Interactive Computer Graphics

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Intro

- https://www.youtube.com/watch?v=wAu8w7n4LHM

lecture

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coursework CSL

Matthew Baugh + GTA team
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Liu Li, Sarah Cechnicka, Yiming Luo

Interactive Computer Graphics

- Please note that this course has been timetabled for 2 hours per week:
  - Friday 11-12, Huxley 311 and MS Teams
  - Friday 12-13, MS Teams Lab queue

- However, not all timetabled slots will be used every week so **please check the timetable** on the webpage for more information:

http://wp.doc.ic.ac.uk/bkainz/teaching/60005-co317-computer-graphics/

Interactive Computer Graphics

- Printouts:
  - Lecture notes & tutorials:
    - Please print your own if you want a hardcopy

- Lectures:
  - All lectures have slides are available via https://scientia.doc.ic.ac.uk/2324/modules/60005/materials
  - Some lectures have orthogonal notes that are available via https://scientia.doc.ic.ac.uk/2223/modules/60005/materials
  - Lectures are partly flipped classroom with pre-recorded high-quality lectures you might want to watch during the week, recap and discussion during class sessions.
- Tutorials:
  - All tutorials have sample solutions that are available a few days after the tutorial on https://scientia.doc.ic.ac.uk/2324/modules/60005/exercises

Interactive Computer Graphics

- Course overview:
  - Syllabus, timetable and news on

    http://wp.doc.ic.ac.uk/bkainz/teaching/60005-co317-computer-graphics/
  - See notes on vector algebra revision (link)

- Course materials and notes:
  - Look at Scientia for lecture notes, tutorials & coursework

Information for non DOC students

- Apply at https://dbc.doc.ic.ac.uk/externalreg/

- Your department's endorser will approve/reject your application
  - No access after a few days? Check status of approval and contact relevant person(s)

- Key Dates:
  - Exam registration opens end January for 2-3 weeks
  - Exams for DoC 3rd/4th year courses take place at the end of the Term in which the course is taught – courses that are co-scheduled on the time-table will have their exams co-scheduled

- If in doubt, read the guidelines available at the link above

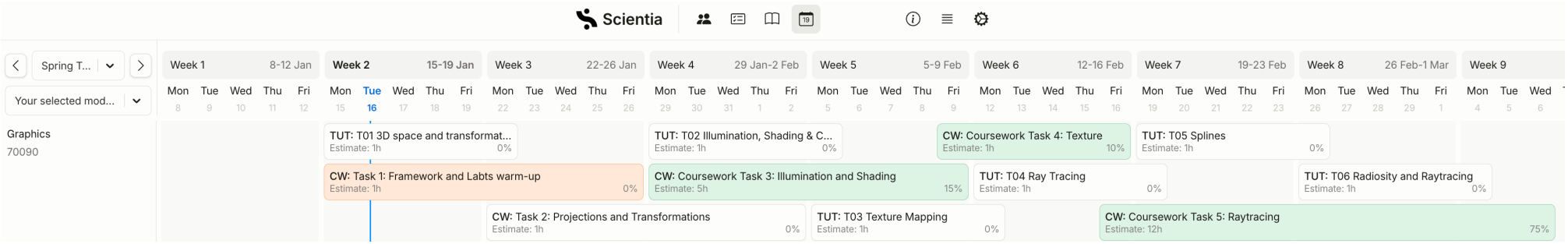
Courseworks

- There will be six practical coursework tasks; three of them are assessed:
  - Task 1: Framework
  - Task 2: Transformations
  - Task 3: Illumination (assessed 15%)
  - Task 4: Color
  - Task 5: Texture & Render to Texture (assessed 10%)
  - Task 6: GPU ray tracing (75%)

- All practical courseworks require programming experience (very basic C) and google skills

Logistics

- 6 tasks, 3 assessed
  - 1-5 One per week
  - Task 6: 2 weeks
- Description and framework already available for all exercises, but
- Necessary knowledge in each lecture per week
- Submission electronically via LabTS! - Matt



Effects previous years' student feedback and COVID-19

- Redesigned the coursework to better match the content of the lectures in each week
- Made the framework available to everybody through a browser implementation (no computing lab requirement anymore)
- Provide an open-source implementation of a custom OpenGL GLSL IDE
- Reduced the workload to three assessed tasks, revising assessment. Tasks 1,2,4 are voluntary. Removed one task to reduce workload
- One exam question will be based on what you learned during the coursework!
- LabTS submissions with automated immediate feedback
- Re-implemented the framework for the coursework for a second time:
  - It is now the most advanced teaching framework for computer graphics
  - updated to WebGL 2, which provides most recent programming features
- Everybody can use it now from their own laptops without needing to install anything: http://shaderlabweb.doc.ic.ac.uk/
- We listened to your feedback from the last years!
  - Please fill in the feedback questionnaire at the end of this course!

CSL and TAs

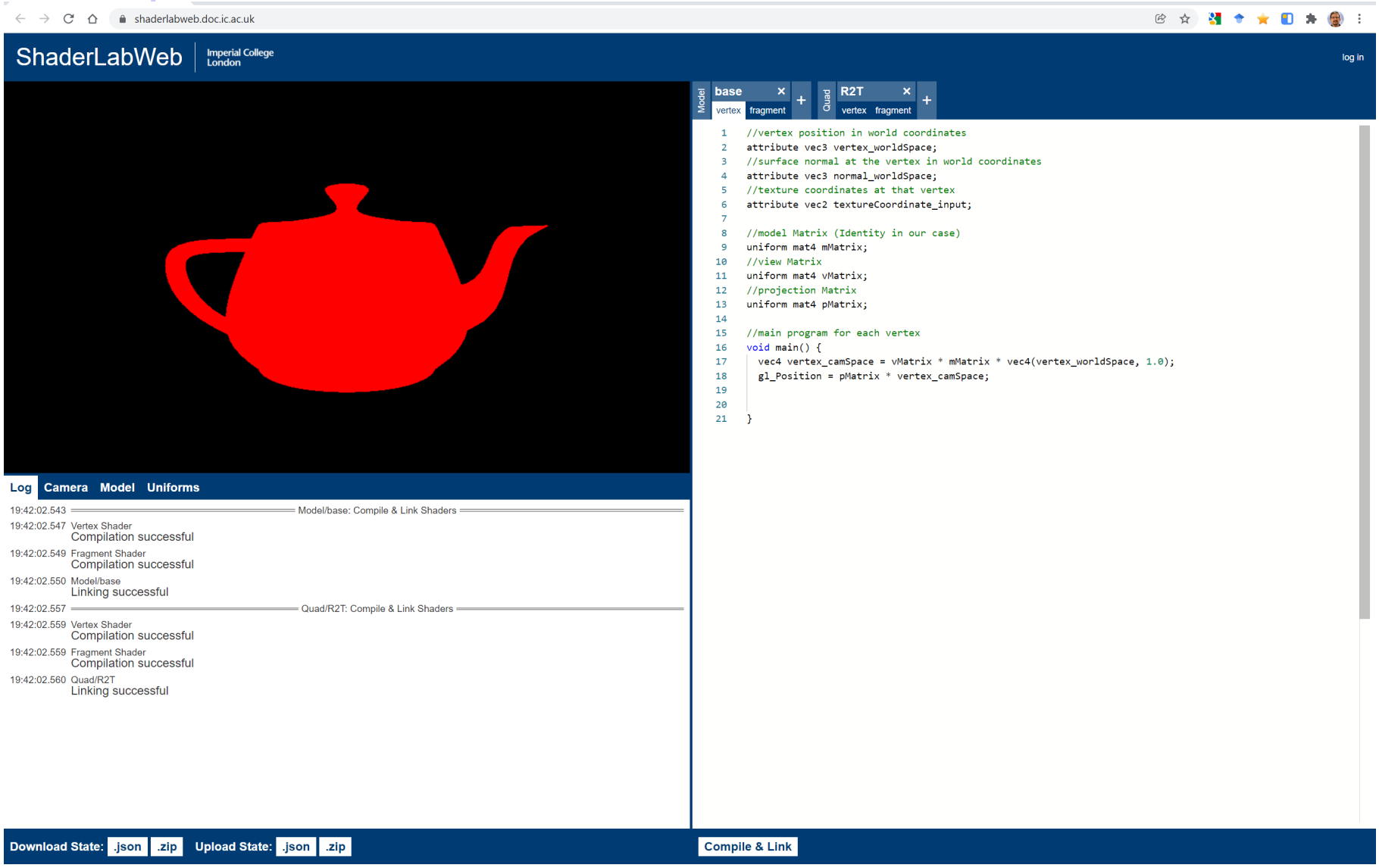
- Educational support leader and GTAs:
  - Matthew Baugh matthew.baugh17@imperial.ac.uk

Labs in MS Teams Lab queue/311

- Week 3: Friday 12-13
- Week 4: Friday 12-13
- Week 6: Friday 12-13
- Week 8: Friday 12-13

framework

- http://shaderlabweb.doc.ic.ac.uk/

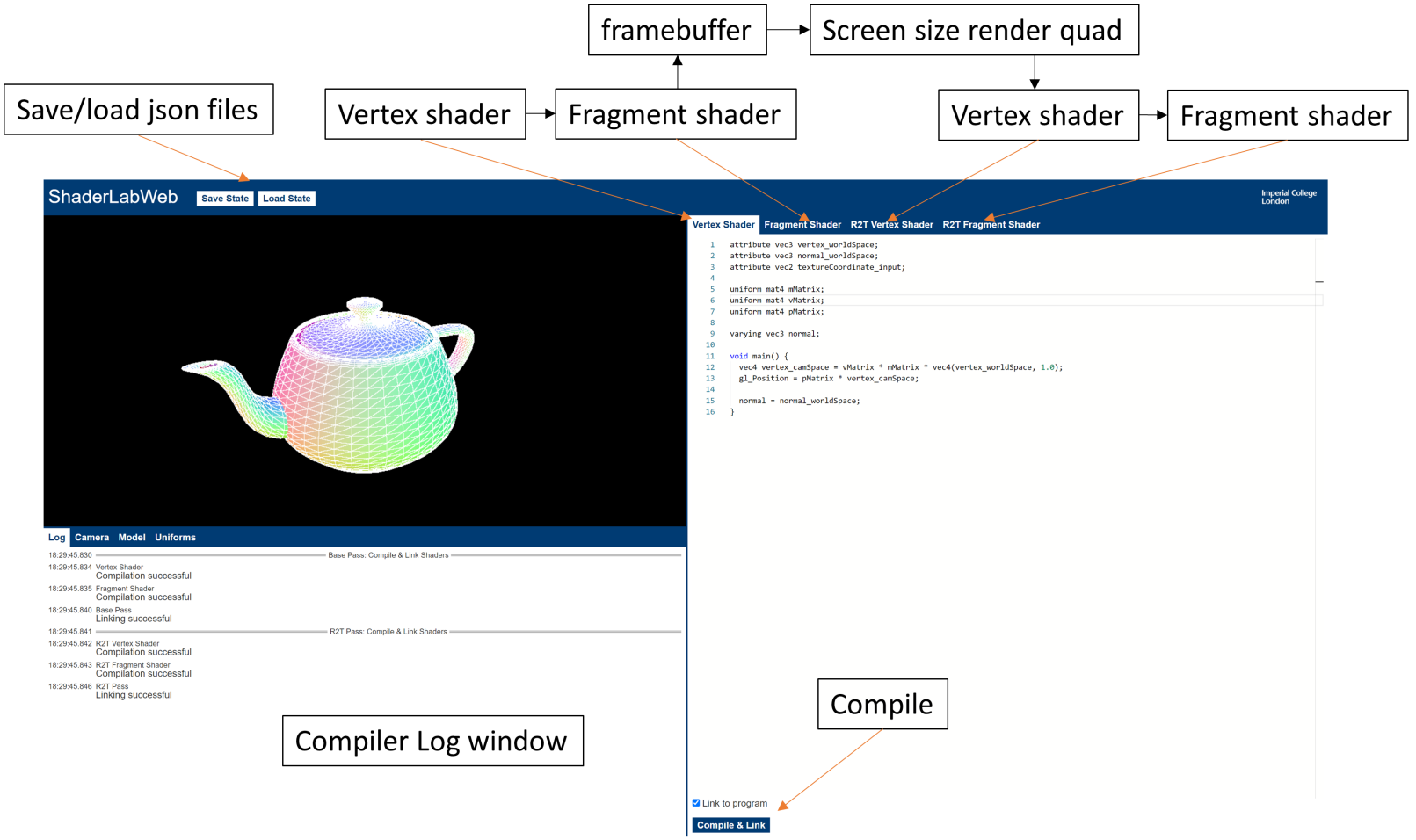


starting the framwork

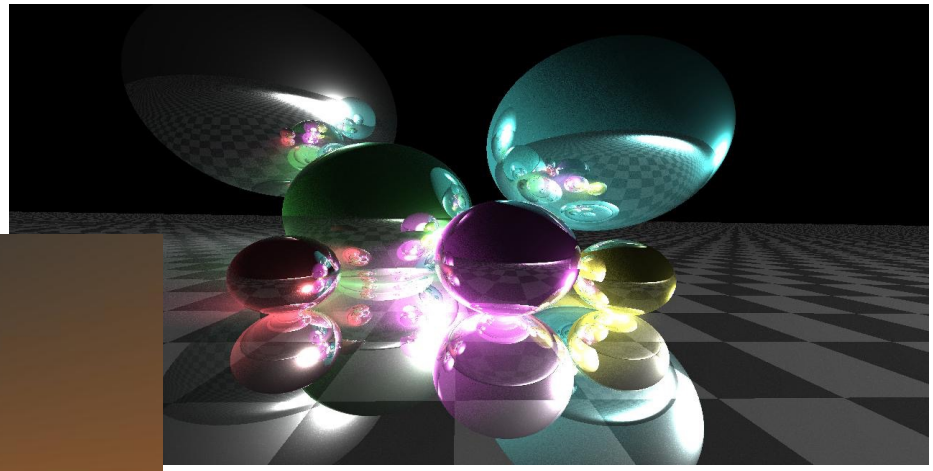
- Open a browser (preferably Google Chrome)
- Enter http://shaderlabweb.doc.ic.ac.uk/

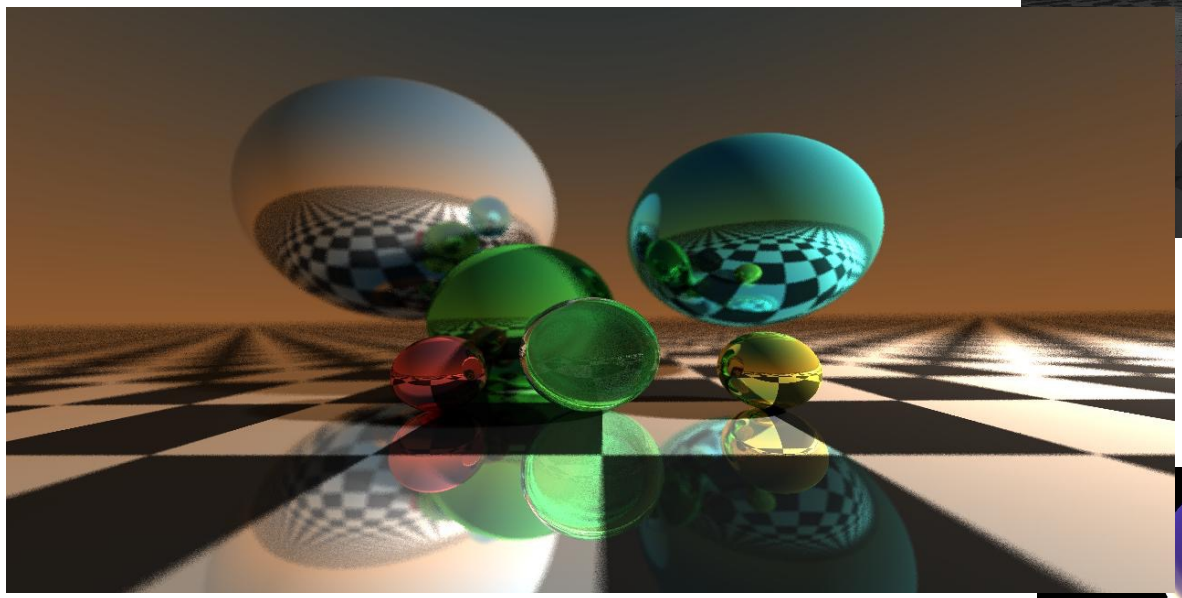
Tasks

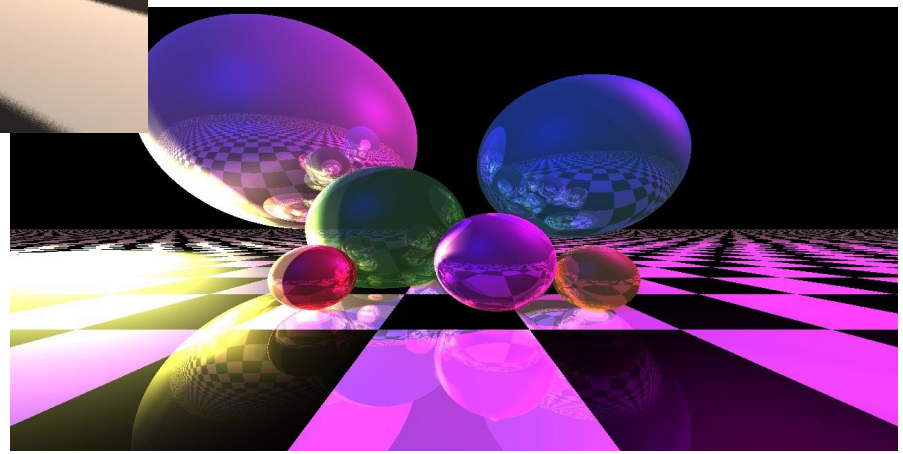
- Task 1:
  Get familiar with the framework



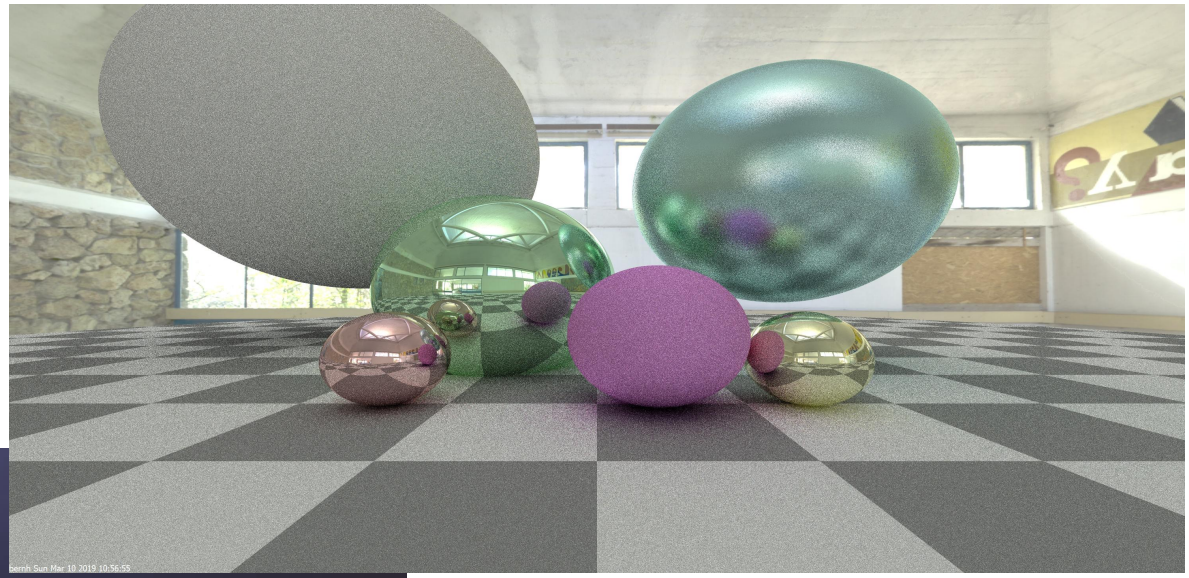
Task 6: Student solutions

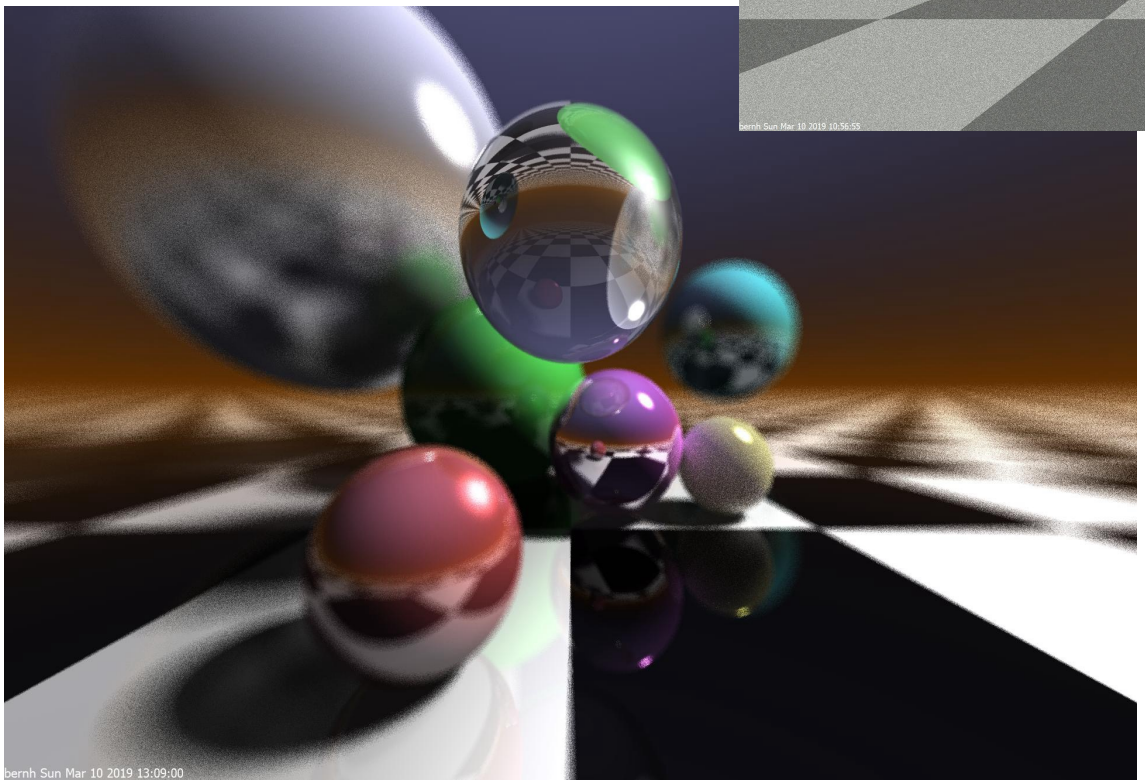






Student solutions





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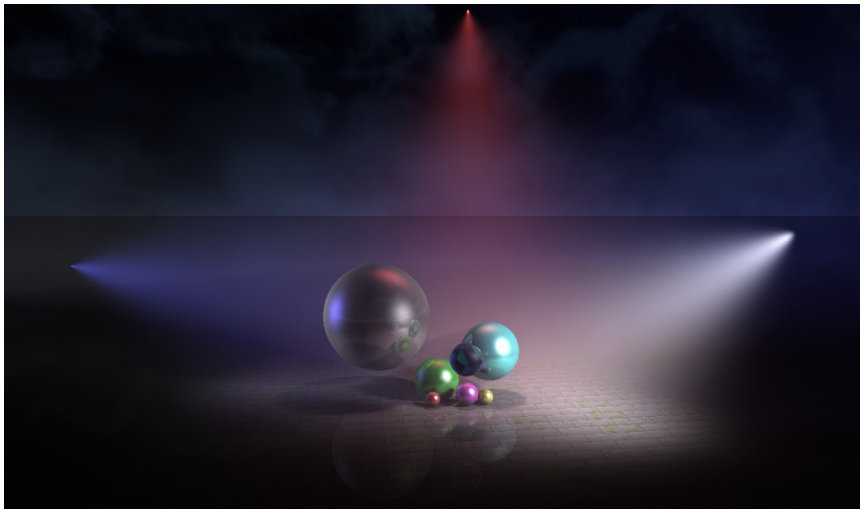

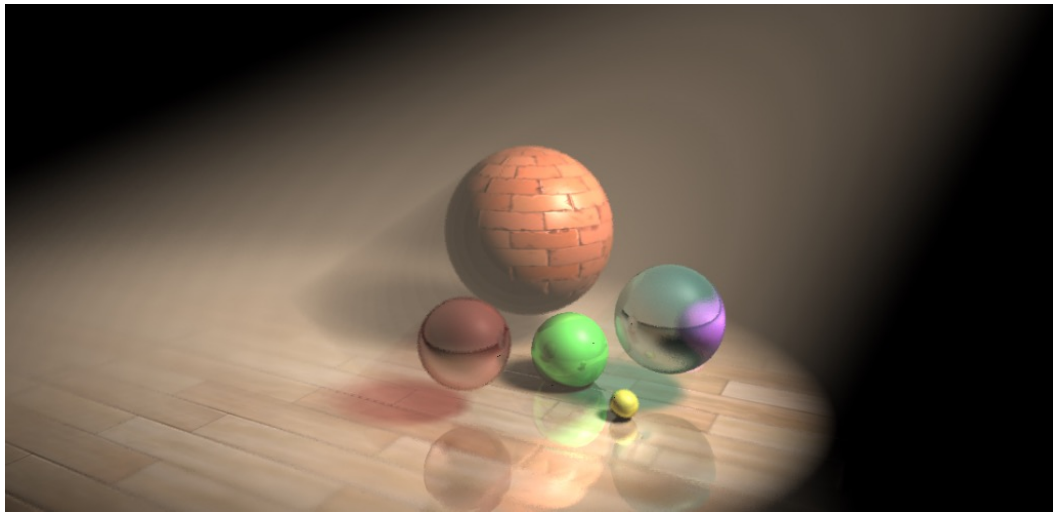

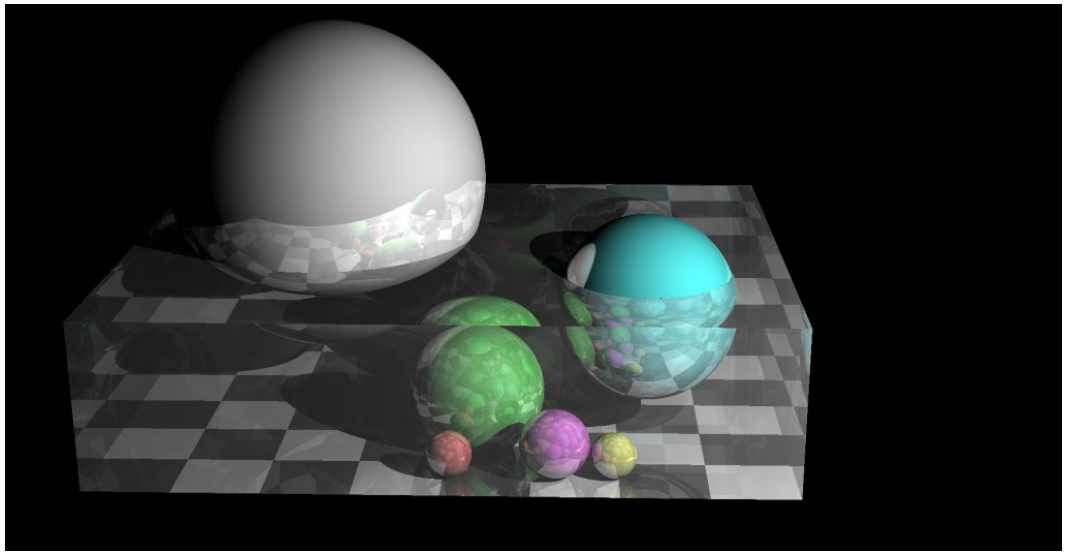

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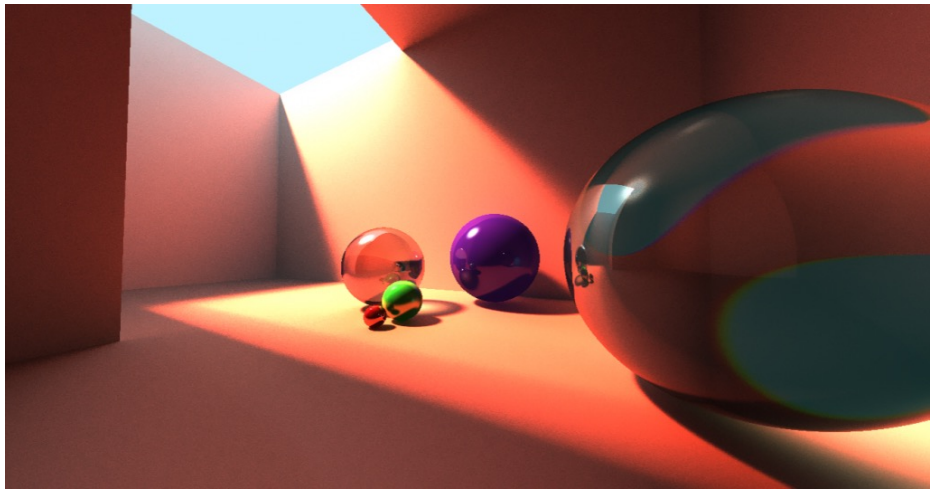

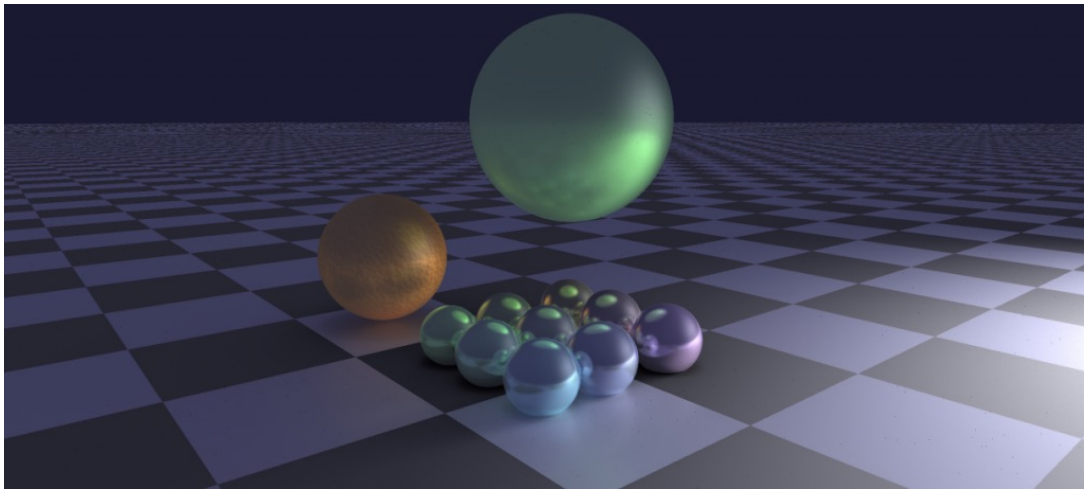

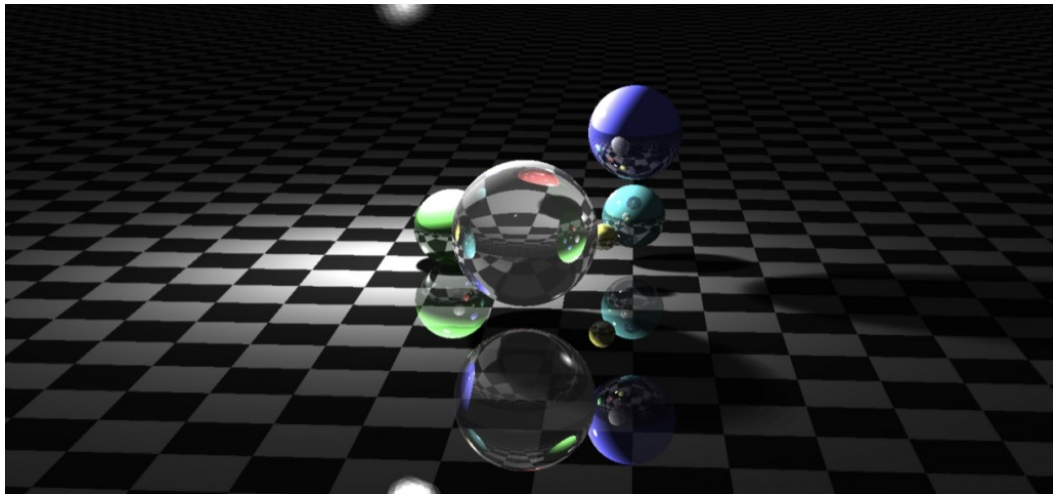

Questions:

https://edstem.org/us/courses/46822/discussion/

Have fun!