Daily Assignment 5

- Write down a Python program to..
- Draw a triangle using render() function in the next slide (DO NOT modify it!)

- If you press (not release or repeat) a key, the triangle should be transformed as shown in Table:

- Transformations should be **accumulated** (composed with previous one) unless you press '1'.
  - Use: gComposedM = newM @ gComposedM
  - You'll need to make 'gComposedM' as a global variable

- **Set the window title to your student number.**
- Set the window size to (480,480).

Key	Transformation
W	Scale by 0.9 times in x direction
E	Scale by 1.1 times in x direction
S	Rotate by 10 degrees counterclockwise
D	Rotate by 10 degrees clockwise
X	Shear by a factor of -0.1 in x direction
C	Shear by a factor of 0.1 in x direction
R	Reflection across x axis
1	Reset the triangle with identity matrix

Daily Assignment 5

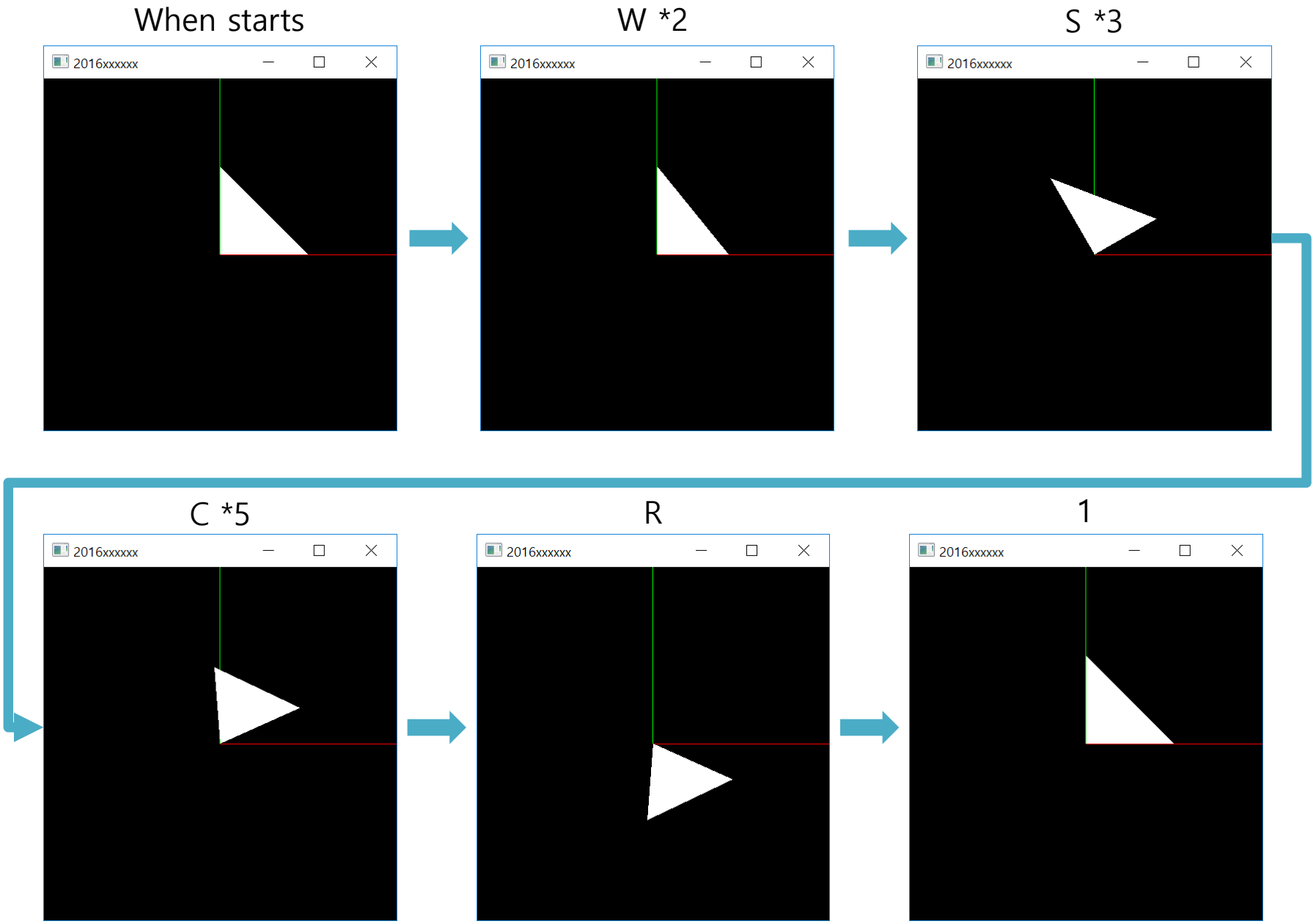
- render()

```
def render(T):
    glClear(GL_COLOR_BUFFER_BIT)
    glLoadIdentity()

    # draw cooridnate
    glBegin(GL_LINES)
    glColor3ub(255, 0, 0)
    glVertex2fv(np.array([0.,0.]))
    glVertex2fv(np.array([1.,0.]))
    glColor3ub(0, 255, 0)
    glVertex2fv(np.array([0.,0.]))
    glVertex2fv(np.array([0.,1.]))
    glEnd()

    # draw triangle
    glBegin(GL_TRIANGLES)
    glColor3ub(255, 255, 255)
    glVertex2fv(T @ np.array([0.0,0.5]))
    glVertex2fv(T @ np.array([0.0,0.0]))
    glVertex2fv(T @ np.array([0.5,0.0]))
    glEnd()
```

An example sequence of continuous transformation



How to Submit

- 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

- Submit your assignment **only through the Assignment (과제) menu of the lecture home** at portal.hanyang.ac.kr.

- **Recommended due date: Today's lecture end time**

- (Hard due date: 23:59 Today)