

COMPUTER GRAPHICS

HOMEWORK 2 : 3D CUBE C#

ASSIGNMENT

Within C#, create a 3D cube. Handle KeyPress events to manipulate the cube. Also, add an animation.

This homework is mandatory!

REQUIREMENTS

- Starting parameters
 - o $d=800$
 - o $r=10$
 - o $\theta=-100$
 - o $\phi=-10$
- Handle keys
 - o Cursor keys: change x/y
 - o PgUp / PgDn : decrease / increase z
 - o x/X, y/Y, z/Z : rotate around x-axis, y-axis, z-axis
 - o s/S : scale (increase / decrease)
 - o All stepsizes are 0.1
- When "C" is pressed, all variables are reset to default. Animation (if active) will become inactive
- When "A" is pressed, start animation
 - o Phases
 - Phase 1: Scale until 1.5x and shrink (stepsize 0.01)
 - Phase 2: Rotate 45° over X-axis and back
 - Phase 3: Rotate 45° over Y-axis and back
 - o During phase 1-2, decrease θ
 - o During phase 3, increase ϕ
 - o After phase 3, increase θ and decrease ϕ until starting values. Then start with phase 1
 - o If no stepsize is mentioned, use stepsize 1
- Hints to get more insight:
 - o Display all parameters in the window
 - o Make more events to change all parameters manually (e.g. r/R for r, t/T for θ , etc.)
 - o Make unit tests for matrices and vectors
 - o Check ELO for "The Movie"

TEAMS

- Work in pairs (mandatory)
- Write code yourself
- Use comments to explain what you are doing

DEADLINE AND UPLOAD

- Only one person per team should upload
- Fill in the evaluation form and add this to your solution
- Make a RAR of your solution and name it "CG – HW2 - [Name1] - [Name2].rar" (e.g. "CG – HW2 - Piet Jansen - Jan Pietersen.rar")
- Deadline : March 14th 2021
- Deadline resit : August 15th 2021