

## COSC 4370 HomeWork 2

Name: **Hoang Tran**

February 28 2023

### 1. Problem

We will be using your newfound OpenGL skills from class, as well as our artistic creativity, to create several 3D scenes with OpenGL. The first part of the assignment is to reproduce each of the three images and to use a scene of our own imagination to create the fourth image.

### 2. Method

We create the image using only `glutSolidTeapot`, `glutSolidCube`, and OpenGL's transformation mechanisms like `glPushMatrix`, `glPopMatrix`, `glTranslatef`, etc.

### 3. Explain the Problem

For the problem 1, it is the round circle of teapots. we just find the angle to rotate the teapot around the z-axis with the radius of 1 and then fill all position with the teapots.

For the problem 2, it is just like ladder, we do a nested loop to create the step by step and each step is higher than the next step 0.25 and the fill all positions with `glutSolidCube()`

For the problem 3, it is a triangle of teapots we do a nested loop to create the triangle with 6 rows and 6 columns and we set the distance between the teapots by 1 and then fill all positions with `glutSolidteapot()`.

For the problem 4, it is a plus sign. to make a plus sign, we just need to rotate the plus sign to our desired location. For each segment, we use cube and position it horizontally and vertically.

### 4. Result

My reproductions do not need to match exactly. However, it matches the examples as closely as possible I can do.

Please, fix the number of the problem (`curProblem` in `main.cpp`) to see the each problem.



