

Introduction to Graphics Programming and its Applications

繪圖程式設計與應用

Quiz 2 Buffer & Uniform

Examination Time : 17:30~18:20 (50 mins)

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CS4505

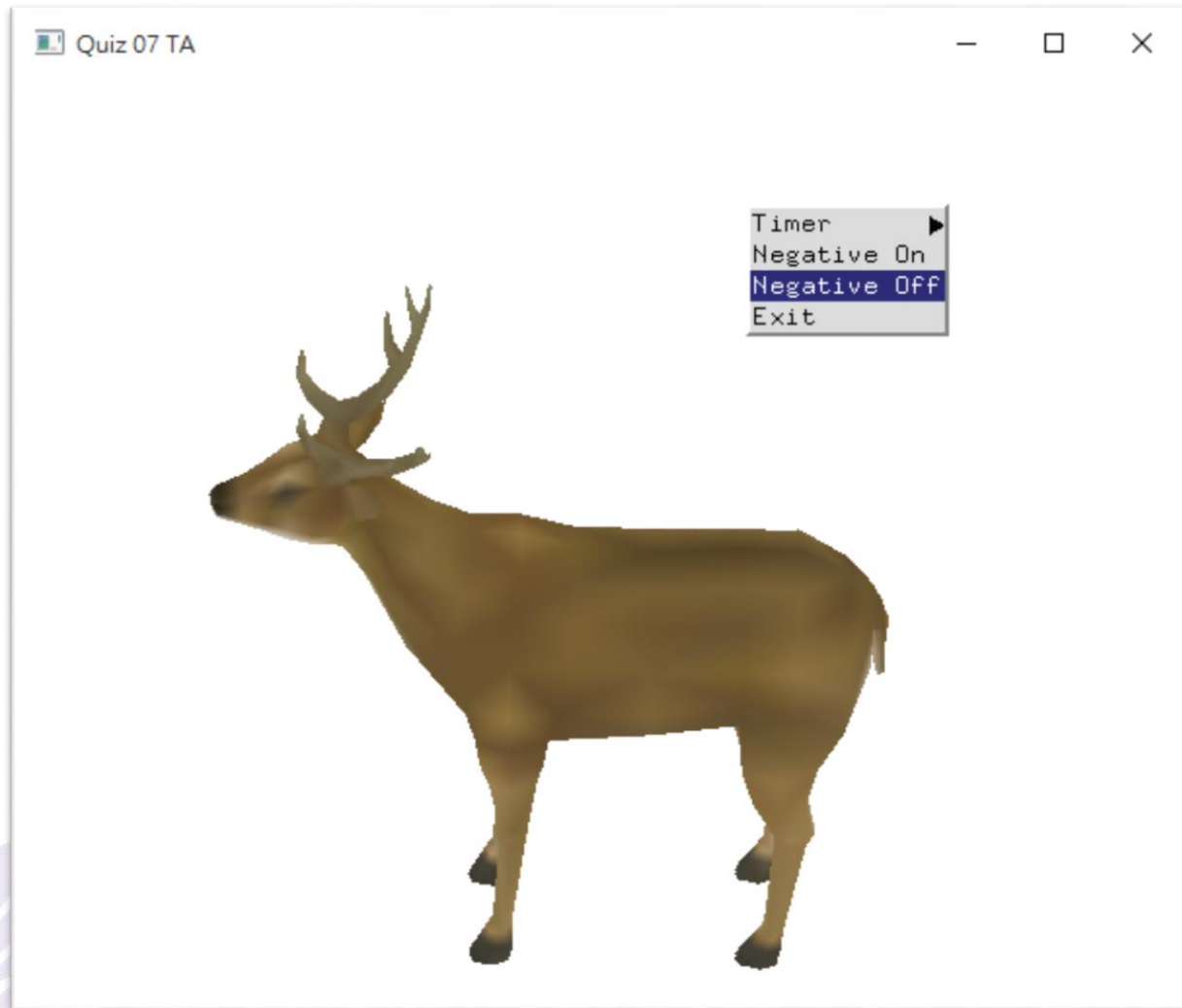


Objective

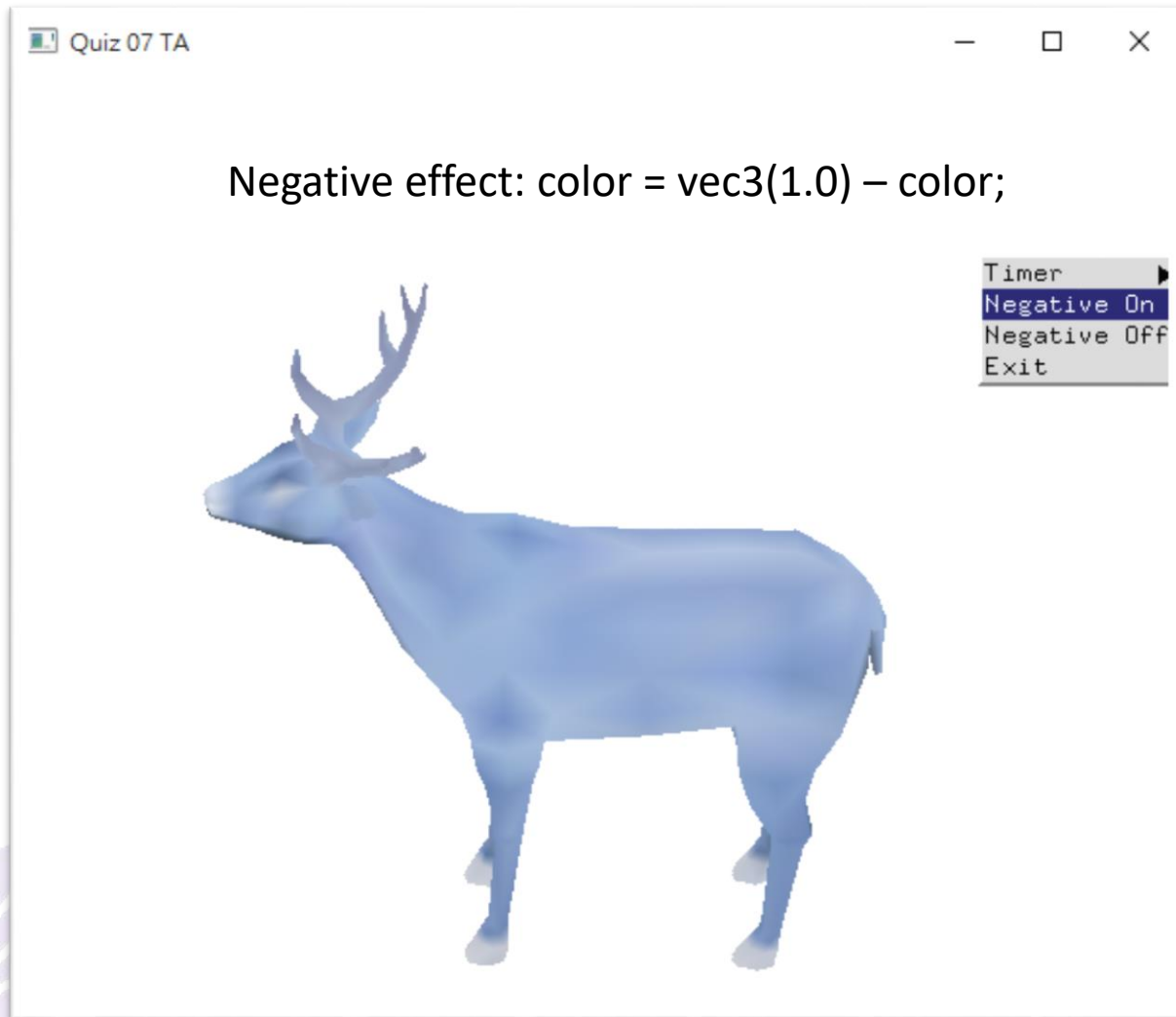
- Transfer data to GPU and draw a ***colored model***
- Your output must be ***100% identical*** to TA's
- Use **menu event** to ***toggle negative effect with an uniform int flag*** in fragment shader
- The model is already included in the form of **modelData.h**



Objective



Objective



Hint

- You only need to modify **main.cpp** and **fragment.fs.glsl** (fragment shader)
- In main.cpp, use “Ctrl + F” to search with keyword “**TODO**” and find the code section.
- In fragment shader, remember to use **uniform int** flag with **if-else** statement to toggle negative effect



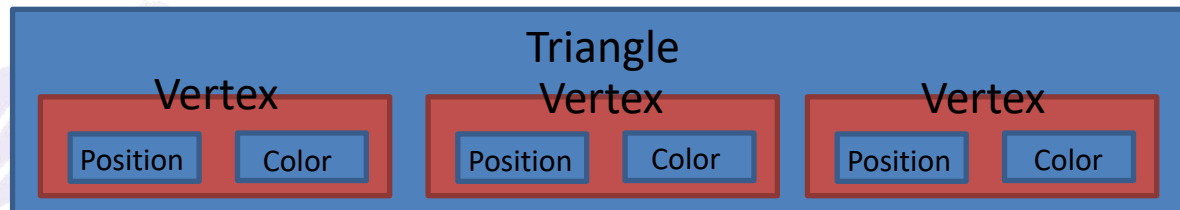
Hint

- Step by step:
 1. Generate (**glGenBuffers**), bind (**glBindBuffer**) and fill the buffer with data (**glBufferData**)
 2. Assign buffer to vertex attribute (**glVertexAttribPointer**)
 3. Enable vertex attribute array (**glEnableVertexAttribArray**)
 4. Pass the.mvp matrix/negative flag (**glGetUniformLocation, glUniform***)
 5. Issue draw call (**glDrawArrays**)



Hint

- *modeldata.h* format:
- **24,876** floating point numbers, representing **1,382** triangles
- Vertex positions(vec3) and color values(vec3) are *interleaved*
- *Open the file and see for yourself!*



Rules

- You **cannot**:
 - Copy & paste others' code
 - Ask others to code for you
 - Use internet, Google, StackOverflow, etc.
 - Discuss with your classmates nor TAs
 - Check previous practice or quiz framework
- You **can**:
 - Check any hangouts of this course
- Demo your program window to TAs before you leave the PC room

