

3D Graphics From Scratch Summary

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1 Introduction

The goal of this is to summarize the 3D Graphics from scratch course by [PIKUMA](#) for me to use in the future for reference.

The course goal is learning how to make 3D Graphics from scratch, without using OpenGL or Vulkan or any other graphics API, just C Programming Language & Math.

1.1 Dependencies

1.1.1 C Programming Language



C programming language is used because of its simplicity, when doing and understanding something on C you will be able to convert it to any other language easily when needed.

1.1.2 SDL



SDL is used to avoid the very long process of managing windows and drawing pixels on screen, which is also a different process for every operating system.

With SDL, it would be much easier to do so and the same code will work for every operating system.

1.2 Project Structure

```
$project-root:/
|-- src
|   |-- main.cpp
|   |-- utils.cpp
|   -- utils.h
|-- include
|   -- project
|       -- config.h
|-- docs
|   -- README.md
-- CMakeLists.txt$
```

2 Buffer

2.1 Color buffer

2.1.1 what is a color buffer

color buffer or frame buffer is a sequence of colors assigned for each pixel, and its size is (WIDTH x HEIGHT) of the window.

2.2 hex color scheme

Color buffer in the code uses the (ARGB8888) pixel color format , which is defined in the following way:

A	R	G	B	
FF	FF	00	00	= 0xFFFF0000

cccc

Other color schemes can be used as well, but this is the one on my code.