Lab 4: Introduction to Tinkercad
CSE 2100-001

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1   Objective

Create a Tinkercad account and design a 3D model of a typical car or truck. At a minimum, your car should have 4 wheels and a body with a roof. The size of your model should fit within a 3x6x3 (width x length x height) inch volume. Additionally, the rear and front wheel pairs should be aligned along the same axis. You are encouraged to add additional detail, such as body contours, embossed text, colors, hood ornaments, etc. The best design in each section will be 3D printed and returned to the designer at a later date.

Show your design to the lab GTA when you are done, and submit a copy of your .STL file along with your weekly lab report. If you are working with a partner, you only need to design a single 3D model (but you must both submit the .STL file on your BlackBoard account).

1.1   Definitions

CAD : Computer Aided Design(CAD) involves the use of software or services to help in creating and modifying 2-D or 3-D designs.It is often used bt architects, engineers and drafters to create precise drawings and illustrations of designs.

Solidworks : A commercial computer-aided design software that provides rs powerful design functionality for a 3-D design process.

AutoCAD : A commercial computer-aided design software for drafting and editing 2-D and 3-D models of solids and surfaces such as blueprints for buildings, bridges,etc.

.STL : a universal file format common to many 3-D printing systems created through a CAD service

.OBJ : an open file format that that describes the geometry of a design for use in 3-D graphics applications

2 Question 1

What action must be done to combine several primitive geometric shapes into a single complex part?

First, the geometric shapes need to be selected (CTRL + A), and grouped(CTRL + G).

3 Question 2

What steps would you take to create a hollow 5 inch cube with 0.5 inch thick walls?

i) Create a 5 in x 5 in x 5 in hollow cube.
ii)Create another 4.5in x 4.5 in x 4.5 in cube.
iii)Put the latter cub at the first cube.