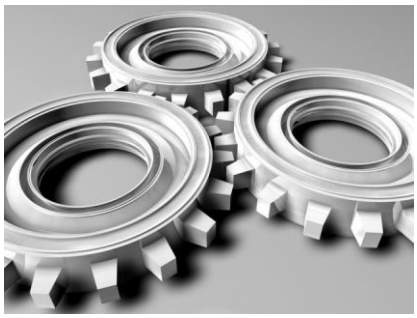
Course Mechanics



Credits: Brown's cs123

The CS1566 Staff

- Professor:
  - Liz Marai (marai@pitt.edu) SENSQ 6115
- Graduate TA:
  - Adrian Maries (amaries@cs.pitt.edu)
  - SENSQ 6512, SENSQ 6510

This week only, for help installing OpenGL & GLUT (SENSQ 6512 & 6510) under

- Windows: see Adrian Maries
- OSX: see Tim Luciani (tbl8@pitt.edu)
- Unix: see Becca Hachey (reh59@pitt.edu)

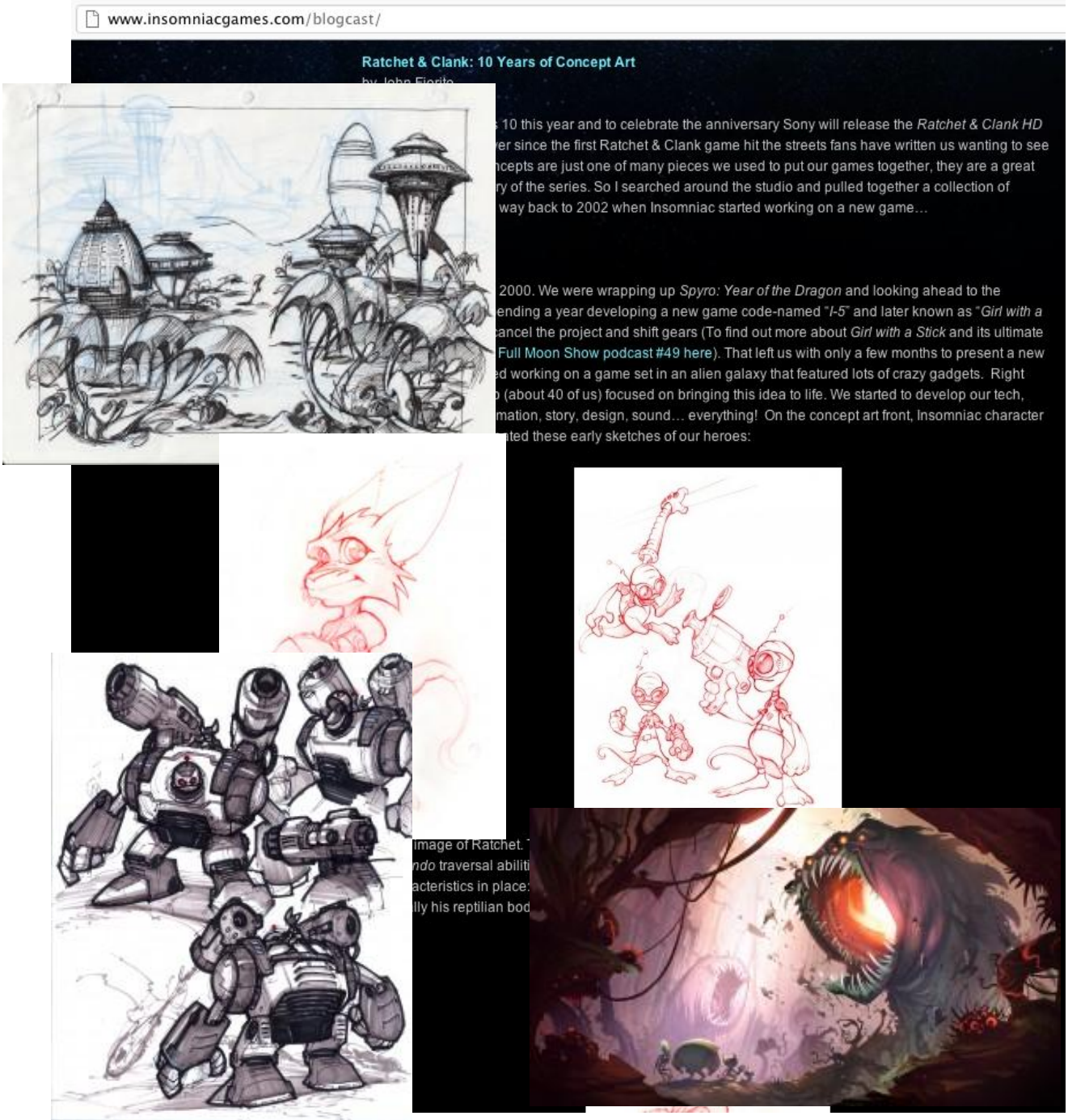
Recitations:

- once a week; mandatory (for your own good)
- section enrollment limited by fire code regulations and grad TA workload regulations

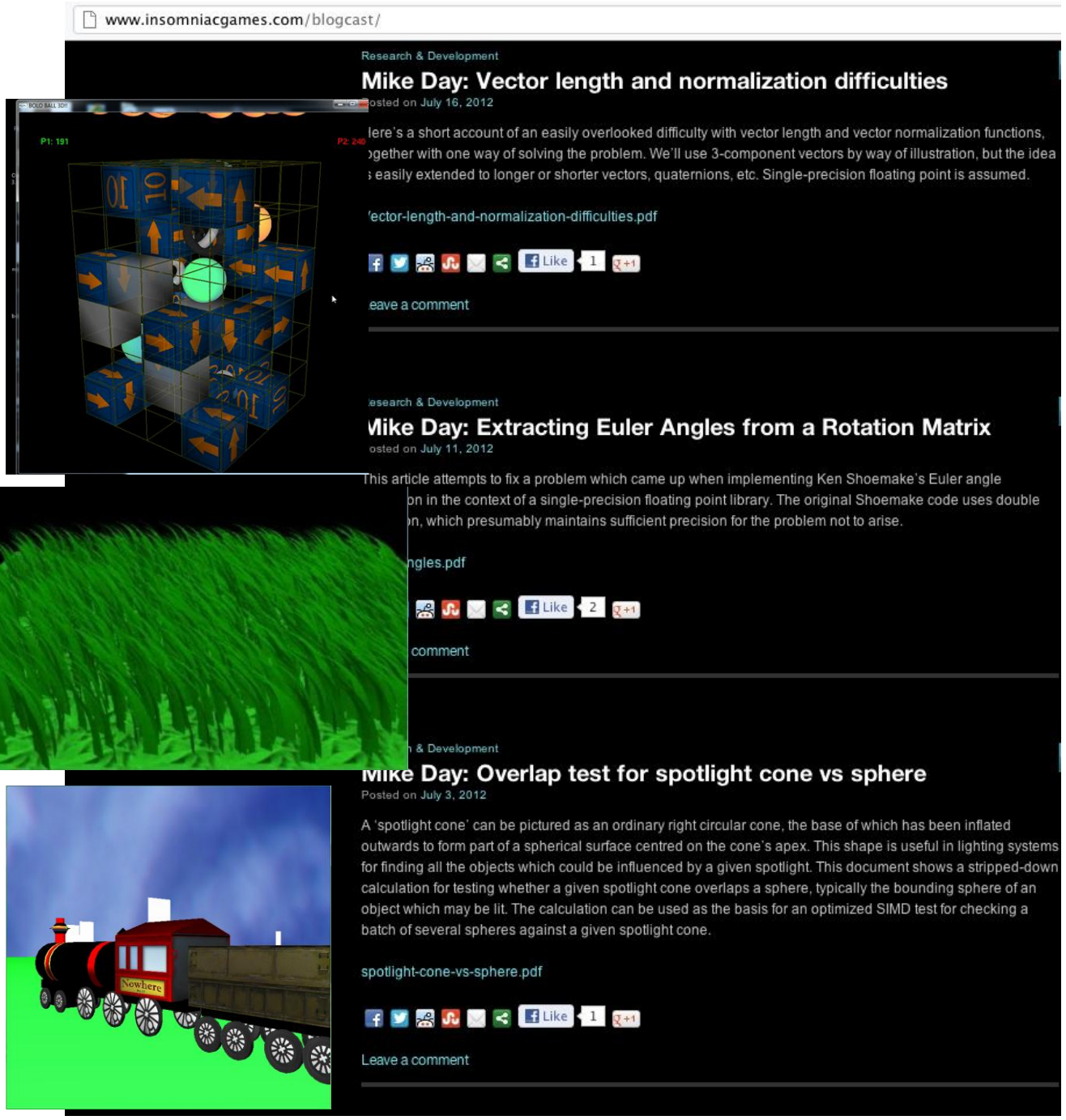
Who Should Take CS1566?

- Juniors or higher
  - with CS445 and CS447; CS449 recommended
  - or equivalent, with good software engineering skills (OO design and programming, debugging)
- Sophomores
  - did well in intro sequence
  - consider themselves good programmers
  - willing to put in extra time
- Masters welcome too
- **If you don't know C, you CAN take this class** (but get ready to invest some time early on)
  - read Java to C++ transition document on webpage
- some Linear Algebra (vector and matrix arithmetic, dot and cross product) required after 2nd week
  - use class/webpage link to learn/review these concepts

What to NOT Expect



What to Expect



Bird's Eye View of the Course

- Basic 3D scene management
  - tessellation of curved surfaces
  - transformation (translation, rotation, scale)
  - virtual camera model
  - scenegraph traversal
- 2D raster graphics
  - basic image transformations
- Modeling and Rendering
  - intersecting rays with simple solids
  - ray tracing
  - lighting and shadowing of polygonal models
  - photorealistic rendering
- Other Topics
  - animation
  - user interfaces
  - video games

Handouts and Handins

- http://vis.cs.pitt.edu/teaching/cs1566/
- Course syllabus (online)
  - assignment deadlines and lecture topics are subject to changes
  - mandatory recitations
- Course missive (online)
  - textbook, grading, late policy, extra-credit
- Collaboration policy
  - read collaboration policy carefully before you sign because it is a contract
- First assignment: warm-up exercise in C, OpenGL & GLUT
  - program handin – Thursday, Sept 6th, 11:59pm

Items Close to Our Hearts

- Class starts on time: fair-play skit policy
- Laptops/tablets/phones: special seating;
  - Think: Why did you trek to 5129?
  - Not for the awesome free wi-fi in the room.
  - Youtube *Gorilla-basketball experiment* (50% viewers blind regarding gorilla);
- Asking questions: if I don't notice a raised arm, please say "Question" and point to the person with the raised arm
- Grading-questions: ask w/in one week of grading, or forever hold your peace
- 5-minute student presentations at start of each class; mandatory

See course missive on-line for absences, late, EC policy etc.

Projects and Exams

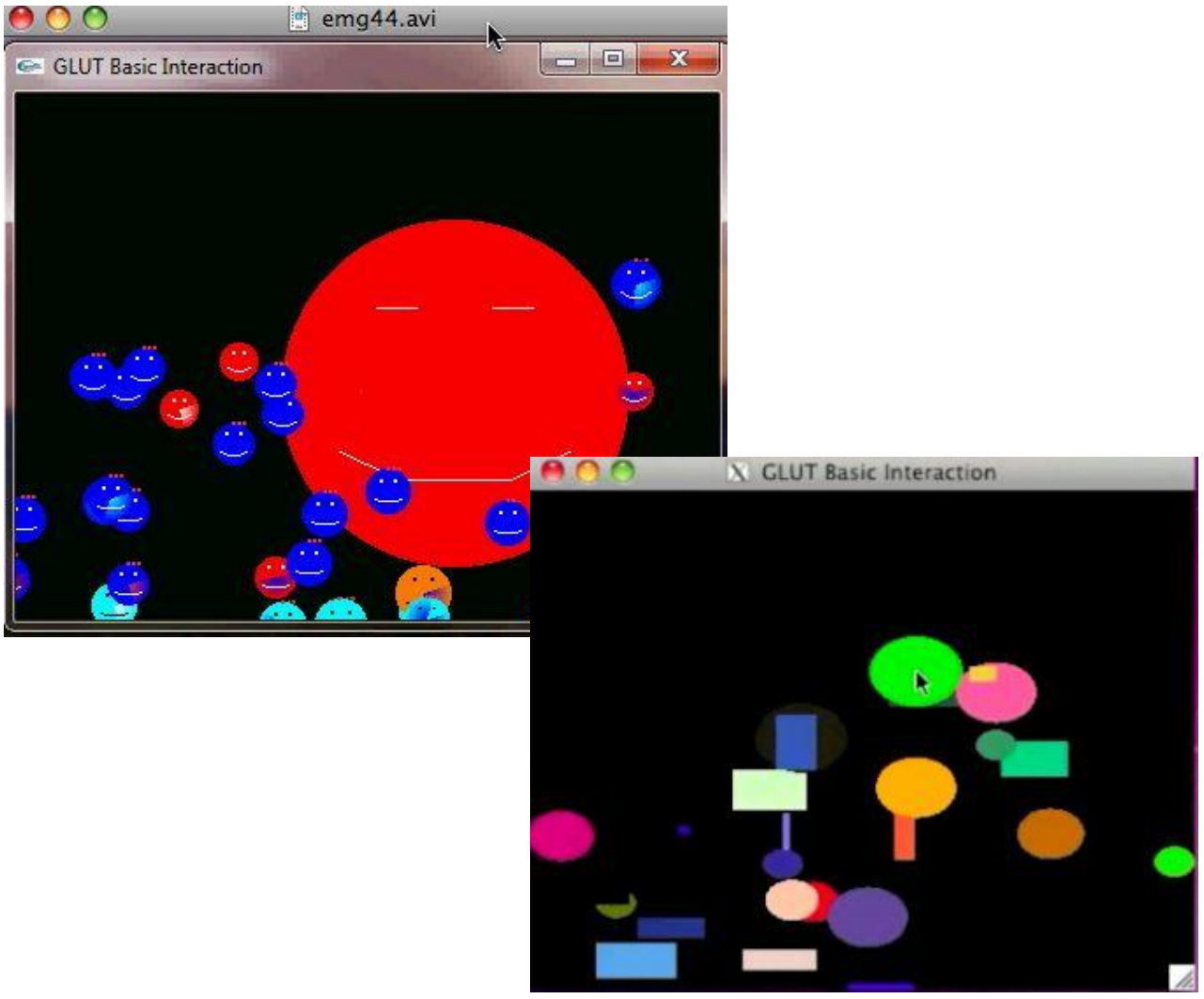
- 5 or 6 Programming Projects (2 parts)
  - programming-intensive class, nuts-and-bolts
  - some math and algorithms
  - platform of your choice, BUT your handin must build and run on either
    - Windows PC in SENSQ 5505
    - Mac in SENSQ 6110
    - Linux elements.cs.pitt.edu
  - assignments build on each other
- 1 Mid-term in class
  - we *really* want to make sure you understand this material.
- 1 Final Exam in class
  - ditto
- 1 Final Project
  - most rewarding assignment in CS1566

- *Expect 15-20 hours of work every 2 weeks and an intense push the week before exam week*

Assignment 1

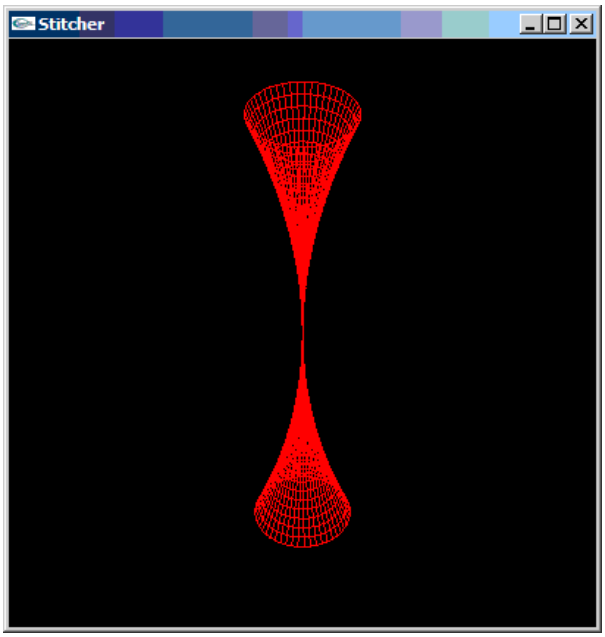
- OpenGL & GLUT warmup

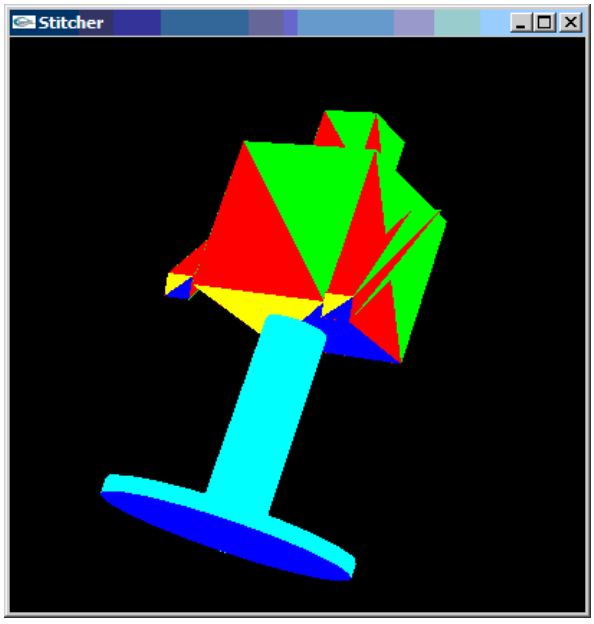
- 2D shapes, interaction and animation



Assignment 2

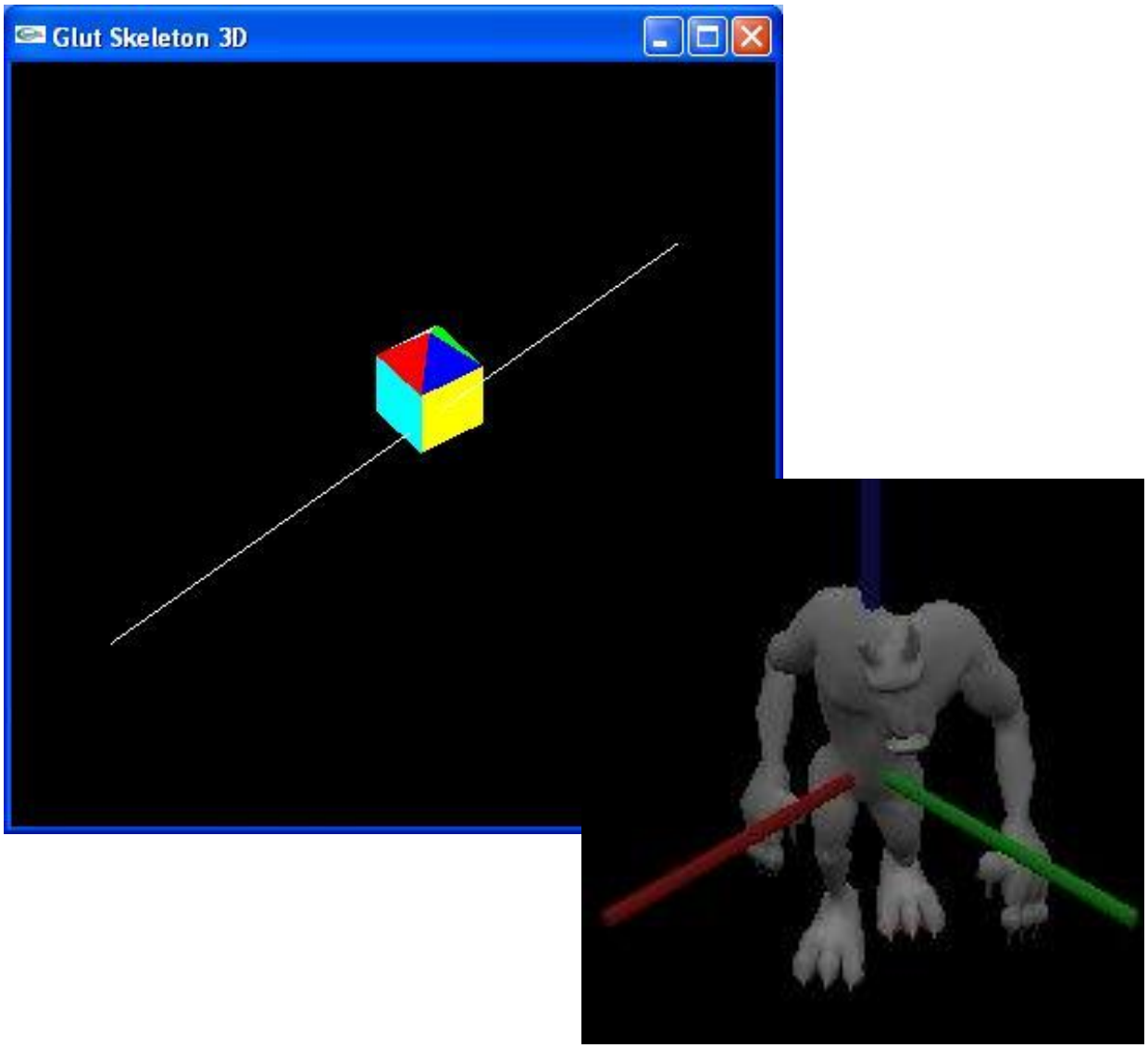
- 3D modeling





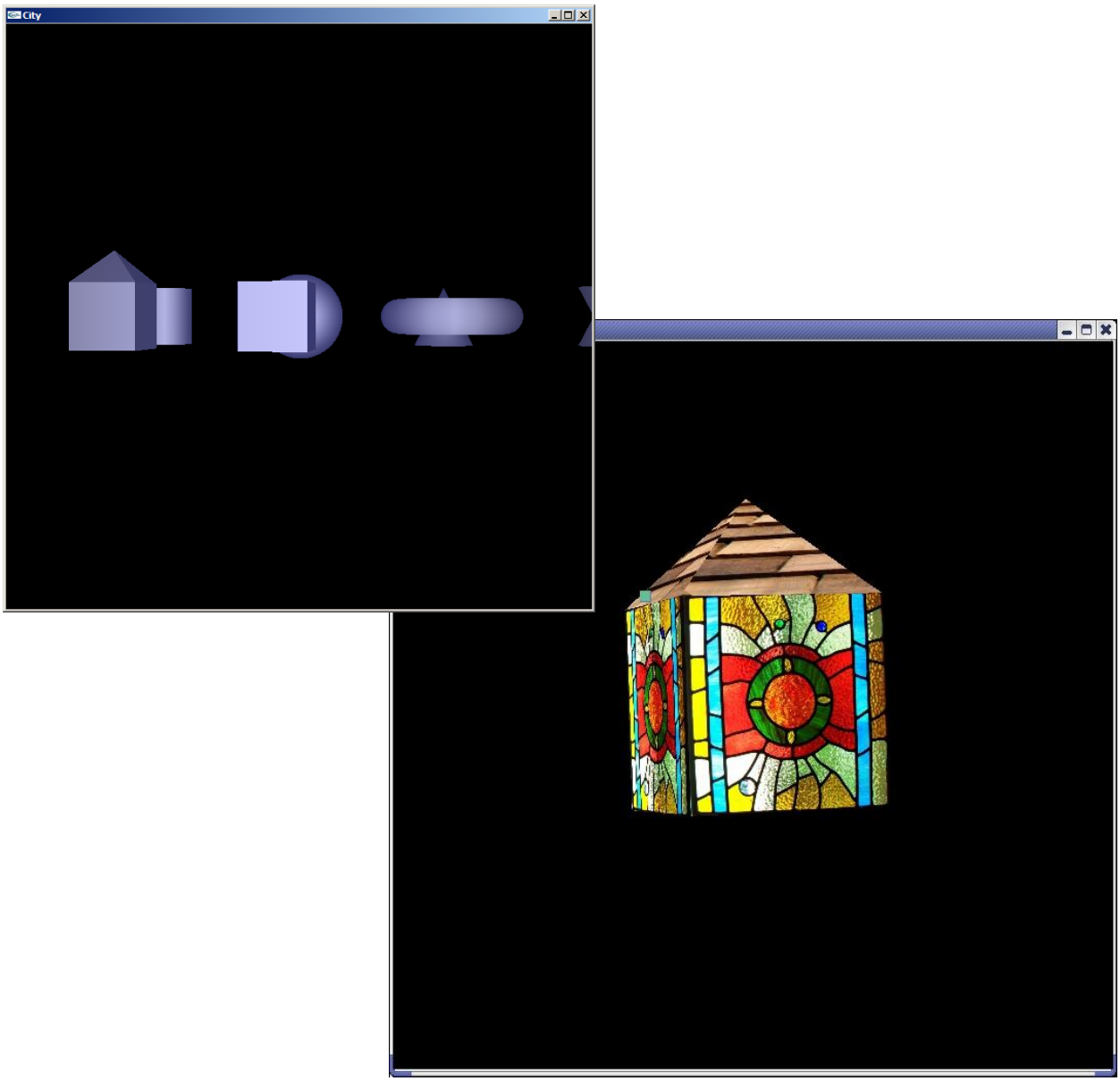
Assignment 3

- 3D camera and interaction



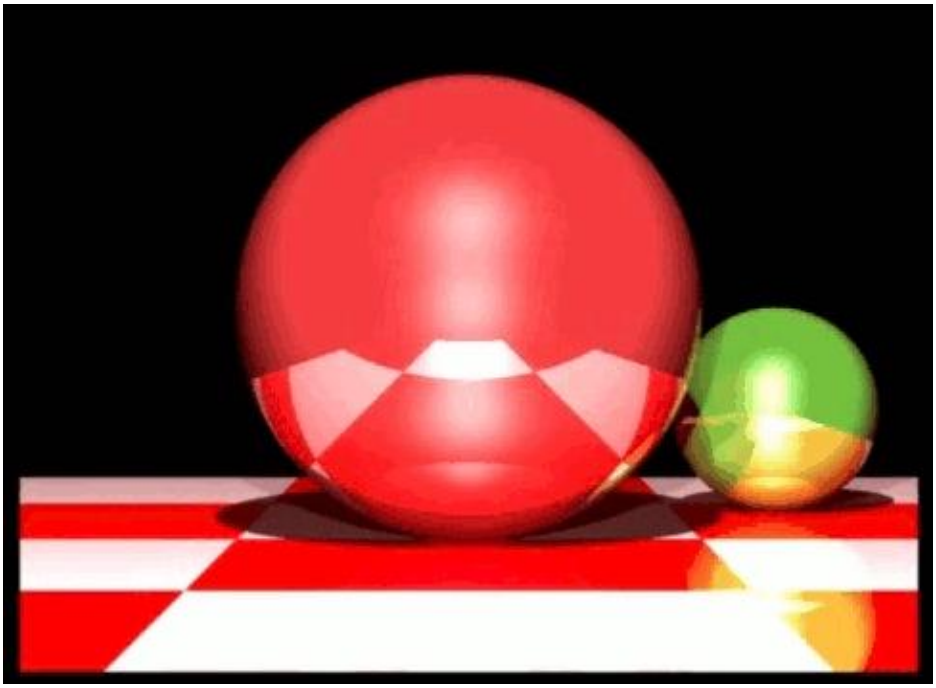
Assignment 4

- Lighting and object interaction

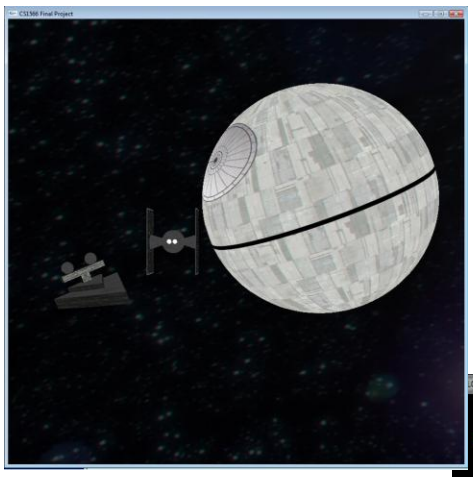


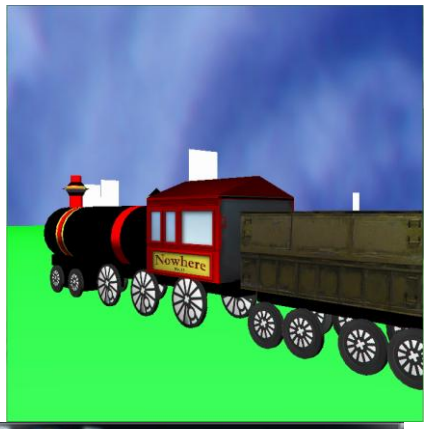
Assignment 5-6

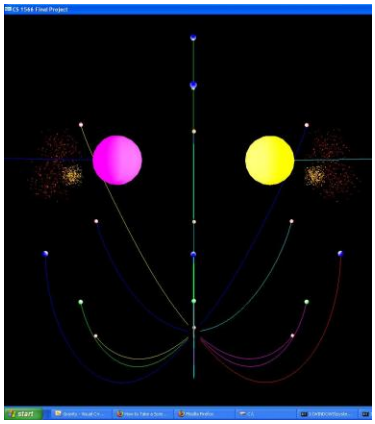
- Photorealism

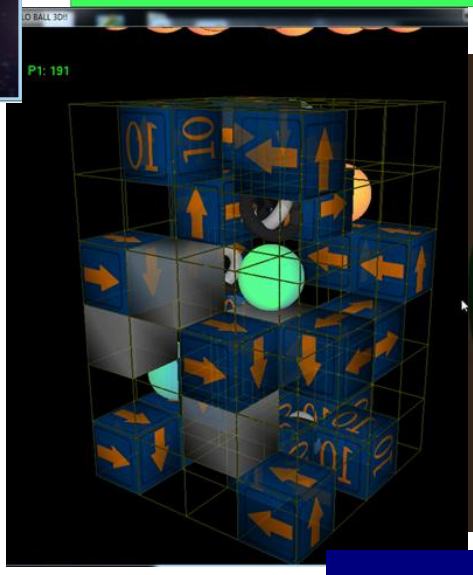


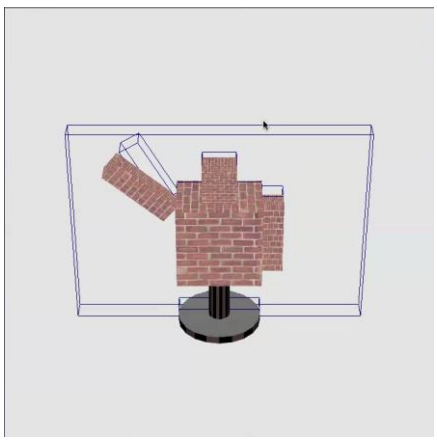
Final Project

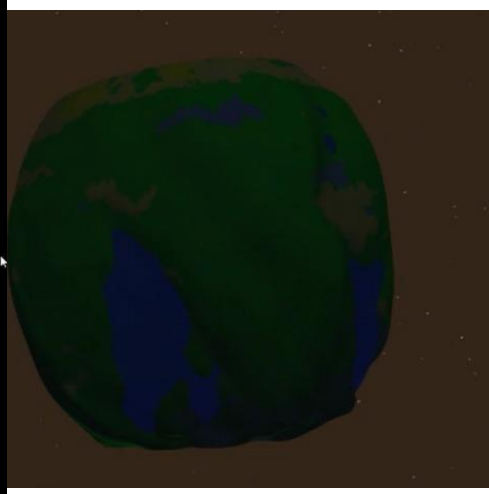


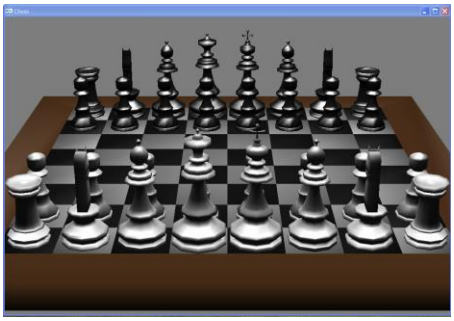


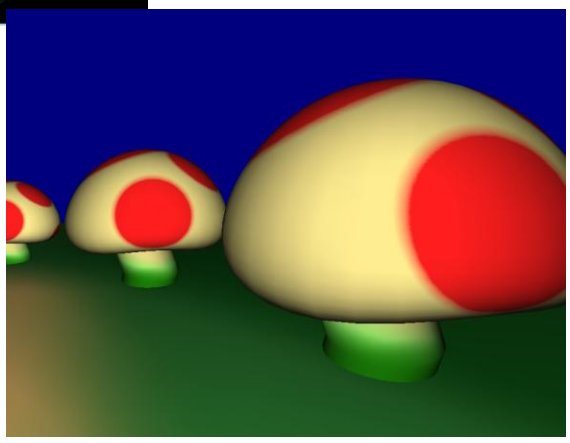












And now for some demos…