Mock Exam Q4 Part C-3

A sketch shader typically works by detecting the edges of objects in the scene and then applying a series of filters to create a hand-drawn or sketch-like effect.

This can include effects such as hatching, cross-hatching, and shading that mimic the look of a hand-drawn sketch.

A good example:

http://kylehalladay.com/blog/tutorial/2017/02/21/Pencil-Sketch-Effect.html

This is a fragment shader that implements a sketch shader:

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The "fwidth" function calculates the rate of change of the color value over the screen space, which is used to detect edges in the image.

The "smoothstep" function maps the edge values to a range between "\_EdgeWidth" and "\_EdgeWidth + \_EdgeDarkness", which creates a transition zone between the edges and the rest of the image.

The "dot" function calculates the luminance value of the color by taking a weighted sum of the RGB components using the coefficients (0.299, 0.587, 0.114).

The "(\_SketchBrightness + \_SketchContrast \* (bwTex - \_SketchBrightness))" expression applies a brightness and contrast adjustment to the luminance value to control the overall look of the sketch.

The final color value is a combination of the adjusted luminance value "bwTex" and the edge mask "edge", which is subtracted from 1.0 to create a white border around the edges of the object or scene.

The alpha value is simply copied from the texture.

A sphere with sketch shader with different sketch texture.

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