



## FINAL Option

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Building a 3D pipeline



## Goals

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- Understanding of the 3D pipeline
- Integration of 2D drawing routines to a 3D rendering



## Assignment

- You will implement a number of OpenGL routines
  - Replace OpenGL with your implementation
  - Allow for drawing of transformed polygons in a 3D space.



## Routines you'll need to write

- Specifying polygons
  - myBegin()
  - myEnd()
    - Places polygon on "display list"
  - myVertex3f()
  - myColor3f()



## Routines you'll need to write

- Clearing and Drawing
  - myClearColor()
  - myClear
    - Clears frame buffer AND z-buffer
  - myFlush()
    - Initiates drawing of polygons in "display list"



## Routines you'll need to write

- Transformations
  - myLoadIdentity()
  - myTranslatef()
  - myScalef()
  - myRotatef()
    - Rotation only about x, y, and z axes.



## Routines you'll need to write

- Viewing
  - myFustum()
  - myOrtho()
  - myLookAt()
  - myViewport()



## Code provided for you

- Sample program
- Sample output
- Stubs to place your implementation
- A new setPixel function
  - That allows specification of color.
  - Use the setPixel you know works on your system!



## Warning Will Robinson!!

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- This is a new and untried lab
  - Any problems...let me know asap
  - Lots of slack in grading.



## Due dates

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- Submission via mycourses
- Due date:
  - Wednesday, November 14 @ 11:59pm
  - HARD DEADLINE
- Please indicate OS/Platform in submission comments.
- REMEMBER
  - This will count as your final exam grade
  - Participation is optional
- Questions?