

## Proposal

### Guitar showcase renderer

#### *Motivation*

The underlying concept of the project proposal comes from my passion for rock music and aims to be a tribute for the stars of this genre: Guitars.

Currently studying as a software engineer, I am unsure as to where I would like to build a career in. However, in building this project, I wish to widen the horizon of my studies to Game Development all while keeping true to my deepest interests. This will prove to be a stimulating challenge and hopefully I can hone my skills as a software engineer.

#### *Description*

The Guitar showcase will include a 3D Model of a guitar in the setting of a showcase room. Emphasis will be placed on achieving realistic rendering effects (shading, light reflections, textures of the different parts of the instrument, as well as the feel of the model) to simulate a proper Guitar. Part of the effort will also be dedicated to enable users to manipulate the object in space and discover every corner of this beautiful instrument. The interesting feature of this project lies in the layering of the components and the UI that will allow the user to interact with the guitars' parts.

#### *Objectives*

1. **Shading the parts of the instrument differently**

Different surfaces on the guitar have different feels. The shading will support different techniques and configurations depending on the part of the instrument.

2. **Realistic finishing textures shading**

Explore the shading of different finishings on the body of the guitar. The goal is to authentically capture the diverse aesthetic qualities exhibited by different guitars, whether they possess a reflective finishing or a glossy one.

3. **Layering the components of different guitars**

(1) This project will also layer independently the different parts of a guitar as part of its 3D model. (2) It will also showcase different types of guitars, such as acoustic guitars, electric guitars, and hybrids. The goal is to showcase at least three replicas of known guitar brands. This objective is in the scope of diversifying the models and making them interactive.

4. **UI supports interacting with guitar parts**

The UI will allow the user to play with the different components of the guitar (like turning knobs, removing parts in an exploded view, and such). Clicking on a component will display information about the part, its importance as part of the instrument, its specs – i.e. relative info. An indicator of selection will confirm it is clickable, like highlighting the part. This will include “moving view” for special manipulation, and “interactive view” for part-specific manipulations.