

CE318: Games Console Programming

Lab 4: Matrix transformations

4th November 2011

1 Creating a model (0.5 hours)

- Create a simple model in Google Sketchup.
 - Open **Google Sketchup**, selecting *Simple Template - Meters* as a template.
 - You will see now an empty world model, with a human model in its center. This person is used in **Google Sketchup** as a reference for dimensions of objects. Remember to select it and delete it when you're finish with your models.
 - Using the tools in the toolbar, create a simple model. The model will consist of a rectangular base with a cylinder on top of it. You also have to add a texture to the model. Figure 1 shows some of the most used tools.

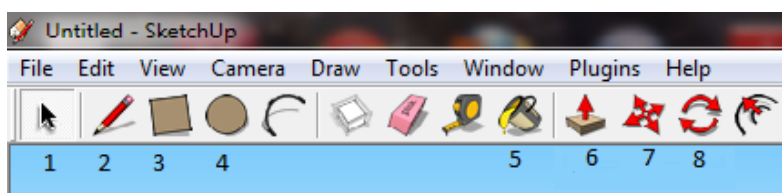


Figure 1: Toolbar icons. 1: Select tool; 2: Line drawer; 3: Square drawer; 4: Cylinder drawer; 5: Texture tool; 6: Volume tool (click and drag on the shape); 7: Move tool; 8: Rotation tool.

- Export the model to a format (.x) that XNA understands: In **Google Sketchup**, go to *Plugins* → *DirectX* → *ExportModel...* and choose a destination and a name for the model.

2 Primitives and model in the world (1.5 hours)

- Download from the web page the `Basic3DWorld` file and open the solution.
- This solution comes with a free camera. If you execute, you can move the camera using the *WASD* keys and rotate (yaw) it by moving the mouse in the horizontal axis.
- Place some primitives in the world (as stated in the last part of last week's exercise, adding rotations and translations). Import also the .x model you created in **Google Sketchup**, and draw it in several places of the world. The class `BasicModel` (in *BasicModel.cs*) is given so you can use it as a skeleton to write the functionality of the models and primitives (writing the contents of the methods `Update()` and `Draw()`).