

Interactive Graphics

Homework 2

Online Wednesday May 10th, 2023

Deadline: Sunday **June 4th, 2023 (11.59pm, Rome time zone)**

Tasks to do

The homework must be completed alone. Each student should do its own homework and **NO CODE SHARING IS ALLOWED**. Submissions will be checked for plagiarism and suspicious ones will be rejected and reported. You cannot use code taken from the web, the only code you are allowed to use in your submission is the initial code provided with the assignment and the code of the book. You can, however, access all the documentation you want (including the WebGL and GLSL official documents on <https://www.khronos.org/>).

To complete the assignment you need to use GitHub Classroom. Start by creating your own repository in the GitHub Classroom of the course by clicking on this link https://classroom.github.com/a/vKlZ_5ie. The assignment material includes this PDF file and two directories, Homework2 (containing the files homework2.html and homework2.js) and Common (containing the files MVnew.js and initShaders.js). You need only to modify the two files (homework2.html and homework2.js), add textures (if needed) and add a short documentation in PDF format (more details at the end of this file). Please **do not change the names of the files**, you only need to modify their content.

You need to remove the control sliders and modify the files, so to obtain the following effects:

1. Create a hierarchical model of a (very simplified) cat, composed of the following parts;
 - a. body
 - b. 2 upper legs, each one composed of 2 independent components (upper and lower part)
 - c. 2 lower legs, each one composed of 2 independent components (upper and lower part)
 - d. head
 - e. tail (composed of at least 3 components)All components are cubes, use the cube function present in the file. The cat has a light gray color.
2. Add a surface on which you position the cat that corresponds to a carpet. Attach to it a bump and color texture to give the appearance of a carpet.
3. Load or generate at least two more textures. A color texture is attached to the front face of the head and a bump texture is applied to the sides of the body.
4. Add a (simple) table on top of the central part of the carpet.
5. Add a button that starts an animation of the cat so that, starting from an initial position it walks towards the table, then jumps on top of the table, and then moves to the center of the table and stops there.
6. Allow the user to move the camera before and during the animation.
7. Add a motion blur effect to the animation. Add a button that activates/deactivates this effect

Describe your solution in a short document (2-3) describing your solution, the document should include a brief description of the techniques used, the advantages and disadvantages of the proposed solution, and the features of your solution.

How to submit the homework

All files **MUST** be uploaded to the **GitHub Classroom** of this assignment, including the **documentation**.

Don't post solutions on Google Classroom. Use Google Classroom only for questions and clarifications. Do not ask for clarifications or comments by email, use only Google Classroom