

Computer Graphics

Lecture 3 Transformations

The background of the slide is composed of several large, overlapping triangles in various colors: red, orange, yellow, green, blue, and purple. These triangles are arranged in a way that they create a dynamic, abstract pattern around the central text.

What is a
transformation?

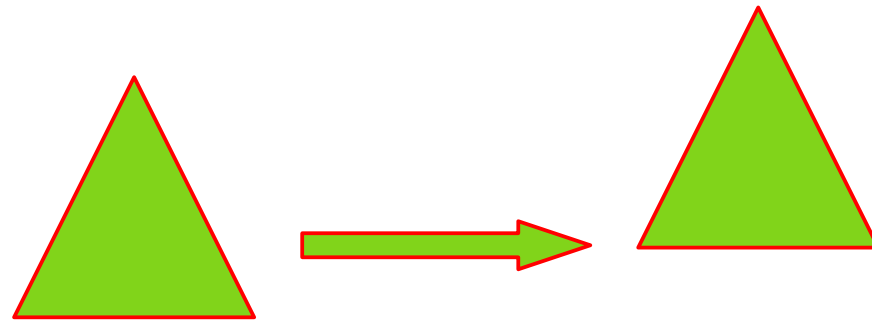
The background of the slide is composed of several large, overlapping triangles in various colors: red, orange, yellow, green, blue, and purple. These triangles are arranged in a way that they fill the entire frame, with some overlapping others, creating a dynamic and colorful geometric pattern.

Transformation types

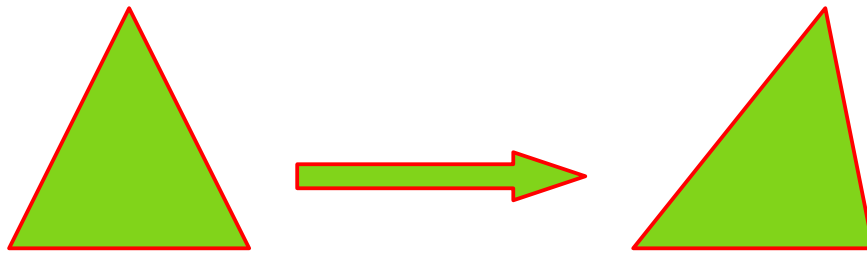
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Vectors & Positions

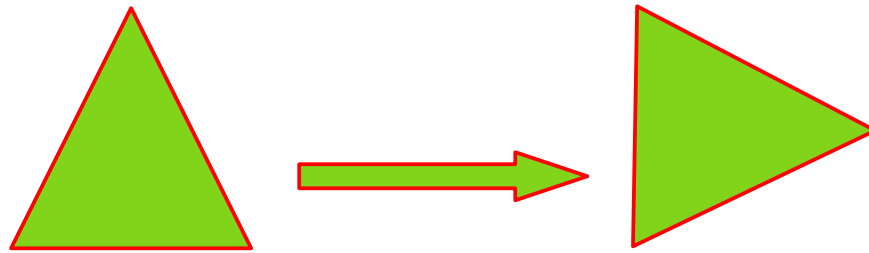
Translation



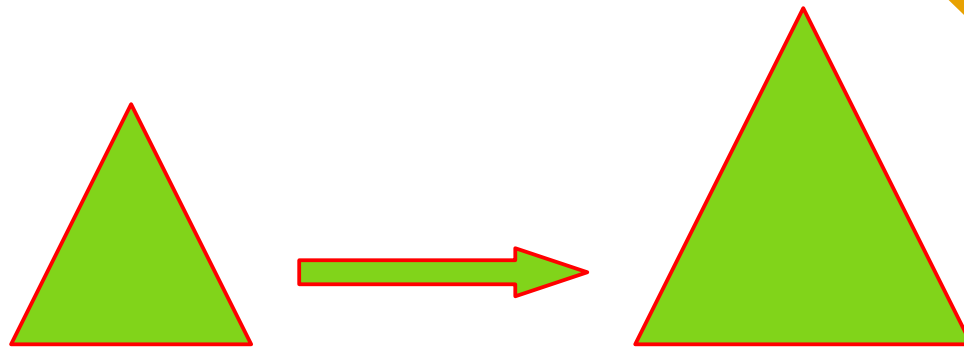
Skew



Rotation



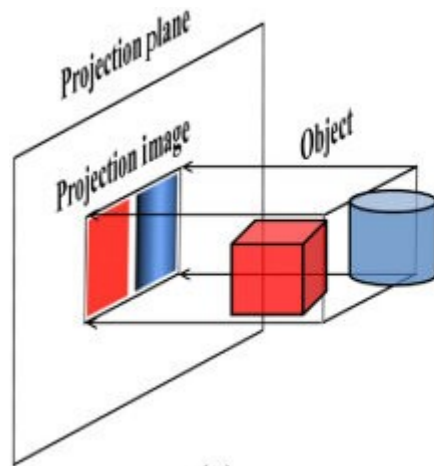
Scaling



The background of the slide is composed of several large, overlapping, semi-transparent geometric shapes in various colors: red, orange, yellow, green, blue, and purple. These shapes are arranged in a way that they create a dynamic, abstract composition. The text 'Camera/View' is centered in the white space between these shapes.

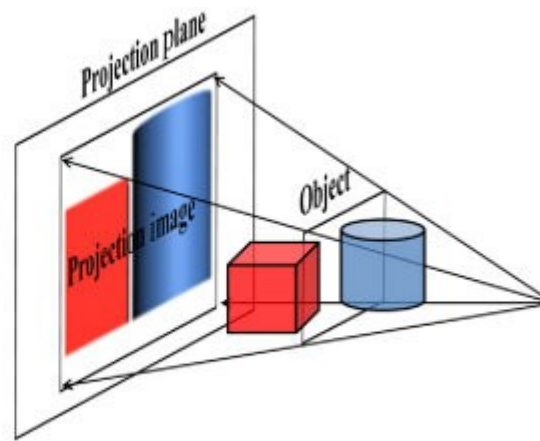
Camera/View

Projection



(a)

Orthographic



(b)

Perspective

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Matrices Multiplication

The background of the slide is composed of several large, overlapping, semi-transparent geometric shapes in various colors: red, orange, yellow, green, blue, and purple. These shapes are arranged in a way that creates a dynamic, abstract composition. The text 'Shaders Uniforms' is centered in the white space between these shapes.

Shaders Uniforms

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Thank You !

Useful Links

- https://en.wikipedia.org/wiki/Affine_transformation
- https://www.youtube.com/watch?v=AheaTd_I5Is
- <https://www.youtube.com/watch?v=g7Pb8mrwcJ0>
- https://learnwebgl.brown37.net/08_projections/projections_introduction.html