

3D Graphics Programming

Final Exam Range

Date: December 16(Mon), 2019, 12:00 pm

1 Read pdf files at

<https://github.com/GP101/Programming/3DGraphicsProgramming>.

LinearAlgebra04 Matrix English 1_2 20191028.pdf

LinearAlgebra04 Matrix English 2_2 20181021.pdf

LinearAlgebra05 Polygon and Projection Transform English 1_3 20181028.pdf

LinearAlgebra05 Polygon and Projection Transform English 2_3 20191118.pdf

LinearAlgebra06 Scan Conversion English Presentation 20181112.pdf

LinearAlgebra06 Scan Conversion English Presentation02 20191124.pdf

Vector Decomposition Ocw 20180920.pdf

BeginningDirect3DGameProgramming07_LightsAndMaterials_20191202_jintaeks.pdf

* Question candidates:

1) KMatrix4::operator*() with homogeneous division

2) Determinant, Minor, Cofactor, Adjugate Matrix and Invertible Matrix of KMatrix3

3) Perspective projection matrix

4) Dot, Cross products

5) Two line segments intersection test

6) How to detect a invisible triangle?

7) KVectorUtil::_ScanLineLow() function

8) KVectorUtil::FillTriangle() function

9) How to implement the DrawFilled2DPolygon()

10) Flat shading: Differences between Flat shading, Gouraud shading and Phone shading.

11) Vector Decomposition(@see Vector Decomposition Ocw 20180920.pdf)

[(optional)2. Watch "Essence of Linear Algebra" videos from 5 to 11]

3. Fully understand all sources of *LinearAlgebra Step12* project.

The image shows a video player interface on the left and a solution explorer on the right. The video player displays a list of videos from the 'Essence of linear algebra' series by 3Blue1Brown. The videos are numbered 5 through 11, each with a thumbnail, title, and duration. The video player is highlighted with a pink border. The solution explorer on the right shows a tree view of projects under the name 'LinearAlgebra'. The projects are listed from Step01 to Step13. The project 'LinearAlgebra Step12 Colored Cube' is highlighted with a pink border.

Essence of linear algebra
3Blue1Brown - 1 / 15

5 transformations | Essence of linear algebra, chapter 5 4:46 3Blue1Brown

6 Determinant | Essence of linear algebra, chapter 6 10:03 3Blue1Brown

7 Inverse matrices, column rank, null space | Essence of linear algebra, chapter 7 12:09 3Blue1Brown

8 Nonsquare matrices as transformations between spaces 4:27 3Blue1Brown

9 Dot products and duality | Essence of linear algebra, chapter 9 14:12 3Blue1Brown

10 Cross products | Essence of linear algebra, Chapter 10 8:53 3Blue1Brown

11 Cross products in the light of transformations | Essence of linear algebra, chapter 11

Search Solution Explorer (Ctrl+;)

Solution 'LinearAlgebra' (21 projects)

- LinearAlgebra Step01
- LinearAlgebra Step02 Vectors
- LinearAlgebra Step03 Basis
- LinearAlgebra Step04 _Prepare
- LinearAlgebra Step04 Matrix2
- LinearAlgebra Step05 Matrix2 Multiplication
- LinearAlgebra Step06 Homogeneous Matrices
- LinearAlgebra Step07 Polygon
- LinearAlgebra Step08 Isometric Projection
- LinearAlgebra Step09 Perspective Projection
- LinearAlgebra Step09 Perspective Projection
- LinearAlgebra Step10 Scan Conversion1 P
- LinearAlgebra Step10 Scan Conversion2 D
- LinearAlgebra Step11 Scan Conversion3 F
- LinearAlgebra Step12 Colored Cube**
- LinearAlgebra Step13 Light and Material

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