

# CS 380

## Introduction to Computer Graphics

### Programming Assignment #3

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# Objective

- Understand how to perform transformations in “viewing space” (= camera, eye)
- Understand distinction between “modeling space” and “viewing space”.

# Basic Knowledge

- In Graphics, we have 3 different spaces
    1. World Space
    2. Object Space (= Modeling Space)
    3. Camera Space (= Viewing Space, Eye Space)
- ⇒ They have different basis (frames)
- ⇒ How to convert from certain space to the other space (frames)?

# Requirements

0. PA #3 will start from the result of PA #2
1. Provide two key maps 'm' and 'v'
  - If you type 'v', all transformations are performed in the “viewing space”
  - If you type 'm', all transformations are performed in the “modeling space”

# Requirements

2. Provide translation along x, y, z directions in the “viewing space”

- a) If you type ‘x’ or ‘y’, the cow should be translated **in the viewing x-y space**
- b) If you type ‘z’, the cow should be translated **along the z-direction in the viewing space**

3. If you type ‘r’, the cow should be rotated **around the x-axis in the viewing space**

# Submission

- Due : April-25 (Fri.) (before 11:59pm)
- File Format
  - : StudentNumber\_PA3.zip (ex. 20149999\_PA3.zip)
    - zip file = modified/added codes and “README.txt”
    - “README.txt” = brief comments about your codes
- Send e-mail to TA, [cs380ta@gmail.com](mailto:cs380ta@gmail.com)
- I will not accept any late submissions