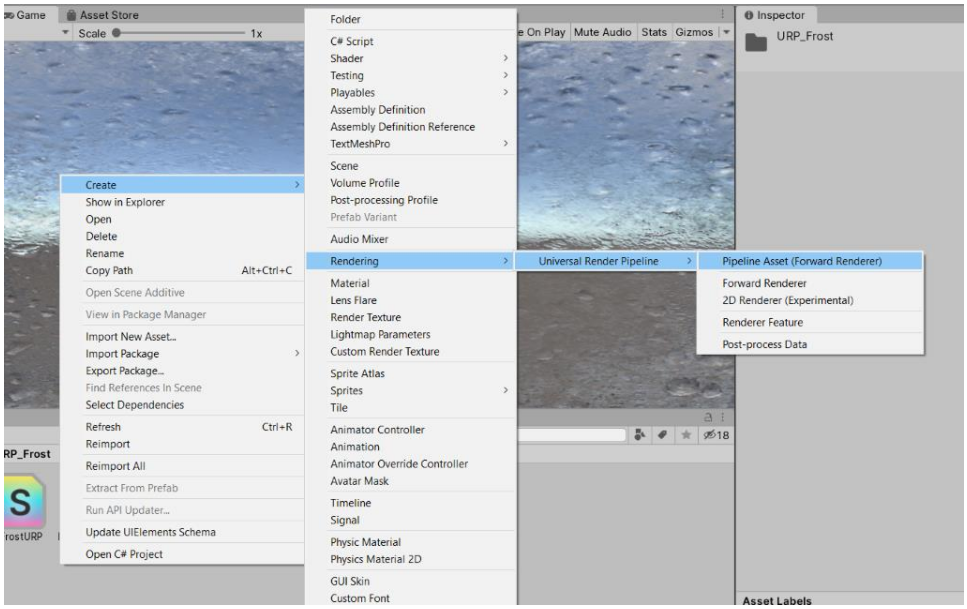
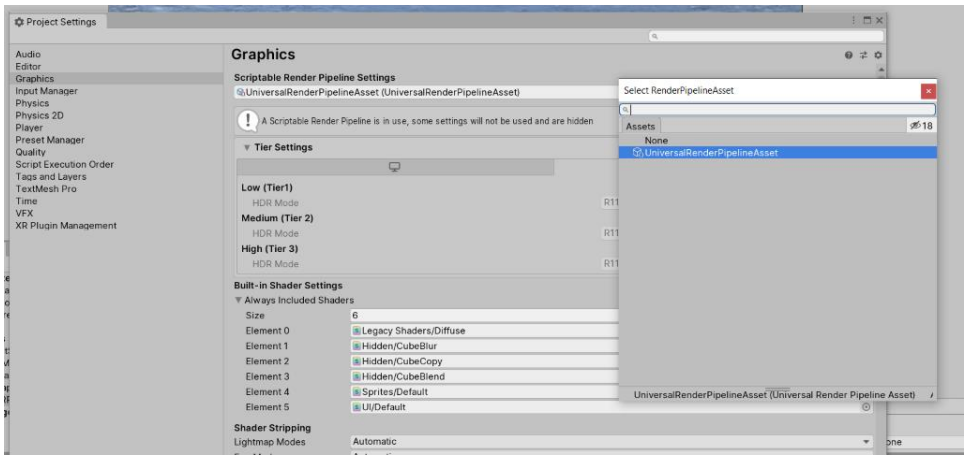
MOBILE POST PROCESSING URP

How to setup URP(if you have already configured URP for your scene skip this part):

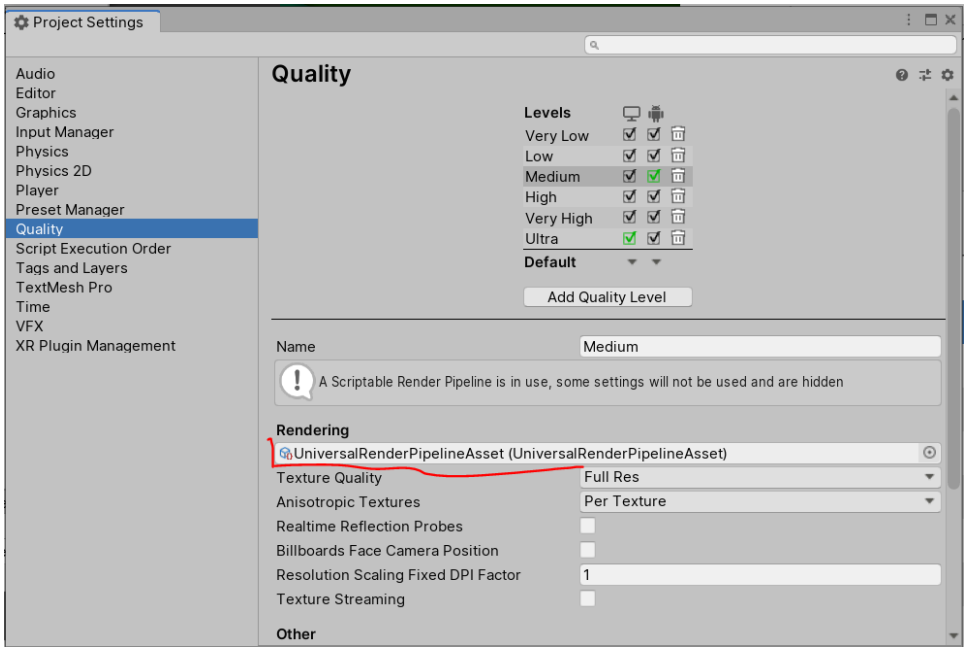
1. Firstly install the URP package to your project. Go to **Windows->Package Manager.** In the list find the LightweightRP and install it.
2. Firstly we need to create the Pipeline Asset. For that press **RightClick->Create->Rendering->UniversalRenderPipeline->PipelineAsset**



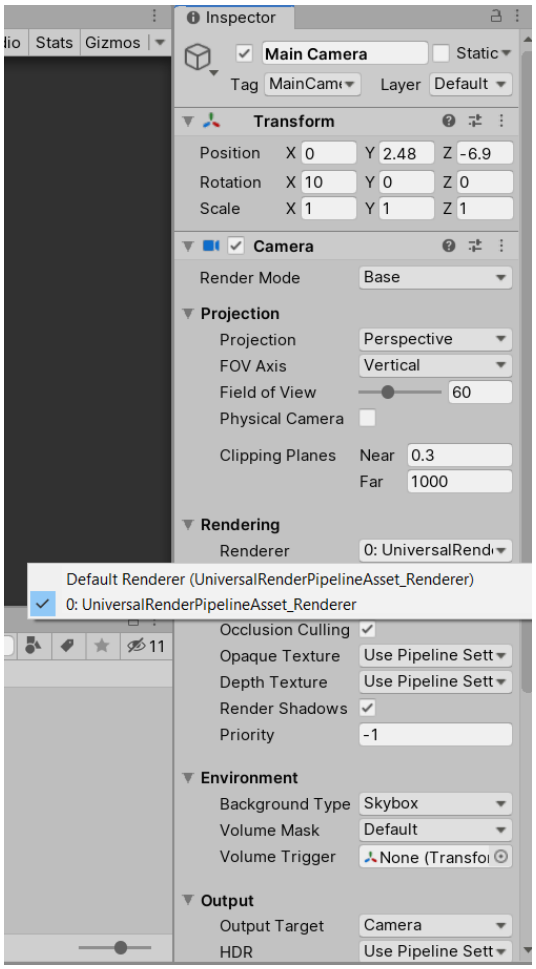
3. Go to **Edit->ProjectSettings->Graphics.** In the Scriptable Render Pipeline Settings, drag and drop the pipeline asset that we created in previous section



4. Go to **Edit->Project Settings->Quality.** In rendering section drag and drop the pipeline asset you created

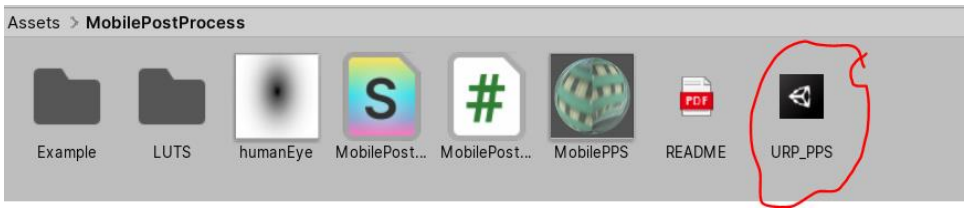


5. Go to your camera object and in **Rendering** settings pick for **Renderer** the pipeline asset you created

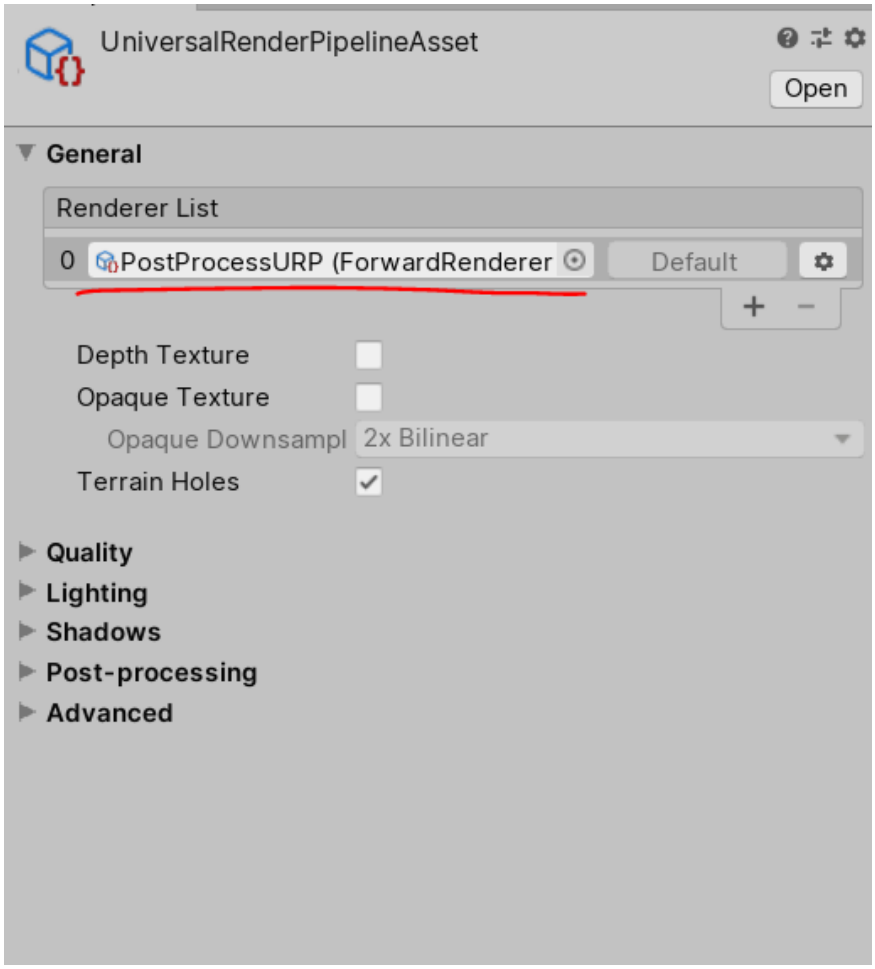

Inspector
Stats
Gizmos
Main Camera
Static
Tag
MainCam
Layer
Default
Transform
Position
X 0
Y 2.48
Z -6.9
Rotation
X 10
Y 0
Z 0
Scale
X 1
Y 1
Z 1
Camera
Render Mode
Base
Projection
Projection
Perspective
FOV Axis
Vertical
Field of View
60
Physical Camera
Clipping Planes
Near 0.3
Far 1000
Rendering
Renderer
0: UniversalRend
Default Renderer (UniversalRenderPipelineAsset_Renderer)
0: UniversalRenderPipelineAsset_Renderer
Occlusion Culling
Opaque Texture
Use Pipeline Sett
Depth Texture
Use Pipeline Sett
Render Shadows
Priority
-1
Environment
Background Type
Skybox
Volume Mask
Default
Volume Trigger
None (Transfo
Output
Output Target
Camera
HDR
Use Pipeline Sett
11

How to apply URP Mobile Post Posprocessing:

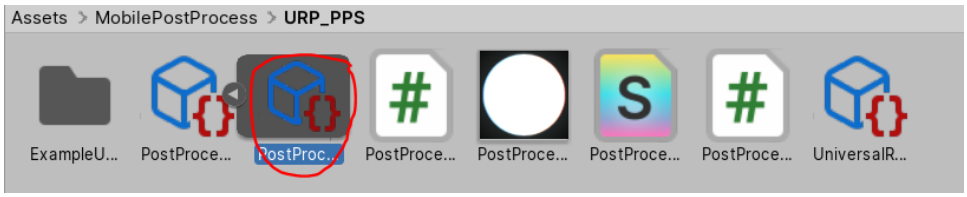
1. **Firstly import the package URP_PPS which is included in the asset**

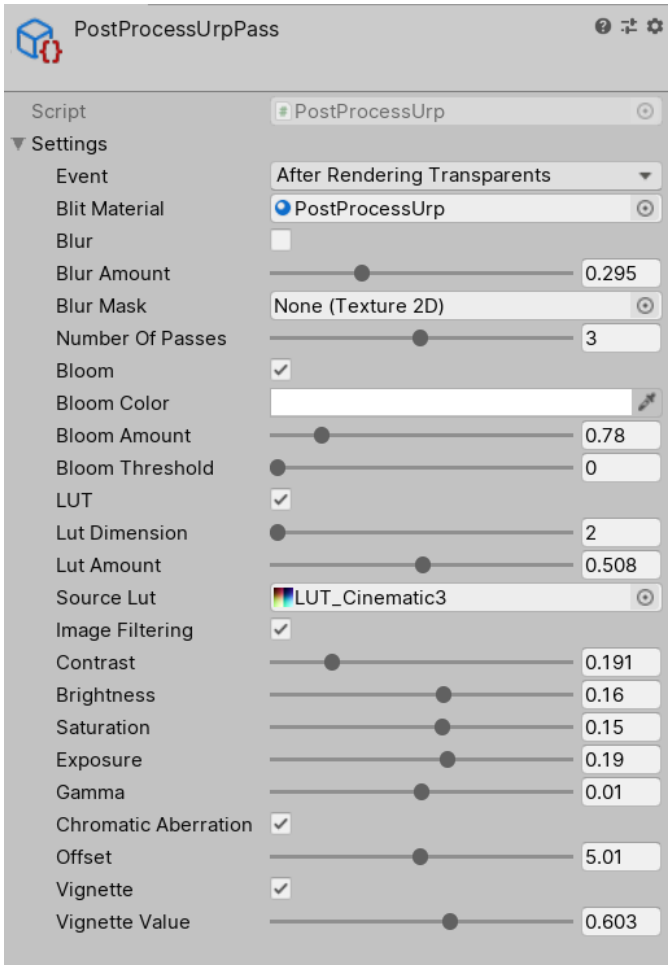


2. **Open the settings of the URP pipeline asset. In the General tab for RenderType pick the Custom and pick the PostProcessUrp**



3. **That is pertty much it. To change the parameters go to the folder URP_PPS. Find PostProcessUrp, extend it and select PostProcessUrpPass. You will se in the inspector the parameters of it.**





PARAMETERS

- **NUMBER OF PASSES –** nubmer of render passes used for blurring
- **BLUR –** if you tick this checkbox Blur will be applied to your scene. Untick if you are not using for performance reasons.
- **BLUR AMOUNT –** level of blur on your scene
- **BLURMASK-** Mask texture is greyscaled texture, used by blur shader. Darker the area, less blur will be applied to that area in final image. Strongly

advice for mobile to have at least some areas not blurred, to increase the performance.

- **BLOOM –** if you tick this checkbox Bloom will be applied to your scene. Untick if you are not using for performance reasons.
- **BLOOM COLOR –** color of the bloom effect
- **BLOOM AMOUNT –** amount of bloom applied to final image
- **BLOOM DIFFUSE –** diffuse amount of the bloomed areas
- **BLOOM THRESHOLD –** reduces the brightness of not bloomed part of the scene.
- **LUT -** if you tick this checkbox Color Correction(LUT) will be applied to your scene. Untick if you are not using for performance reasons.
- **LUT DIMENSION –** 2D or 3D lut texture. For mobile use 2D, but it may have some glitches, if the quality is vital use 3D Lut
- **LUT AMOUNT -** amount of lut applied to the scene. Not active when blur applied due to performance reasons.
- **SOURCE LUT -** the lut texture
- **IMAGE FILTERING –** enable image filters. Untick if you are not using for performance reasons.
- **COLOR –** tint color of th image
- **CONSTRAST –** changes the constrast of the image
- **BRIGHTNESS –** changes the brightness of the image
- **SATURATION –** colourness of the image, from black and white to colored
- **EXPOSURE –** brightens the brighter areas
- **GAMMA –** darkens the darker areas
- **SHARPNESS –** edge sharpness of the image
- **CHROMATIC ABERRATION –** enables chromatic aberration effect. Untick if you are not using for performance reasons.
- **OFFSET –** horizontal shift of the red and blue channels
- **FISH EYE DISTORTION –** smoothly ditorts the red channel towards the edge and blue channel from the edge. Center of the image is not afffected
- **GLITCH AMOUNT –** value describes the random horizontal shifts of the red and blue channels
- **DISTORTION –** enables the camera distortion. Untick if you are not using for performance reasons.

- **LENS DISTORTION –** distorts and stretches the edges of the image
- **VIGNETTE –** enable vignette effect. Untick if you are not using for performance reasons.
- **VIGNETTE COLOR –** blacks out the edges of the image
- **VIGNETTE AMOUNT –** amount of blakness of the corner
- **VIGNETTE SOFTNESS –** softness of the dark corners
- **MATERIAL–** here just select the PostProcessing material

OPTIMIZATION SUGESTIONS

1. LUT and Image filter provide the same functionality. Lut maps have all the filters in one lut map, while image filtering allows to edit the filters manually. **Try to use one of them.**
2. **Untick of the effects that you are not using.** If you untick It will boost your performance significantly.
3. **If you are not using Sharpness set it to 0.** It uses the edge detection algorithm, which can affect the performance negligibly.

Overall, in the 40k poligonal scene, with 68 materials applied to 50 gameobjects and one Directional light we have this results on Meizu M2 Note(Octa-core 1.3 GHZ ARM Cortex-A53, Mediatek MT6753, GPU Mali-T720MP3, RAM 2 GB)

Lut+Blur+Bloom+Image Filtering+Chromatic Aberration+Vignette – 32-40 fps