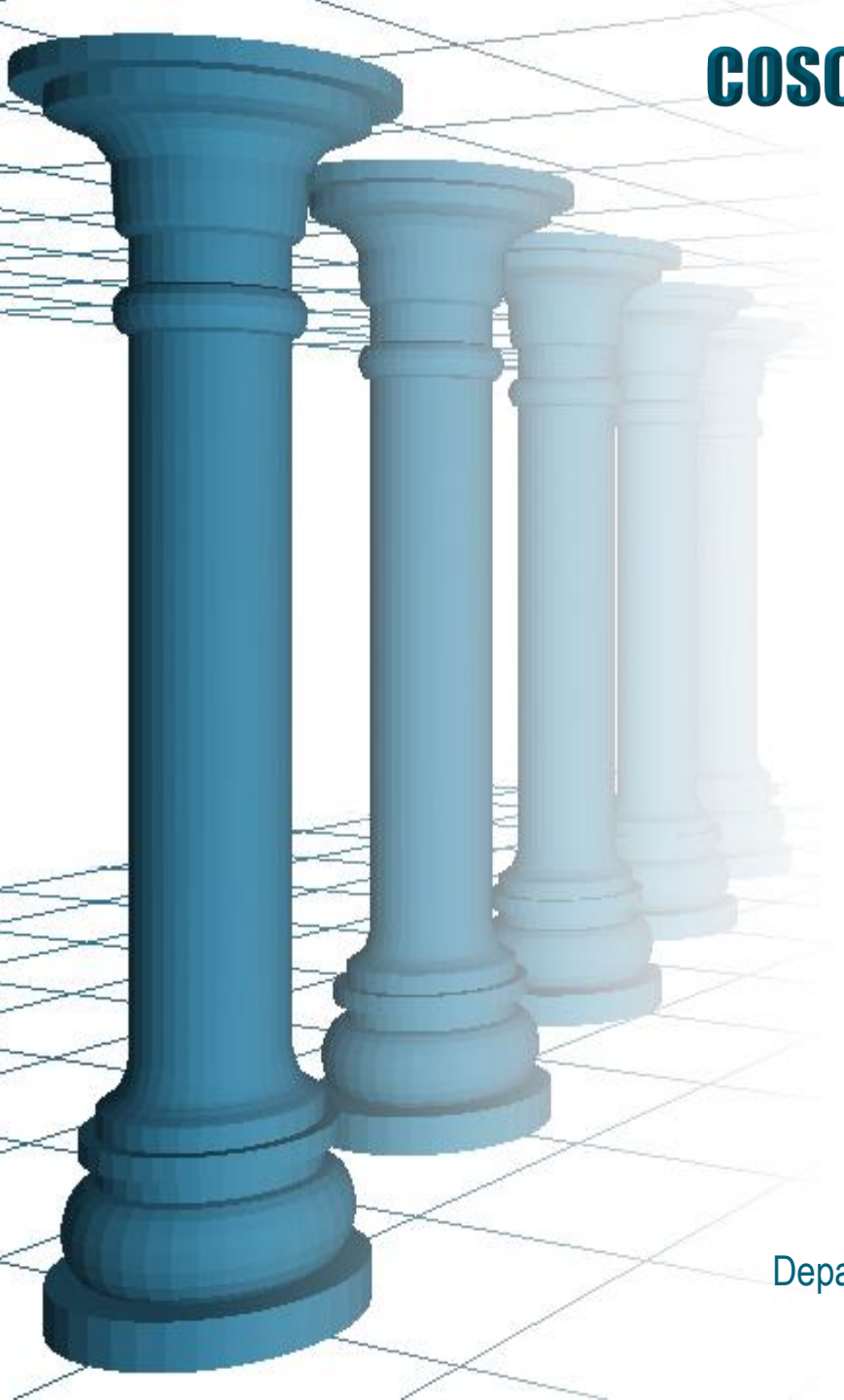

COSC363 Computer Graphics

Assignment-1

Imagination

↓

Creativity

↓

OpenGL

↓

COSC363 Assignment ☺

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Assignment-1

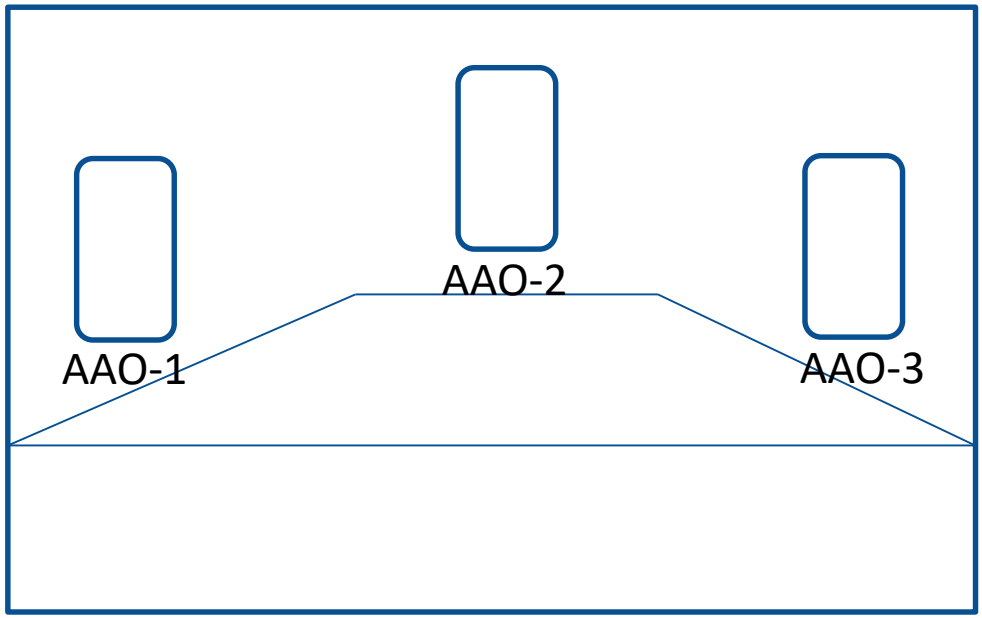
- Due: 11:55pm, **31 March 2023**.
- Maximum Marks: 20
- Assignment handout available on Learn page.
- Use only C/C++ programming language and OpenGL API
- Not a group project. Your submission must represent your own individual work
- Students may discuss assignment related problems using course forum. However, code segments or any part of your assignment submission should not be posted on Learn.

Assignment-1

- The assignment section on Learn contains
  - The assignment handout
  - This set of powerpoint slides
  - Supplementary material useful for the assignment

COSC363 Assignment 1

- Title: **Optical Illusions Art Gallery**
- Three animated models and a gallery showing a spatial arrangement of these models ("animated art objects")
  - Two animated optical illusions
  - One 3D model displayed using two or more animation sequences



Gallery

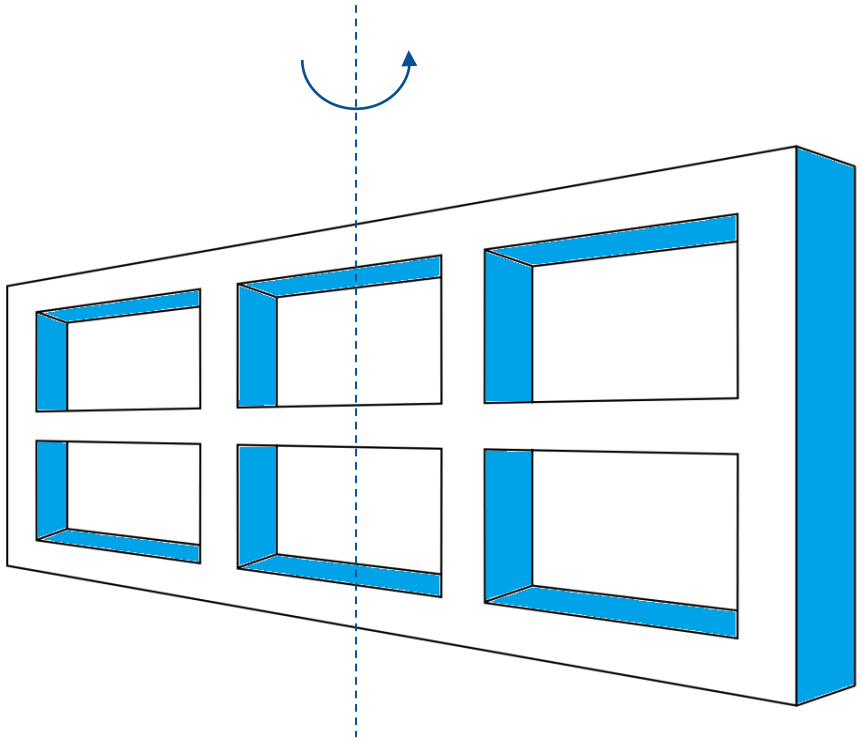
Animated Optical Illusion

- An optical illusion generated by a three-dimensional motion of objects.
- Examples:
  - Ames Window illusion ---- AAO1
  - Scanimation (a.k.a Barrier Grid Animation)
  - Dual Axis Illusion
  - Moire Patterns
  - . . .
  - . . .

AAO2

Ames Window

- A very popular animated optical illusion generated by a simple rotation of a planar object.
- Templates provided in the assignment section.

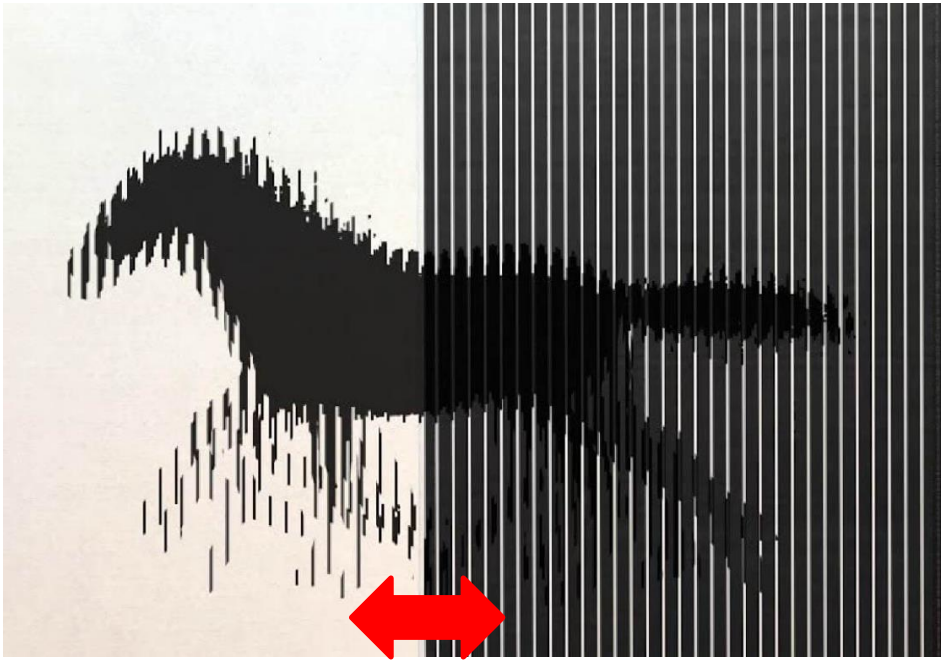


A 2D polygonal shape!

Scanimation

- Also known as Barrier Grid Illusion, Picket Fence Effect
- A striped transparent overlay (grating) is moved over an image to display 6 frames in quick succession.

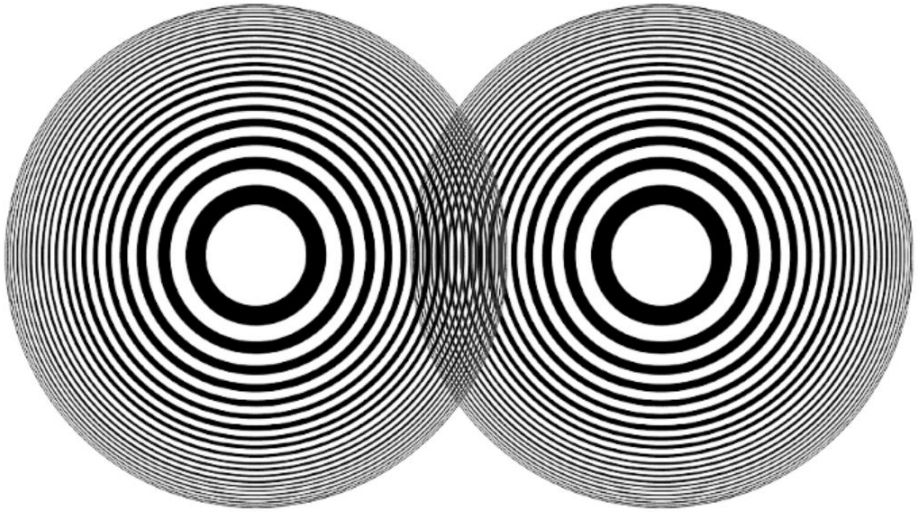
Frames



Grating
1-5-1-5

Moire Patterns

- Interference patterns
- Generated by moving one system of lines/curves over another system of lines/curves in a different direction.



Max. Marks

- Animated Optical Illusion 1 (Ames Window): 3 marks
- Animated Optical Illusion 2: 3 marks
- 3D model with animations: 4 marks
- Gallery: 2 marks
- User interaction functions: 2 marks
- Extra features: 4 marks
  - Shadows, spotlight
  - Texture mapped sweep surfaces
  - Static optical illusions (max 1 mark)
  - Physics based animations
- Report: 2 marks

Timeline

AAO-1 (Ames Window)	Lab 1, Week 2
AAO-3 (3D Model with animation)	Lab 2, Week 3
AAO-2 (Texutre mapping for displaying images/patterns)	Lab 3, Week 4
Gallery (Surface modelling)	Lab 4, Week 5
Assignment help	Lab 5, Week 6
Assignment submission	31 March