

Project 1: Skeleton Animation

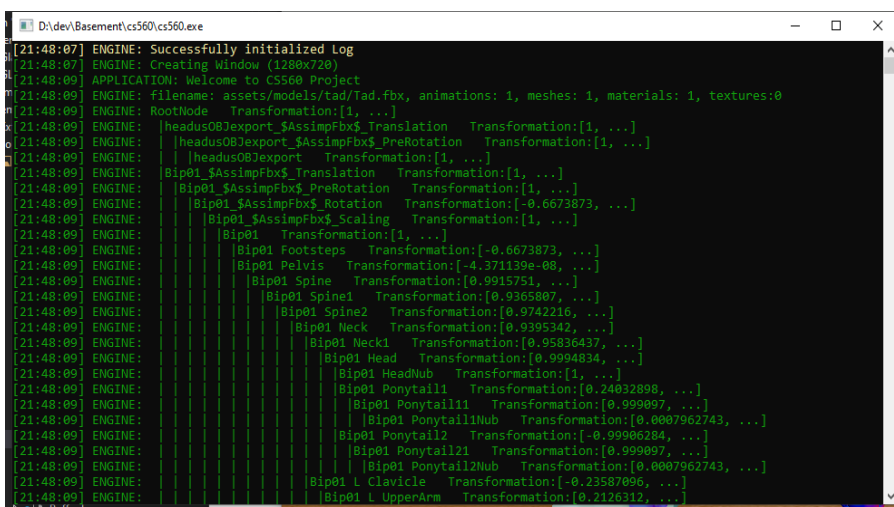
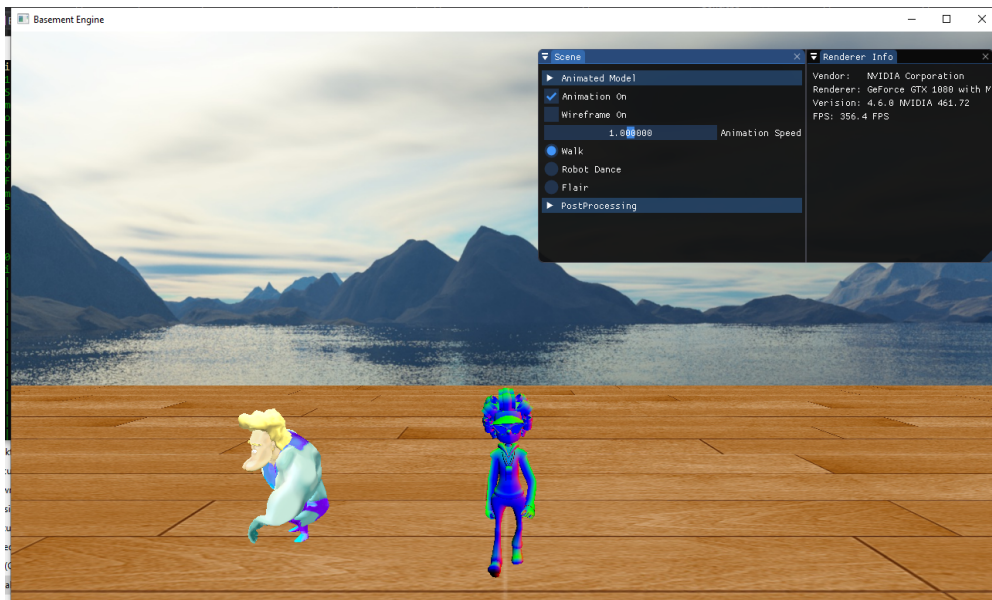
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1. Introduction

This project is about animating 3D models by using skeleton animation. It is based on a render framework I wrote before. Please run the project executable under the following path:

`Basement\cs560\cs560.exe`



2. Controls

The demo executable supports both keyboard and mouse input, and the control is Unity-like. The keys and buttons work as below.

KeyCode	Action
W	Move forward
S	Move backward
A	Move left
D	Move right
E	Move upward
Q	Move downward

Mouse Button	Action
Right Mouse Button	Look around
Scroll Up/Down	Zoom in/out

3. Interpolations

There are different types of interpolation implemented in this project. There are two major interpolation method used in during the calculation of animation:

1. Linear Interpolation
2. Spherical Linear Interpolation.

Linear interpolation is used to interpolate between position and uniform scale which uses **vector** and **float**. For rotation, spherical linear interpolation for **quaternion** is used to get smoother animation with uniform changes in movement of rotation.

4. Adjustable Settings

[Put a setting picture here](#)

Parameter	Description
Animation On	Toggle for playing or pausing animation
Wireframe On	Toggle for rendering model in wireframe mode
Animation Selection Button	Choose the corresponding animation to play

There are also a few post-processing effects.

5. Related Files

Source Code

1. Model loading

D:\dev\Basement\Basement\source\Basement\Renderer\Model.h

D:\dev\Basement\Basement\source\Basement\Renderer\Model.cpp

2. *Animation*

D:\dev\Basement\Basement\source\Basement\Renderer\Animation\ *.h

D:\dev\Basement\Basement\source\Basement\Renderer\Animation\ *.cpp

Shaders

1. *Animation*

Basement\cs560\assets\shaders\Grandma.glsl

Basement\cs560\assets\shaders\SkeletonAnimation.glsl

2. *Debug*

Basement\cs560\assets\shaders\SkeletonAnimation.glsl