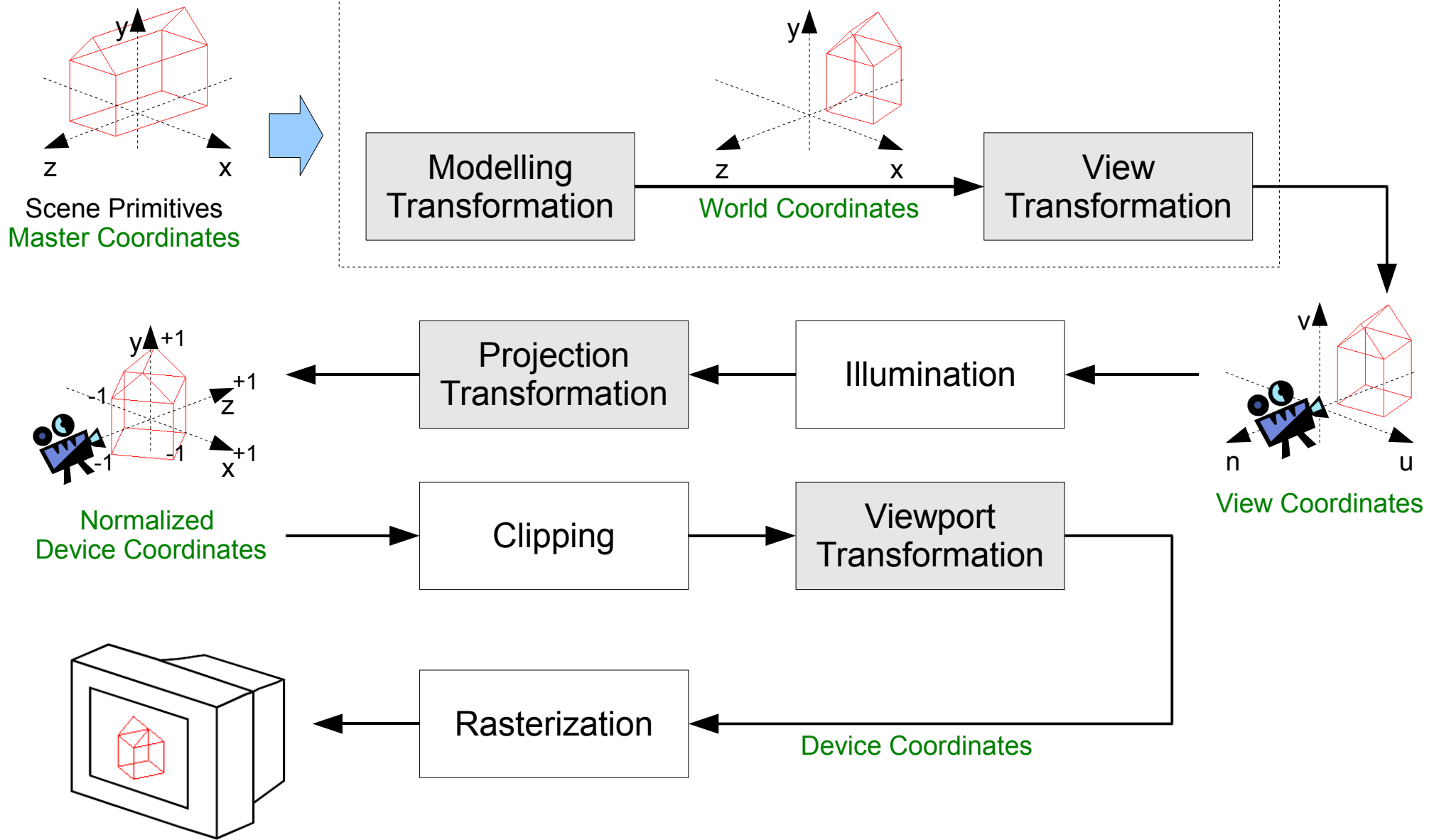


# CompSci 372 – Tutorial

## Part 11

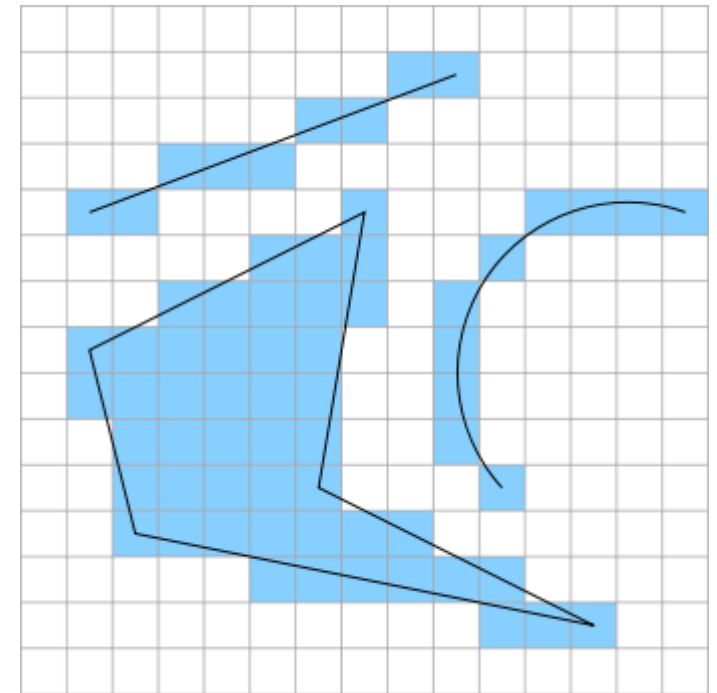
## Rasterisation

# OpenGL Render Pipeline



# Rasterisation

- Turn 3D floating-point vertices into integer 2D pixels with correct colours
  - Points
  - Lines
  - Polygons
- Shading
- Z-Buffer
- Other operations



# Pixmaps

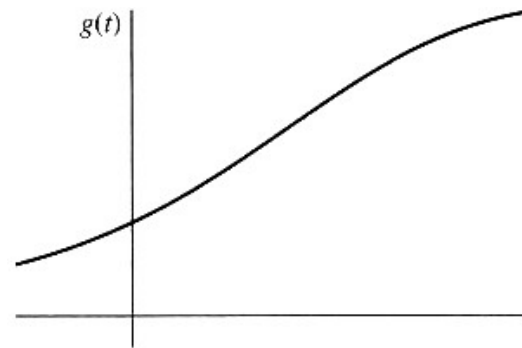
- Reading/Writing 2D bitmaps from/to OpenGL
  - Sprites
  - Fonts
  - Video screens
- Numerous combinations of
  - Equations: + / - / Min / Max /...
  - Logical Operation: AND / COPY / OR / XOR /...
  - Blending coefficients: Src, Dst / Alpha, Colour /...

# Display lists

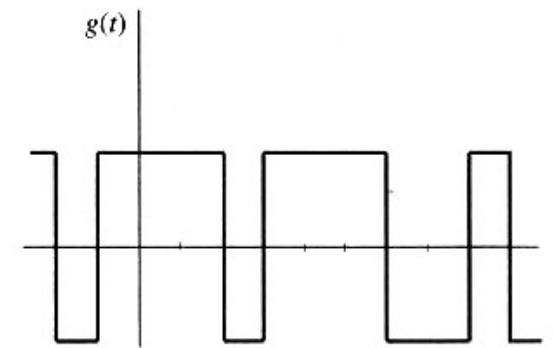
- “Compile” often used OpenGL commands and execute them faster
- Advantages:
  - Very fast
  - Modular
- Disadvantages
  - Static

# Anti-Aliasing

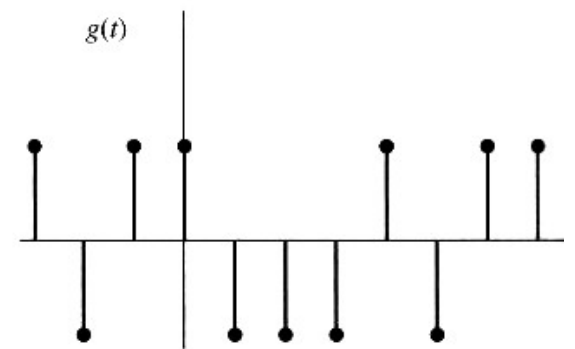
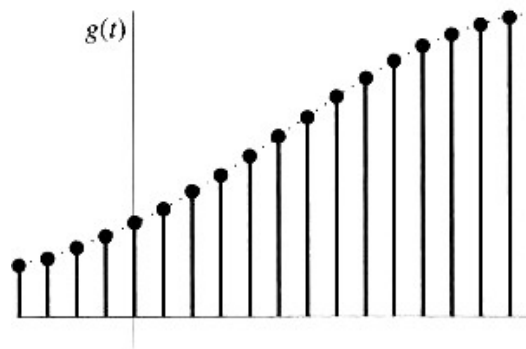
- Signals
  - Continuous / Discrete
  - Time / Space



(a)

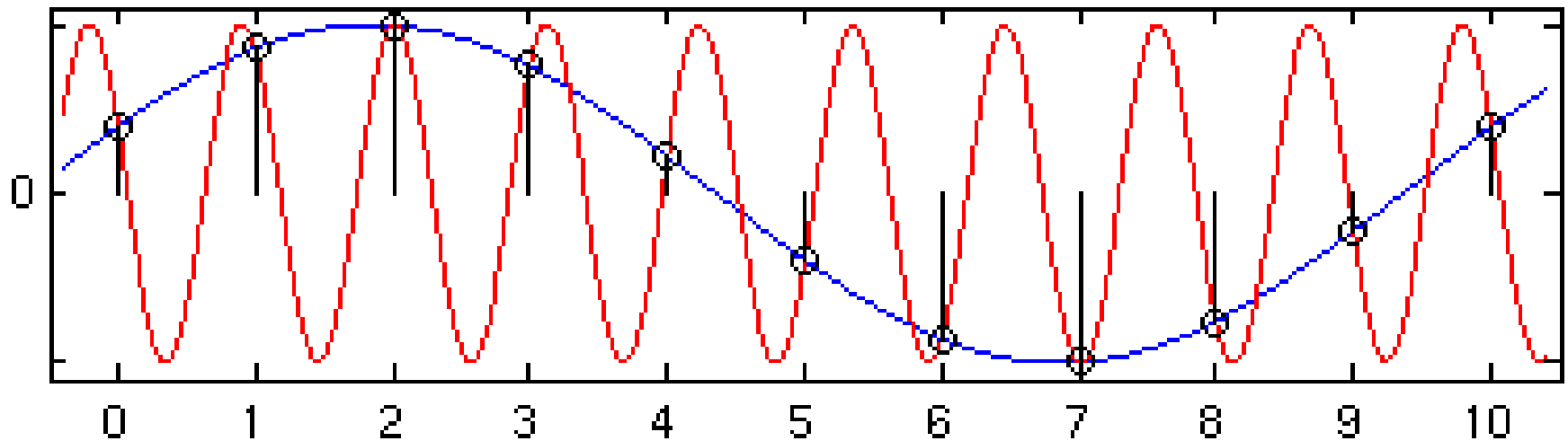


(b)



# Anti-Aliasing

- Aliasing (“alias”, lat: otherwise):
  - One signal looks like another signal after (re)sampling



# Anti-Aliasing

- Problems
  - Jaggies
  - Small objects missed
  - Moire-patterns
- Counter-Measures:
  - Pre/Postfiltering
  - Supersampling
    - Simple
    - Adaptive
    - Stochastic

