In this exercise you will create two structures using sphere and cube models.

Create a new TL-Engine project and name it Lab1\_Giant\_Project

Add a FPS camera to your project and locate it at (0,0,-50)

Load the cube mesh, “Cube.x”.

You are to use models created using the cube mesh to create the structure shown in the image below;

You need 16 cube models to create the structure, therefore declare 16 IModel variables, name tghem appropriately, creta ea model model for each using the cube mesh.

If you load the a cube model and a grid model, you will notice that the cube has a length of 10, therefore each cube takes up 10 unites along the x,y, and z axis.

Since the is standing, all thecubes that will be used to build it will have the same z position. Use 0 as the z position for all the cubes you will position.

However each cube will have a different x and y cordiniate, and the image below shows the image of a giant in a 2d grid.

By looking at the image above, you can easily identuy fthe x and y coordinated for each block by drawing a line form the center of each cube to the x and y axis. For example the bottom left block is positioned at x = -10 and y = 5, therefore it should be created using CreateModel(-10,5,0); and the bottom right block is positioned at x = 10 and y =5, therefore is should be created using CreateModel(10,5,0);

Looking at this image, create and position all 16 models to create the giant.

Create a new TL-Engine project and name it Lab1\_Pyramid\_Project

Add a FPS camera to your project and locate it at (0,0,-50)

Load the cube mesh (“Cube.x”) and Sphere mesh (“Spehere.x”).

The pyramid you will be creating has three layers, and sphere at the top of the last layer.

This means the cube(s) in each layer have a different y coridnate, you will have to workout the cordinate for each layer.

The bottom layer is made uo if 8 cubes shown in the 2d grid below (showing x and z axes).

The middle layer is made uo if 4 cubes shown in the 2d grid below (showing x and z axes).

The the top layer has a single cube shown in the 2d grid below (showing x and z axes).

Finally the sphere shown in the 2d grid below (showing x and z axes) should be placed above the cube on the top layer and it

pyramid with three layers using cube models.

Create a new TL-Engine named “Lab1\_Pyramid\_Project”

Create a camera and position it at (0,0,-50)

Load the cube mesh.

You are going to need 14 cube models for building your pyramid, therefore you will need to create these models using your loaded mesh.

You may want to use a grid model to figure out the size of the sides of the cube, this will help you in calculating the coordinates of each cube of the pyramid.

The bottom layer of the pyramid is made up of 9 cubes arranged as shown below (viewed from the top). Position the middle cube at (0, 0, 0), then position the other cubes around it.

The middle layer of the pyramid is made up of 4 cubes and should be centered on top of the bottom layer as shown below (viewed from the top). *Hint: the z-coordinate of the cubes in this layer is 10.*

Finally, the top layer is made up of only one cube and should be placed on the middle layer as shown below in (viewed from the top). *Hint: the z-coordinate of the cubes in this layer is 20.*