

# Daily Assignment 19

- This is how ZXZ Euler angles works
  - 1. Rotate along Z-axis by  $\alpha$
  - 2. Rotate along X-axis of the new frame by  $\beta$
  - 3. Rotate along Z-axis of the new frame by  $\gamma$
- Start from today's practice code, implement ZXZ Euler angles and add code to change  $\alpha$ ,  $\beta$ ,  $\gamma$  values in the following way:
- If you **press or repeat** a key, the value of  $\alpha$ ,  $\beta$ ,  $\gamma$  should be changed as shown in the table:
  - Hint: You do not need to store a composed rotation matrix as a global variable. You can just store  $\alpha$ ,  $\beta$ ,  $\gamma$  as global variables

Key	Transformation
A	Increase $\alpha$ by $10^\circ$
Z	Decrease $\alpha$ by $10^\circ$
S	Increase $\beta$ by $10^\circ$
X	Decrease $\beta$ by $10^\circ$
D	Increase $\gamma$ by $10^\circ$
C	Decrease $\gamma$ by $10^\circ$
V	Initialize orientation

# How to Submit

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- What you have to submit:
  - Only **one** .py file: *main.py*
- Write down all your code to *main.py*
- `> py -3 main.py` or `$ python3 main.py` should show your glfw window.

# How to Submit

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- Submit your assignment **only through the Assignment (과제) menu of the lecture home** at [portal.hanyang.ac.kr](http://portal.hanyang.ac.kr).
- **Recommended due date: Today's lecture end time**
- (Hard due date: 23:59 Today)