

CS380

Programming Assignment #2

Due: Apr.-1 (Mon.) (before 11:59pm)

Rep. TA: Jaeyoon Kim

Objective: Understand how to perform transformations to the model, idle-based animations, and simple interaction methods.

Developing environment: TA will test your code in **Visual Studio 2022** in Microsoft **Windows**.

Provided materials: Two header files(.h), two source files(.cpp), two modeling files(.obj), one sample binary(.exe)

Procedure:

- 1) Make project for PA2. Adding all *.h and *.cpp files into your project.
- 2) Compile and run the skeleton codes of PA2 for testing.
 - a) The code requires reading a file of "cow.obj" and "camera.obj".
 - b) This file should be in the working directory. (where *.vcxproj is located)
- 3) Understand the basic structure of the skeleton code (SimpleScene.cpp).
- 4) Implement the **cow spinning** around an **arbitrary line**. Choose the line randomly. Rotation is done in the **modeling space**.
 - a) Toggle the animation by typing "r"
 - b) You can use the **idle-based animation method**
- 5) Provide **translation function** along **x, y, z directions** in the **modeling space**.
 - a) The amount of translations is determined by the **mouse movement**.
 - b) If you type "x", "y", or "z", then, the **cow model translates** along a direction corresponding the key map. In order words, if you type "x", then, the cow translates along x-direction in the modeling space.

Deliveries:

- 1) Binary (*.exe) and source codes (SimpleScene.cpp) of your solutions.
- 2) A report (*.pdf) that specifies the files you made/changed.

The report should contain the following 6 images:

 - a) Attach three images of spinning cow that has three arbitrary line, respectively. (3 images)
 - b) Attach three images of cow that translated with respect to x, y, z axis, respectively. (3 images)
- 3) Submit your work in KLMS. You should submit *.zip file that contains your binary (*.exe), source codes (SimpleScene.cpp), and your report (*.pdf).

Scoring criteria (30 pts):

- 1) Rotation
 - a) cow spinning (5 pts)
 - b) arbitrary line (5 pts)
 - c) toggle key "r" (5 pts)
- 2) Translation
 - a) cow translation according to x, y, z direction in modeling space (10 pts)
 - b) toggle "x", "y", or "z" (5 pts)

❖ Compile error will get 0 point.

❖ Implementation outside of implementing area is not allowed.

❖ Use variables presented in "(Project 2) Variables".

❖ There are two areas for implementation. Please search "(Project 2)".

❖ **Name the zip file to studentID_PA2.zip (e.g., 20241234_PA2.zip).**

Policies:

1. Everyone must turn in their own assignment. You can collaborate with others, but any work that you turn in should be your own.
2. **If your zip file name does not match the format (i.e., studentID_PA2.zip), we will deduct your score by 2 points.**