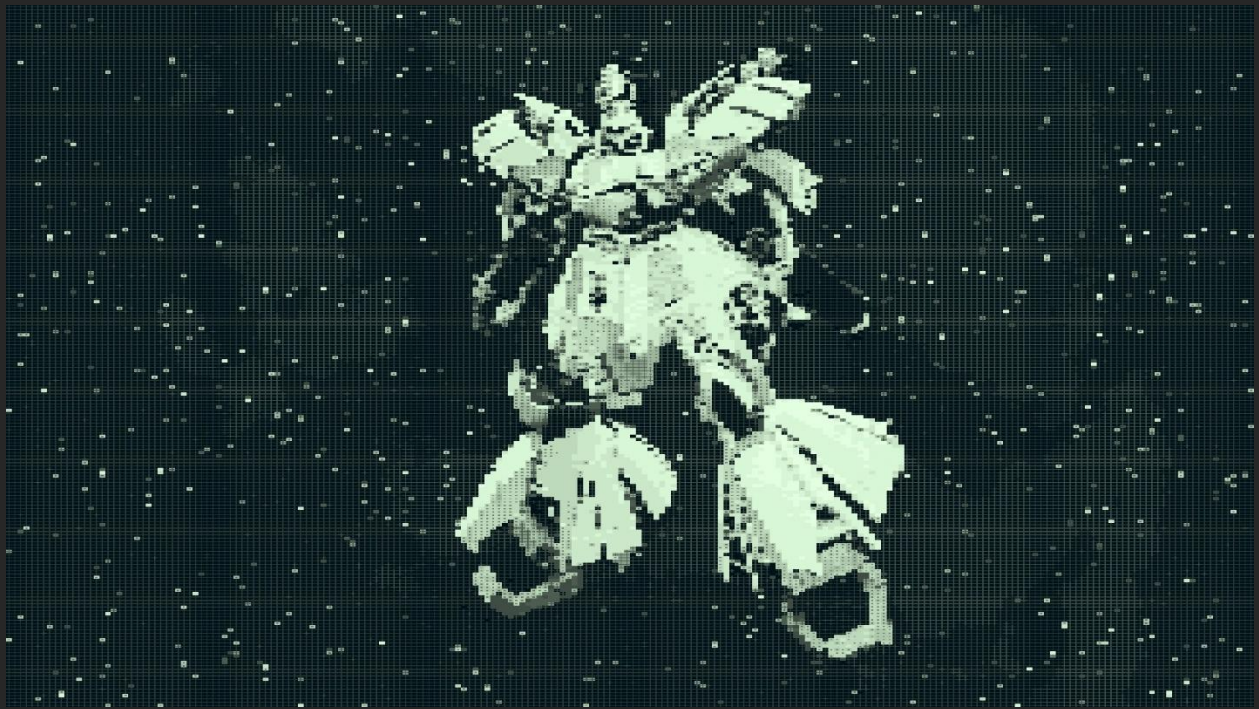
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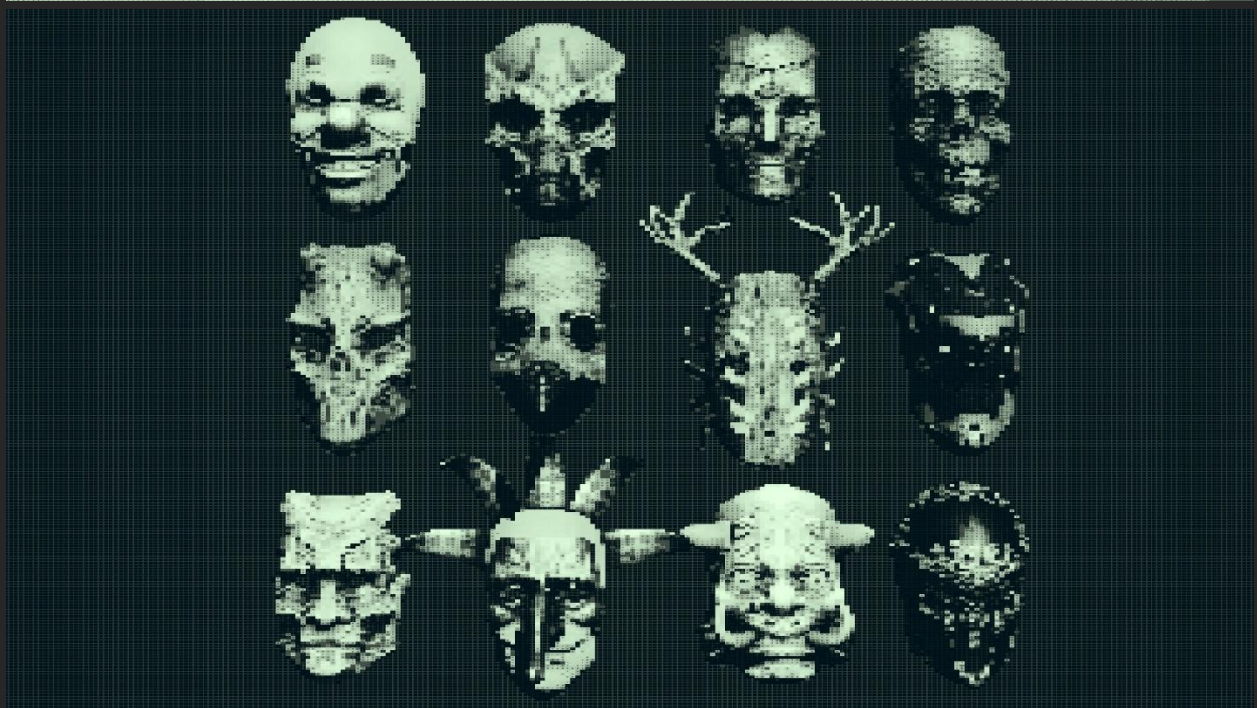


Renders











Review

Pros: The nostalgic limitations of the Game Boy art style work well on character models. For example, the Angler Fish and the Blob Fish Man stand out from the rest of the scene, with their personalities and characters intact. Also, the limitations of the colour palette have created some contrasting light and dark colours that are visually striking in the Statue and City scenes.

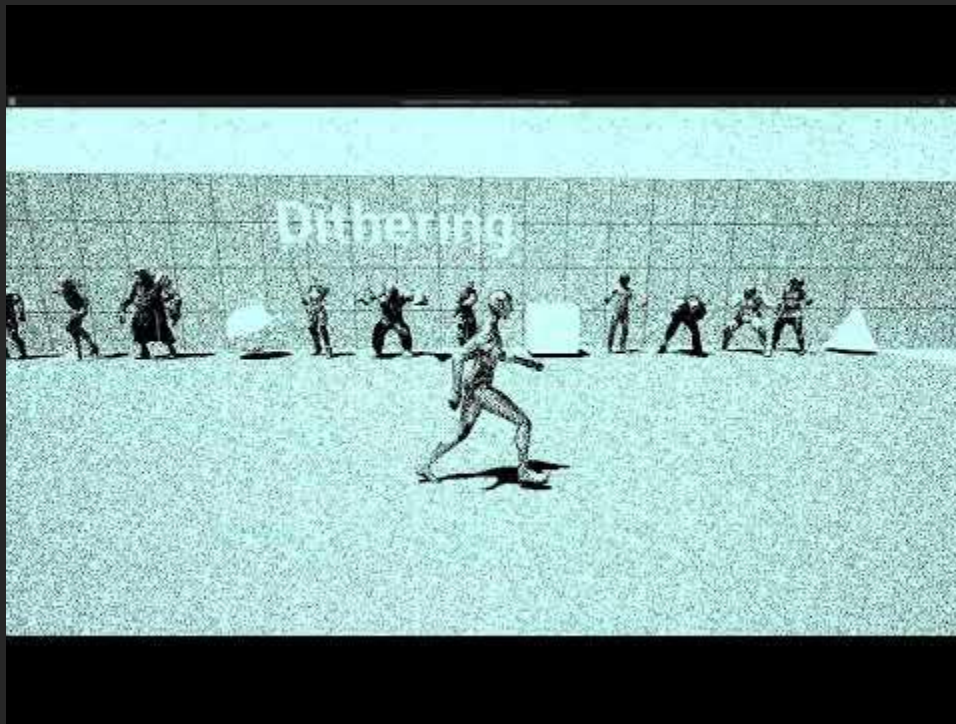
Cons: The colour palette has removed some of the masks' and cars' personalities, making them all uniform. It has also made the town scenes' darker areas completely black, losing details and some objects to the harsh black colours that the colour palette can produce.

Conclusion: The Game Boy art style is very nostalgic and creates some striking images with its limitations. However, these limitations are also its biggest problem, as they remove too much detail and personality from some scenes. This art style has a fan base, but it is still very niche and may only be visually appealing to that fan base due to its limitations.

Showcase level of all Art styles Playing in engine

I created a level in Unreal Engine 5 to showcase all the art styles I developed, running in-engine with a third-person controllable character and other character models performing animations. This was to test and demonstrate them in a game-like environment, as they were designed for in-game use. It also provides an in-game perspective of the art styles, as static renders cannot fully capture this aspect.

Please click the video below to play it:



Evaluation review

I believe I have achieved my deliverables by showcasing many beautiful and creative art styles that can rival the realistic art style. However, I now have a greater understanding of how much harder it is to develop a game around a stylized art style. This is because each art style has its own limitations, strengths, and weaknesses, and a unique stylized art style that stands out with its own personality presents even more challenges. A game needs to be developed with the art style's limitations in mind, working around those limitations and leveraging the art style's strengths. If, mid-development, the studio decides to change the art style, all assets would have to be redesigned, as they were created around that specific stylized art style and would not work in a different style. Additionally, hiring people with experience in a particular stylized art style is much more limited than hiring someone with skills and experience in the realistic art style, as that is the most popular style with the most documentation and training.

This is something I didn't realize at the start of the project, as my lack of knowledge on how difficult it can be to develop with a stylized art style was significant. I gained this knowledge through research for this project. Moreover, I also learned the value a stylized art style can bring to a game's legacy and financial benefit. Games like *The Legend of Zelda*, *Borderlands*, and *Genshin Impact* have experienced great financial success and are beloved by fans and critics. They are also not bound to high system specifications and can be played on low-end systems, opening a game to a larger audience.

To improve upon this project, I would investigate other ways to create a stylized art style beyond post-processing materials. For example, by incorporating stylized elements in the early stages of modeling and texturing assets. This could lead to more visually striking, bold, impressive, unique, and original art styles that cannot be achieved solely with post-processing materials. This would require significantly more time, as it would involve research and development across many different aspects of the game development pipeline. It would also need extensive learning to acquire skills in various programs within the game development pipeline to produce industry standard industry standard work.

Overall, I am pleased with the outcome of this project and have highlighted the benefits of a stylized art style. I have also gained a greater appreciation for stylized games, now understanding the effort required to execute such challenging art styles. I also have a greater appreciation for the realistic art style, as it is a very difficult style to execute effectively. We all have a base expectation of what real-world objects should look like, and creating near-realistic games is a massive undertaking that deserves recognition.

Philography

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