SuperD Quick Start Users Guide:

What is SuperD?

SuperD is a conceptual modeler. Its aim is to facilitate creative, organic design. Moreover, it is developed so that will run efficiently on mobile devices.

SuperD employs the highly popular recursive subdivision (SubD) interface for design, although the surfaces are smoother and faster than SubD. If you are not familiar with SubD modeling there are some excellent online tutorials.

https://www.youtube.com/watch?v=ckOTl2GcS-E
and https://www.youtube.com/watch?v=k_S1INdEmdI

Otherwise, this guide assumes a rough familiarity with SubD style modeling.

Getting Started

Open your SuperD App. The first screen you see is the *library*. It will look something like Figure 1.

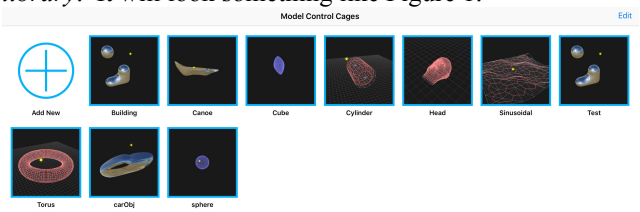


Figure 1. Opening screen of SuperD – the *Library*.

You see the icons representing all models currently associated to your App. You also see a ⊕ sign, which allows you to download new models from the cloud or by copying and pasting from another source like the Verto Studio™ modeler. (See appendix).

Open the sphere model by tapping the icon. The initial SuperD™ screen should look like (Figure 2).

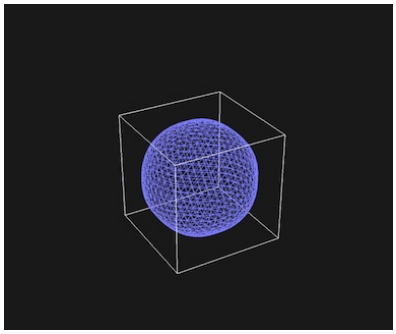


Figure 2. Initial screen with sphere.

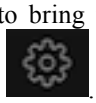
The *View/Edit* toggle button  is in the upper left corner of the screen. It controls the two primary modes. Your model starts in *View* mode, so let's talk about that first.

View mode

Viewing actions. In view mode the standard touchscreen gestures are used. These are:

(1) Rotate view -- Move one finger on screen.
(2) Pan -- Move two fingers together on screen
(3) Scale -- Pinch thumb and finger together or spread apart.

Try these out.

Settings. Tap the screen once to bring up menus. In the upper right you see the gear icon  . Tap it. It will be explained in full later. For now make it look like Figure 3 below:

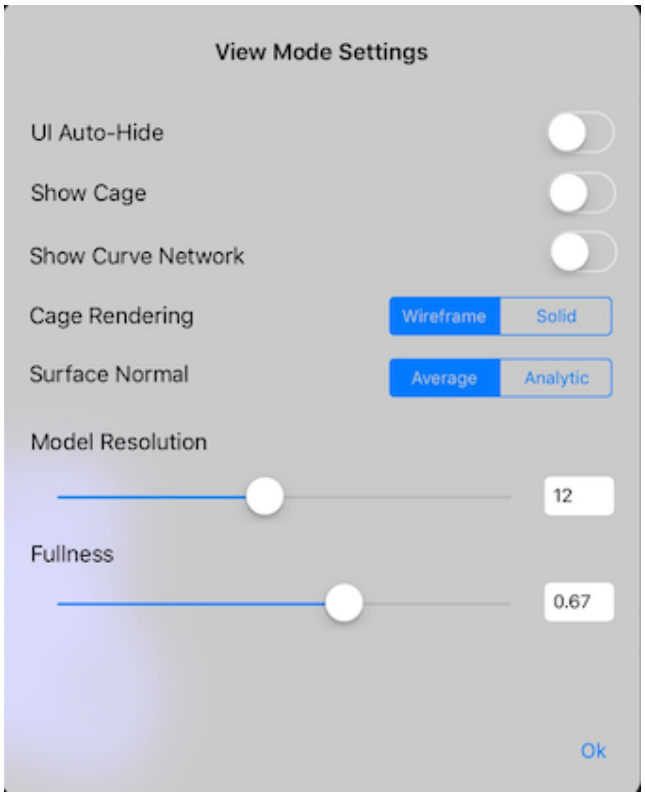


Figure 3. Settings menu.

Tap "OK" at the bottom to close the menu.

Display. Tap the screen once to bring up menus again. In the lower left you see a menu that looks like:

These set how the model is rendered as follows (try each one out):

(1) Wireframe triangulates the surface. The number of triangles depends on the "resolution" slider fixed in the gear settings. The triangle are the ones used for display.
(2) Solid Wire mixes wireframe and Phong (below), but the solid part hides the back parts of the wireframe, making it easier to see the forward parts.
(3) Phong renders the display polygons as solid facets using the well-known *Phong* shading model. You may want to roll it around.
(4) Analysis renders the surface using known mathematical techniques to assess surface quality such as contouring for smoothness. It is for advanced users, but looks pretty anyway.
(5) Reflection Mapping renders the object as if it were shiny. It reflects an external environment

Note that modes (3) – (5) bring up a submenu that further defines the mode; thus Phong brings up a color wheel that allows a color choice. These sub-modes are self-revealing. Experiment!

Now tap the screen once to get up menus, and then tap on the "model" icon in the upper right. (You may be asked whether you want to keep, or discard the current model, if you have changed anything. Discard it and you will not change the original model.) You are back in the library. Choose other models to load and examine.

A couple more top menu items briefly. The title of your object appears in the center. The "Center View" button will center the object on the screen in case you get lost, e.g. a sneeze while moving. The others on the top are self-explanatory.

That's it for viewing right now.

Edit mode

Edit mode is where you design the or modify your design.

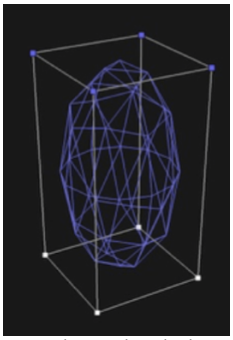
Load the sphere model again, then tap the screen, and tap on the view/edit button (upper left). You will enter edit mode. Your model will show the white lines of the "control cage." Its vertices appear as square dots. The model itself appears as a blue wireframe.

The control cage is a block-like approximation of your design object. Since the blocks are easy to construct and modify, it is the key to the simple user interface. The smooth, designed object is a rounded off version of the blocky one, much like taking sand paper to its edges and corners. The control cage for the sphere, for example, is just a cube.

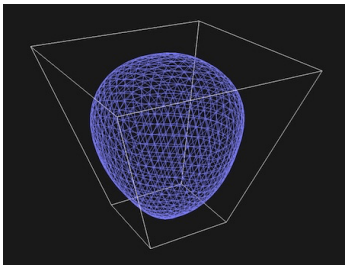
Edit commands. See the left side that looks like:

The functions available are:
Camera. All your gestures (rotate …) work the same as in view mode.
Select. A single finger drag creates a select box. Any control points caught in this box will change color, and be ready for manipulation as in the following:
Move, rotate and scale. Unlike camera view, these options affect only the highlighted points, For example, select the top side of the control cage as in the figure above. Four points will highlight. Then choose "move". A menu on the right appears

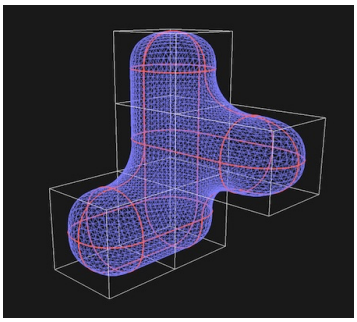
that indicates possible directions to move in. The axis in the lower right of the screen will help in selecting the direction. You may also move in the face "normal", or "freely" in the viewing plane. Try various combinations. The blue wireframe automatically updates the design object.



Click the view/edit button to go back and see the object in the view mode. Go back to edit and manipulate more. The following screen shows the move function applied to the top screen.



Rotate and scale behave similarly. Try them (Make sure you have selected some points.) Lrft shows the top face scaled out:



Pull. The points you select have to form a face or faces to work. The object to the right was made by "pulling" faces of the previous sphere (cube control cage). They were pulled in the face normal directions. Try to mimic this.
Tap the select button again. You will see in the upper left, next to the view/edit

button another menu as seen in the next screen (wrench and screwdriver). These functions are described below.

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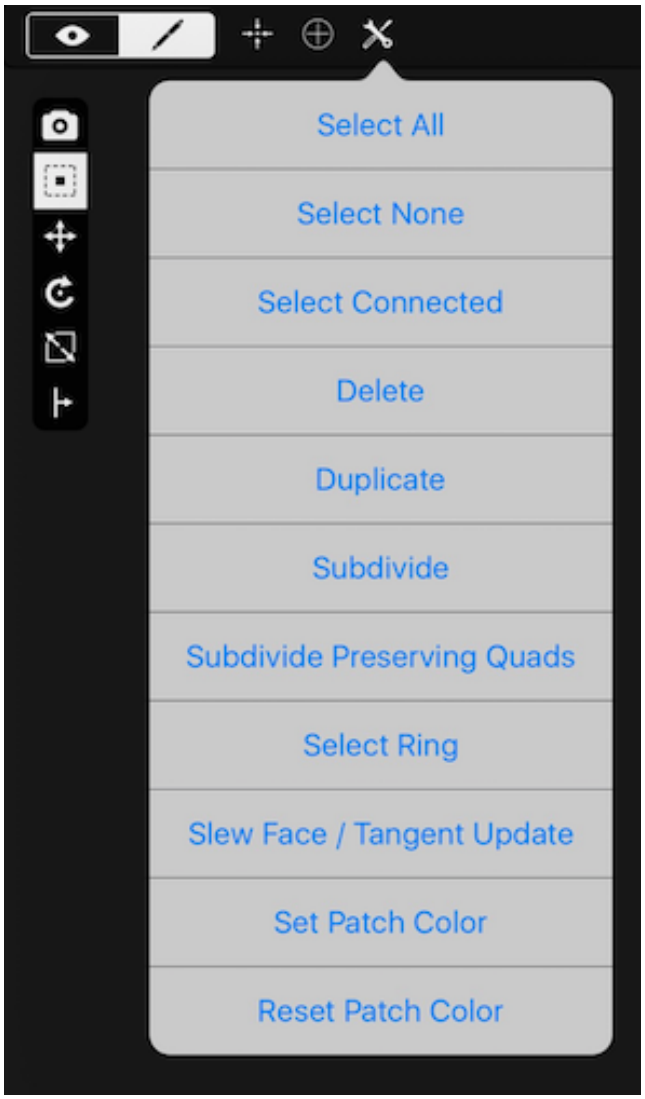

Select All and Select None are two convenient, self-explanatory commands. Select Connected grabs the entire cage connected to whatever you seect. Useful when you have more that one object.

Delete does what you expect, but only on complete faces, i.e. the control points selected must comprise all those in the face. When a face is deleted, it generates an open model with a boundary of Bezier curves.

Duplicate. Also self-explanatory, it will make copies of any control points selected. It is a good way to duplicate objects. Make sure you follow up with a move of the copy, or you won't see the duplicates.

Subdivide allows local refinement of the model. There are several ways to subdivide. Most require selecting two adjacent points that determine the direction to subdivide. More later, but you are welcome to play with this.

Select ring is another advance feature. A ring is a chain of edges that loop around the model. It is surprising how powerful they are in modeling. As in subdivide it requires choosing two adjacent points for direction.

The other choices are explained in advanced features.

Practice and learn! As with any design technology, there is much to be said for the craft of modeling itself. SubD modelers will already have much experience that can be applied because of the similarity of interface. As said, this is intentional. The more one practices, the more powerful SuperD will become. We will add many features yet, that enhance the modeling facilities.

Caveat. It's a beta version. There are lots of functions we want to put in, and welcome suggestions. We even know some bugs, but nothing that will kill the program, so far. Save often! Click *discard*, if you don't want to save it