

CS 174A — Introduction to Computer Graphics: Assignment 2

Let your imagination fly!

Due: Thurs Nov 12th 11:59pm

Weight: 15 %

Maximum points: 37

Note: The class will hold a vote on the best animations / games! The top five will receive some extra credit towards project 3 and the final (but not enough to preclude taking them!)

Collaboration: None. If you discuss this assignment with others you should submit their names along with the assignment material.

Start working on this assignment early. You will not have time to do a satisfactory job at the last minute.

Write a program that displays an animated scene. Your scene should include a combination of hierarchical objects that move around. Required elements:

- [4 points] At least one two-level hierarchical object (e.g., a human arm).
- [4 points] At least one texture, either procedural or mapped.
- [4 points] Demonstrate manual camera fly-around using *LookAt*.
- [6 points] Polygonal objects of your own (you must provide positions, normals, and texture coordinates directly, by extending the Shape class), drawn in different places using both flat shading and smooth shading variants of the Phong reflection model.
- [2 points] Real-time speed. Make sure that your animation runs at the same speed no matter how fast of a machine your program runs on. "Real time" means that one simulated second corresponds roughly to one real second.
- [2 points] Display the frame rate of your program on the graphics window.
- [2 points] Make and submit a movie of your animation using your favorite screen recording application (camstudio/quicktime). If your application is interactive, your submission must be a video of it being used. You can add subtitles. Make sure you encode your movie to within 100MB.
- [4 points] Creativity (story, colors, etc).
- [4 points] Complexity.
- [5 points] Overall quality: Object and camera motion, scene construction, proper texturing, attention to detail.

Special instructions:

- Your video must be only of what your program executable can output given any required user input. The video should not be edited.
- Note that creativity and quality amount to 9 points. You will not get a perfect score if your scene is complex, but not creative.
- You must use the provided template code; however, you can modify it as you see fit.
- You must do the assignment from scratch. Using any piece of code from any source (e.g., previous offerings of the course, the web, etc.) will be considered plagiarism.
- You can see examples of animations made for previous offerings of this course at:
<http://www.cs.ucla.edu/~dt/courses/CS174A/animations/>

Submission guidelines:

- Submit your movie with the name `<uid>.ext`, where `<uid>` denotes your 9 digit bruin ID, `ext` can be any common video format such as `mp4` and `mpg`.
- Submit all the files required to build and run your project in a single archive named `<uid_os>.zip` (e.g., `802870392_windows.zip`). Include the project files, but do not submit the executable or any intermediate files.
- If you use texture mapping in your project, submit all the images within `<uid_os>.zip` in the location required by your program. They should not have to be moved in order for your program to run correctly.
- Include in the top level of your `<uid_os>.zip` archive a `README.TXT` file that summarizes your animation, identifies the hierarchical, polygonal, and texture mapped objects, and explains anything else that might be helpful to know in grading your project.