Noise and texture generator.

[Company name] | [Company address]

[Document subtitle]

17BriceJ

[Year]

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# Analysis

## Problem Identification

In 3D design and modelling, Displacement maps and normal maps are used to used to ‘displace’ 3 dimensional meshes. They add surface detail without requiring more vertices in the mesh. This means finished models require fewer vertices. This means models using this technique take less memory and storage space. These maps are often made with types of procedural noise layered on top of each other. These are then saved as bitmaps. Normal maps are superior to displacement maps, as they use the RGB colour values to displace values in XYZ. Most 3D programs support some types of noise, but these mostly run on the CPU and cannot run in real time. Noise generation is evaluated per pixel, so it is a good candidate for GPU processing, as each pixel can be evaluated on a different core.

## Computational Methods

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## Solution structure

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