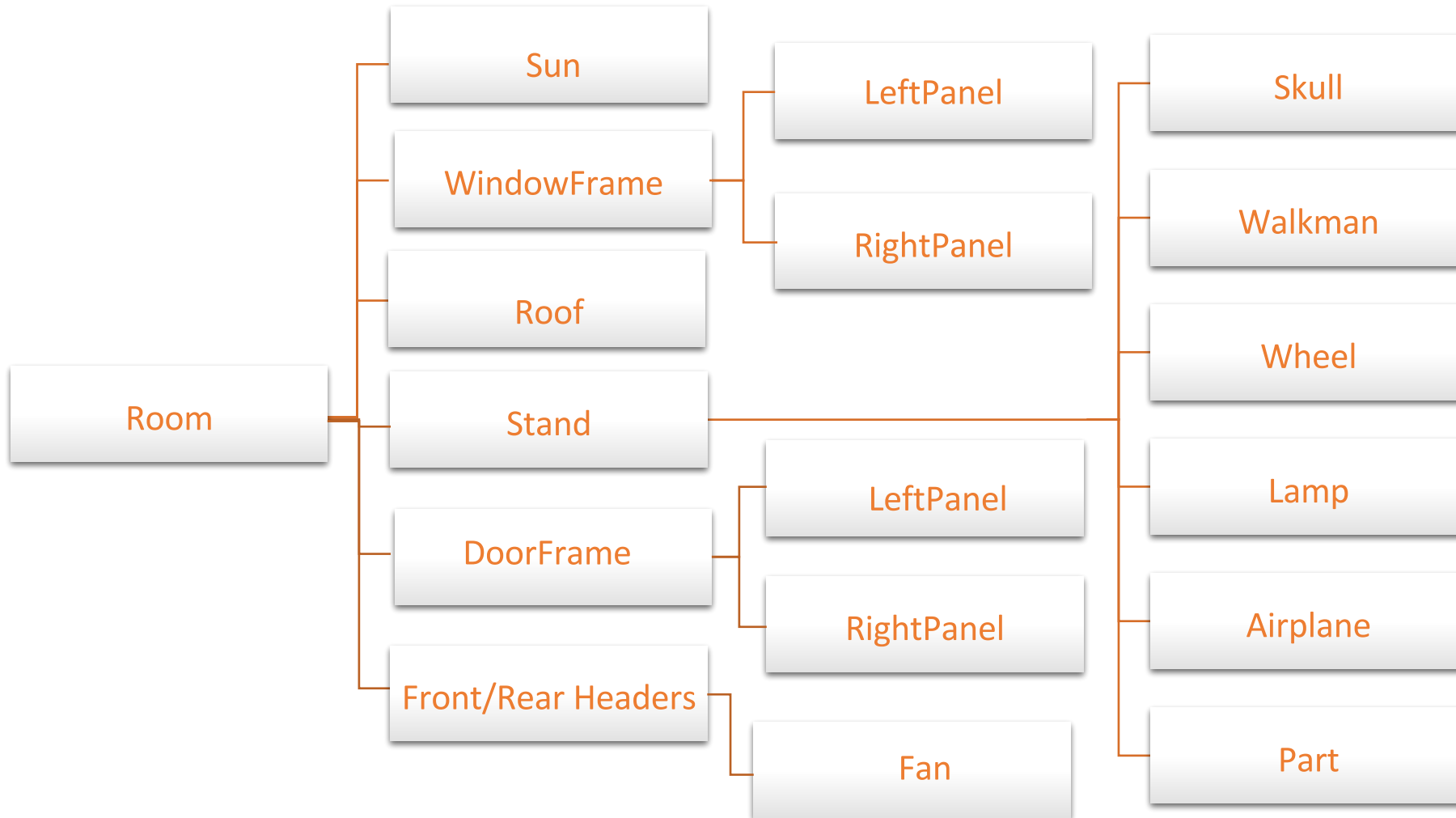# PH7: Virtual Museum

By

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As a partial fulfillment of

Comp510

Program Structure

Main parts of the museum

1. The building

2. The Antiquities

Implementation of Tree structure

Object. h

Queues are used to implement the tree sructure.

Generic methods like display, initialization, reshape and reset are implemented in the root class(Museum) and propagated to childs in object.h

Drawing Museum Objects

.ply files:

   PLY is a computer file format known as the **Polygon File Format** used to store 3 Dimensional data from 3D scanners.

   Museum objects like skull, airoplane, lamp etc.. Are drawn using their ply objects.

ply parser:

   ply library has methods to read the data in it.

Overview of Drawing .ply objects

Read file information(e.g # of vertices, faces, color) → Read vertices, color and faces → Transform the geomatry → Render the object

User Interface

Function	Keys		Function	Keys
Get help	h or H		Automatic Rotation on/off	a or A
Pick an object	mouse-click		Rotate Left	Left arrow key
Reset All	i or I		Rotate Right	Right arrow key
Zoom In	Z		Rotate Up	Up Arrow Key
Zoom out	z		Rotate Down	Down arrow key
Move Forward	f		Pick one object to rotate	left Mouse key
Move Backward	F		Open The door	click on door
Change Shading	s or S		Blending Windows	click on the window
Change Reflection	r or R		Quit/ close	q or Q
Change Projection	p or P			

Theoritical concepts implemented

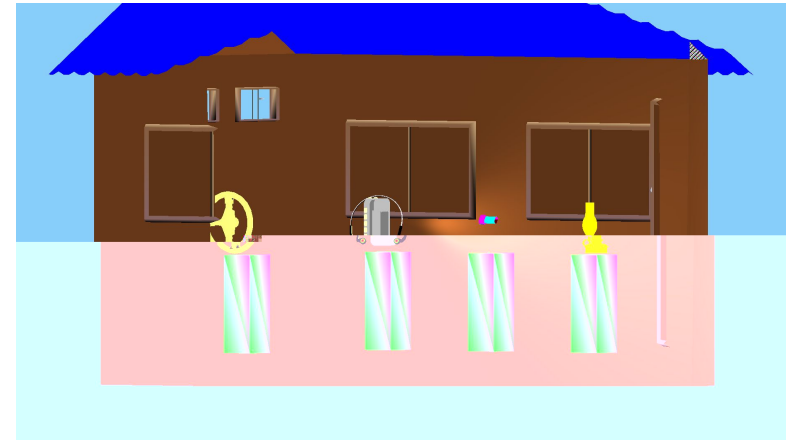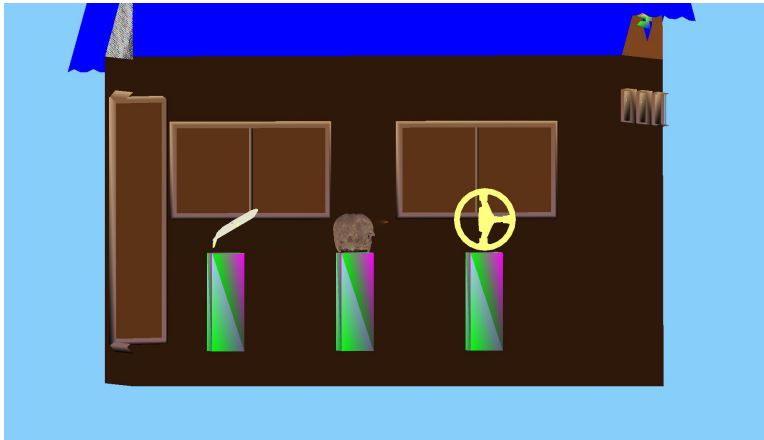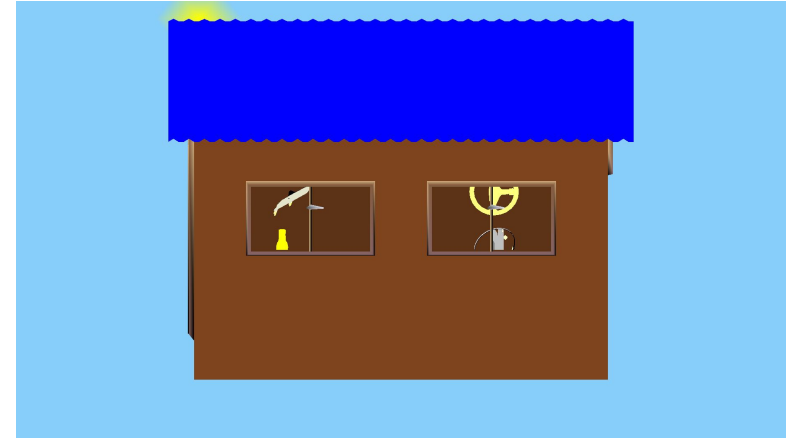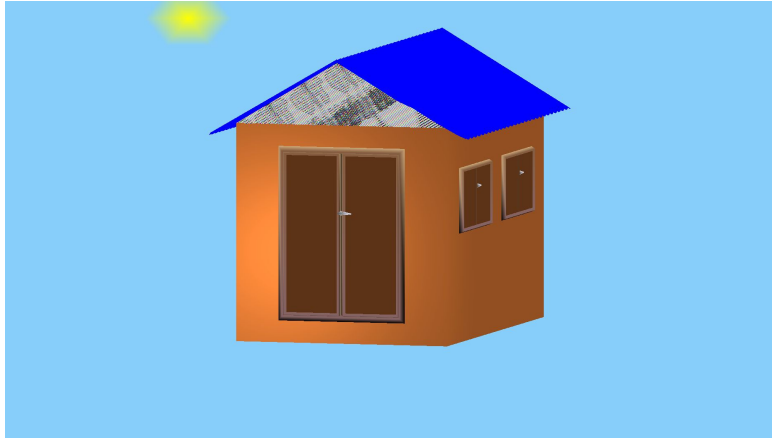Designing and rendering objects

Transformation

Shading

Picking

Texture Maping

Projection (Orthographic/ Perspective)

Blending

Hierarchical Modeling

Some glimpes of virtual Museum

References

- Ply objects: http://people.sc.fsu.edu/~jburkardt/data/ply/
- BMP file reading: http://www.opengl-tutorial.org/beginners-tutorials/tutorial-5-a-textured-cube/

Let's Run it now….