

# Lab 4: Introduction to Tinkercad

## CSE 2100-001

John Jones  
Thomas Vu

February 27, 2020

Date Performed: February 20, 2020  
Partners: Thomas Vu  
John Jones

## 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 software is used to assist a user to create engineering, architectural, and scientific designs.

**Solidworks** 3D CAD software commonly used in the industry by mechanical and manufacturing engineers.

**AutoCAD** Popular but expensive software used for 2D and 3D CAD.

**.STL** Extension that is supported by most 3D printing platforms.

**.OBJ** Format used by tinkercad that also stores textures for 3D surfaces that can be imported or exported.

## 2 Question 1

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

The objects must be grouped together.

## 3 Question 2

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

Draw a solid box that is 5x5x5 inches. Draw another box that is 4x4x4 inches and set the offset. Place this in the middle of the larger box 1/2 an inch on all sides. Set the object to hollow. Merge the two objects.