

OpenGL Skeletal Animation With ASSIMP

Tutorial part 1 — Intro

Skeletal animation in modern games is something irreplaceable, every 3D game uses this technique in some way or another. Imagine you needed such a human model in your program that could walk, run, jump or crawl and which also looked nice. There is no way you could achieve that result without decomposing the model into pieces. And here is where the **skeletal animation** joins the game.

In these tutorial series we will implement the whole process of skeletal animation with ASSIMP inside the OpenGL program. The tutorial will consist of **5 (7) parts**:

- 1) **Intro** (this page)
- 2) **Class Mesh & Class Bone** (in those ones we will keep the loaded from file data)
- 3) **Class Skeleton & Class Animation** (those ones will control the animation)
- 4) **Class ModelLoader** (to get model data from file via ASSIMP and to store it into our format that OpenGL could understand)
- 5) **Class GameObject** (everything will be stored into user-friendly class)

This tutorial is a combination of **three** other tutorials and the **code** here is based on the code there. I recommend you read them at first and then return to this one.

-First tutorial shows you how to use ASSIMP to import static models into the OpenGL program (<https://learnopengl.com/Model-Loading/Assimp>).

-Second one is more about the general idea of skeletal animation, not about the actual implementation, however, it is possible to download code there (<http://ogldev.atSPACE.co.uk/www/tutorial38/tutorial38.html>).

-Third tutorial describes how to implement skeletal animation but it doesn't give you the full picture of what is happening (<https://realitymultiplied.wordpress.com/2016/04/12/assimp-skeletal-animation-tutorial-intro>).

To compile and run the **code** without any problems you need:

- Linux (the code was written under Linux)
- Mesa OpenGL (<https://wikihow.com/install-mesa-opengl-on-linux-mint>)
- GLM (<https://github.com/g-truc/glm/releases/tag/0.9.8.5>)
- GLFW (<https://glfw.org/>)
- ASSIMP (http://assimp.sourceforge.net/main_downloads.html)
- SOIL (<https://lonesock.net/soil.html>)

Here you can download the **code**:

<https://github.com/Arvolear/Tutorials>

Here you can download the **model** I use:

<https://sketchfab.com/models/febdbce61b45472da3de7d9a9878ef7a>