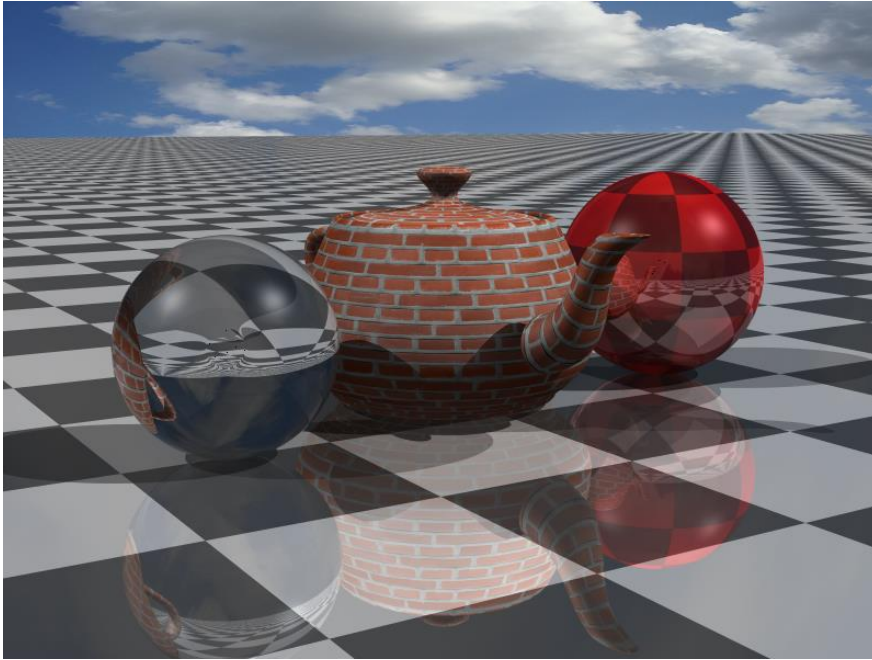


## COSC4370 Final Project

You can choose one of the two projects.

### A. Ray tracing and environment mapping

You need to render a figure like this:



It includes shading, shadows, reflections, refraction, texture and antialiasing.

You need to import a teapot with texture (you can use the hw5's assets), a plane and create two spheres. You don't need to implement the sky. You will be given an xml file describing the scene.

You can refer to these tutorials:

[https://www.youtube.com/watch?v=k\\_aRiYSXcyo](https://www.youtube.com/watch?v=k_aRiYSXcyo)

### B. Skeletal Animation

Read a Collada file with animation and use OpenGL to show the animation. Add some lights as you want.

The result can refer to the demo video.



You need to parse the file and get the related information. Then set the keyframe animation and interpolate between them.

There is an online tutorial showing the process, you can refer to it.

<https://www.youtube.com/watch?v=f3Cr8Yx3GGA>

#### Instruction:

1. Put the contents in a zip file(FileName: "firstname\_lastname\_Final.zip").
2. Please also name the window as "firstname\_lastname\_Final" in your codes.
3. Upload the zip file on blackboard by deadline.
4. Late submissions incur penalty. (Refer to late submission policy from the lecture of class introduction).
5. All coding must be done using C/C++.
6. You must use the modern OpenGL way which you need to write the shader by yourself.

#### Submission Instruction:

7. You need to submit the source code, like C/C++ header and source files. Also, you need to submit a snapshot of your result. (The print of your entire screen to make it different from others, refer to previous homework).
8. You can use any kind of libraries online.
9. Include a readme file to describe the online libraries that you use and online tutorial or documentations you refer to.
10. You need to do the presentation in the first week of December. Probably need to run your codes and show the results. The professor and ta will grade during the presentation.