**Material Designer – Procedural Texture Generator Software**

A PROPOSAL PRESENTED BY

L.M Senanayake

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# **INTRODUCTION**

## **Problem Statement**

Creating convincing and immersive 3d worlds requires enormous resources in order to create all the little details and 3d models that the 3d world is composed. All these 3d models then need to be textured with impressive quality to meet the high expectations that users might have. The focus of this project is developing a software to create procedural texture creation platform for procedurally generated textures that can be used in games and architectural visualizations. This project not only will help with the manufacturing process of modern game textures but will also enable to understand the essence of textures. Practical part of the project consists of designing procedural textures (mathematically generated).

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# **LITERATURE REVIEW**

A procedural texture is a texture created using a mathematical description (i.e. an algorithm) rather than directly stored data. The advantage of this approach is low storage cost, unlimited texture resolution and easy texture mapping. These kinds of textures are often used to model surface or volumetric representations of natural elements such as wood, marble, granite, metal, stone, and others.

Material designer can help game developers to create materials with full control and infinite variations. Edit complete texture sets instantly and produce mathematical texture graphs that will be directly handled in renderers, game engines or will be used to create textures at client side after shipping created graphs to the clients.

Material designer can be usedto create tile-able, dynamic and modular textures and also to create a base material library where materials can be used in other applications such as Unreal engine / Unity game engine.

**Proposed Technologies**

* Python
* React JS
* Redux
* Node JS
* Electron JS
* Typescript
* Babel
* Sass / Less (CSS pre-compilers)
* HTML / CSS
* JavaScript

**Project Objectives**

* Creating an user friendly interface so non-programmers can use material designer to create procedural textures.
* Creating functionality using Node JS which can communicate with python so images processing part can be carried out
* Creating a program to create procedurally generated textures that can be used in games and architectural visualizations.
* Helping with the manufacturing process of modern game textures and also to understand the essence of textures.

**Github repository** - [**https://github.com/lazzy07/matrial\_designer**](https://github.com/lazzy07/matrial_designer)

Similar Technologies - <https://www.youtube.com/watch?v=y8q6-tgQjZc>

<https://www.allegorithmic.com/products/substance-designer>

<https://www.thegnomonworkshop.com/tutorials/substance-designer>

<https://quixel.com/mixer>

<https://www.youtube.com/watch?v=wThyDisLyH0>