using System;

using UnityEngine;

namespace UnityStandardAssets.ImageEffects

{

[ExecuteInEditMode]

[RequireComponent(typeof(Camera))]

[AddComponentMenu("Image Effects/Color Adjustments/Contrast Enhance (Unsharp Mask)")]

class ContrastEnhance : PostEffectsBase

{

public float intensity = 0.5f;

public float threshold = 0.0f;

private Material separableBlurMaterial;

private Material contrastCompositeMaterial;

public float blurSpread = 1.0f;

public Shader separableBlurShader = null;

public Shader contrastCompositeShader = null;

public override bool CheckResources ()

{

CheckSupport (false);

contrastCompositeMaterial = CheckShaderAndCreateMaterial (contrastCompositeShader, contrastCompositeMaterial);

separableBlurMaterial = CheckShaderAndCreateMaterial (separableBlurShader, separableBlurMaterial);

if (!isSupported)

ReportAutoDisable ();

return isSupported;

}

void OnRenderImage (RenderTexture source, RenderTexture destination)

{

if (CheckResources()==false)

{

Graphics.Blit (source, destination);

return;

}

int rtW = source.width;

int rtH = source.height;

RenderTexture color2 = RenderTexture.GetTemporary (rtW/2, rtH/2, 0);

// downsample

Graphics.Blit (source, color2);

RenderTexture color4a = RenderTexture.GetTemporary (rtW/4, rtH/4, 0);

Graphics.Blit (color2, color4a);

RenderTexture.ReleaseTemporary (color2);

// blur

separableBlurMaterial.SetVector ("offsets", new Vector4 (0.0f, (blurSpread \* 1.0f) / color4a.height, 0.0f, 0.0f));

RenderTexture color4b = RenderTexture.GetTemporary (rtW/4, rtH/4, 0);

Graphics.Blit (color4a, color4b, separableBlurMaterial);

RenderTexture.ReleaseTemporary (color4a);

separableBlurMaterial.SetVector ("offsets", new Vector4 ((blurSpread \* 1.0f) / color4a.width, 0.0f, 0.0f, 0.0f));

color4a = RenderTexture.GetTemporary (rtW/4, rtH/4, 0);

Graphics.Blit (color4b, color4a, separableBlurMaterial);

RenderTexture.ReleaseTemporary (color4b);

// composite

contrastCompositeMaterial.SetTexture ("\_MainTexBlurred", color4a);

contrastCompositeMaterial.SetFloat ("intensity", intensity);

contrastCompositeMaterial.SetFloat ("threshhold", threshold);

Graphics.Blit (source, destination, contrastCompositeMaterial);

RenderTexture.ReleaseTemporary (color4a);

}

}

}