

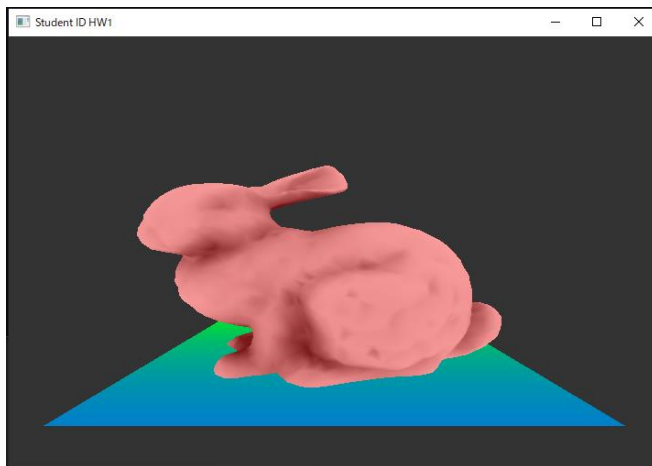
# Assignment1 – Transformation

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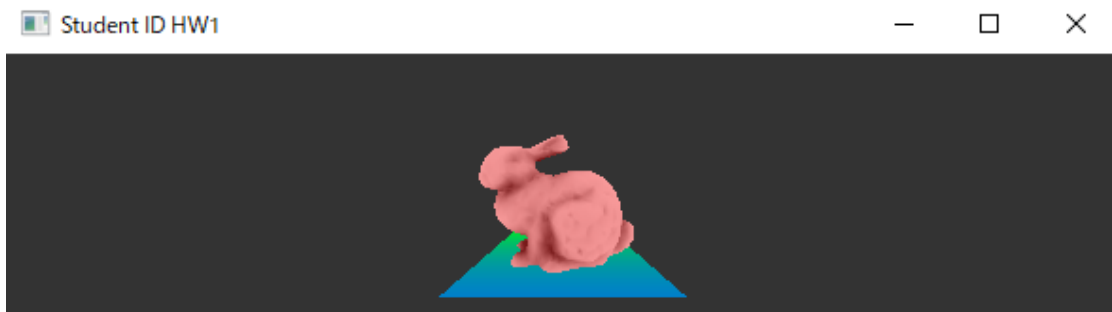
## 1. Some Screenshots:

### I. Aspect Ratio:

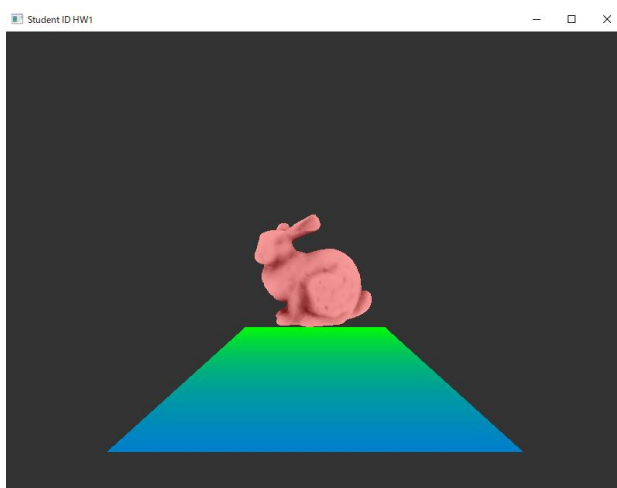
調整前:



調整 aspect ratio 後，再按下 P 設定 Perspective:



### II. Translate Mode Demo (Scroll Back)



## Information of Matrices (按下 i):

```
C:\Users\mike\Downloads\HW1_VS2017_Framework\HW1_VS2017_Frameworkor
Load Models Success ! Shapes size 1 Material size 0
Load Models Success ! Shapes size 1 Material size 0
Load Models Success ! Shapes size 1 Material size 0
Load Models Success ! Shapes size 1 Material size 0
Translation Matrix :
(1, 0, 0, 0)
(0, 1, 0, 0)
(0, 0, 1, -1.9)
(0, 0, 0, 1)
Rotation Matrix :
(1, 0, 0, 0)
(0, 1, 0, 0)
(0, 0, 1, 0)
(0, 0, 0, 1)
Scaling Matrix :
(1, 0, 0, 0)
(0, 1, 0, 0)
(0, 0, 1, 0)
(0, 0, 0, 1)
Viewing Matrix :
(1, 0, 0, 0)
(0, 1, 0, 0)
(0, 0, 1, -2)
(0, 0, 0, 1)
Projection Matrix :
(0.671312, 0, 0, 0)
(0, 0.895083, 0, 0)
(0, 0, -1.00002, -0.00200002)
(0, 0, -1, 0)
```

## 2. Description of my program control instructions:

Load 進 5 個 model 後，主要就跟要求的 key mapping 一樣：

**Z/X:** switch model

**O:** Orthogonal projection

**P:** NDC Perspective projection

**T:** translation mode

**S:** scale mode

**R:** rotation mode

**Esc:** exit program

**E:** eye position mode

**C:** viewing center position mode

**U:** camera up vector position mode

**I:** print information

這三個功能在使用時會印出相關數值，

**Ex:** 使用 eye position 時會印出 camera position