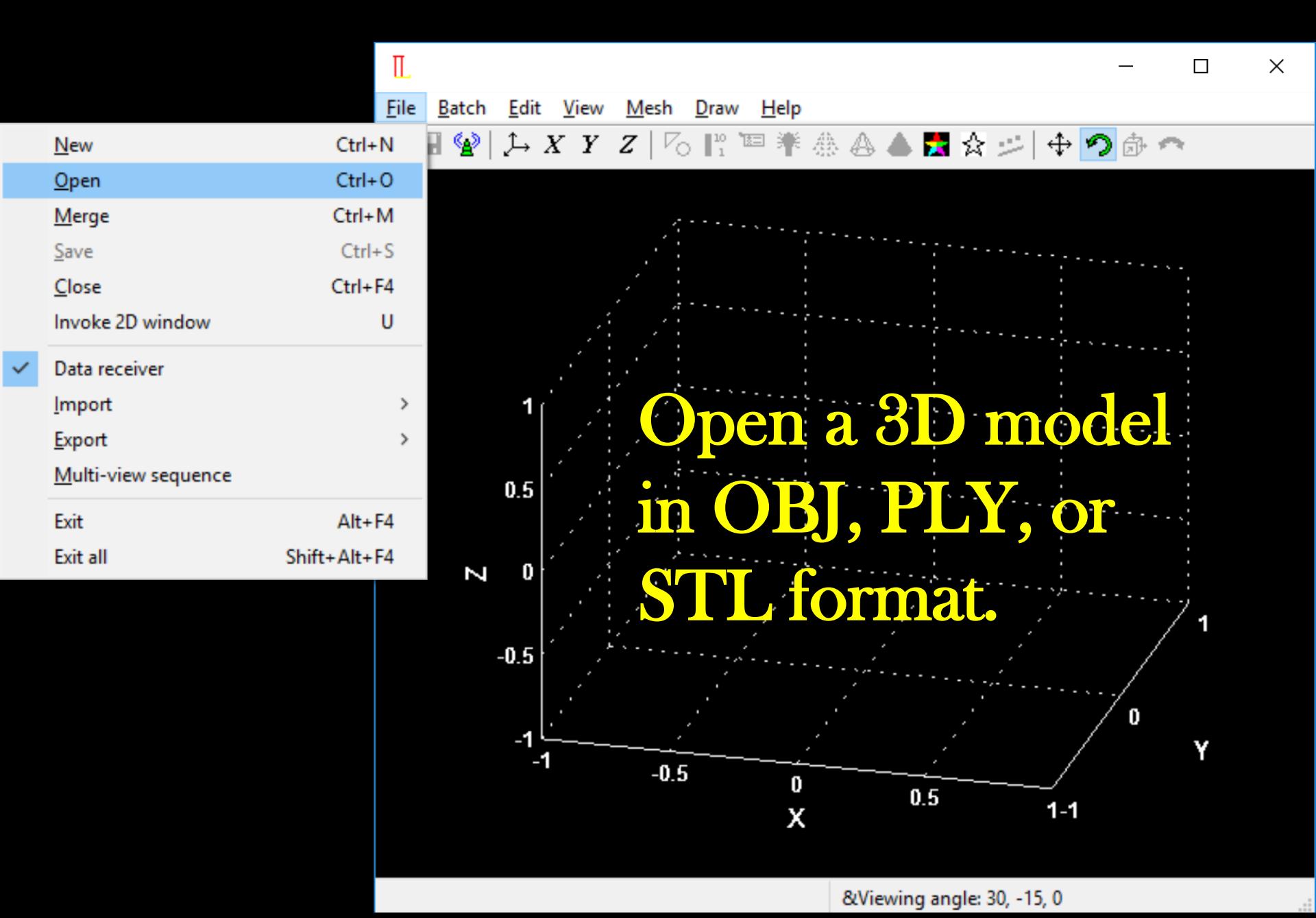


LuBan

Get started



File Batch Edit View Mesh Draw Help

Lu Ban

Nesting

Inflate/Deflate

Repair

Reverse

Simplify

Separate

Split

Statistics

Rescale

Rotate X

Rotate Y

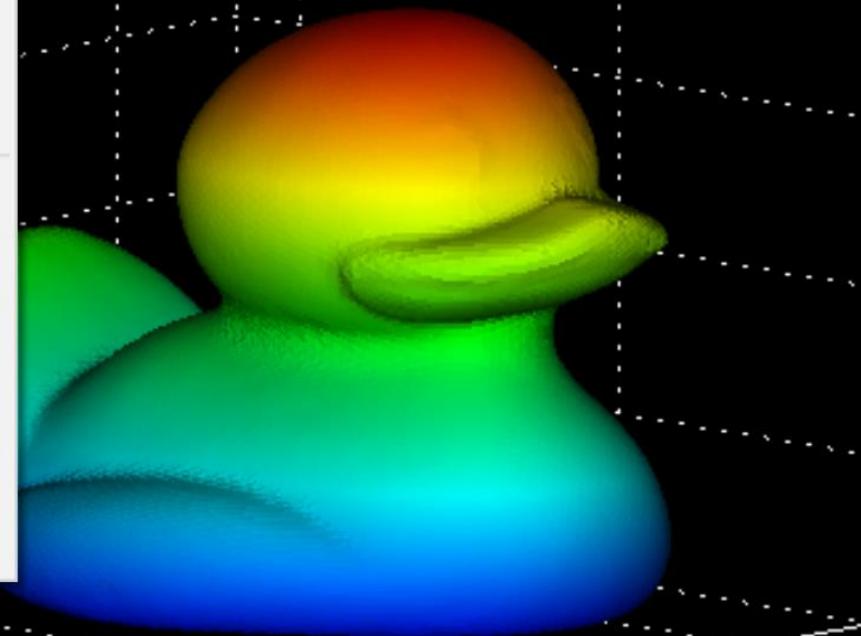
Rotate Z

Translate

Zero Z base



Click Mesh → LuBan

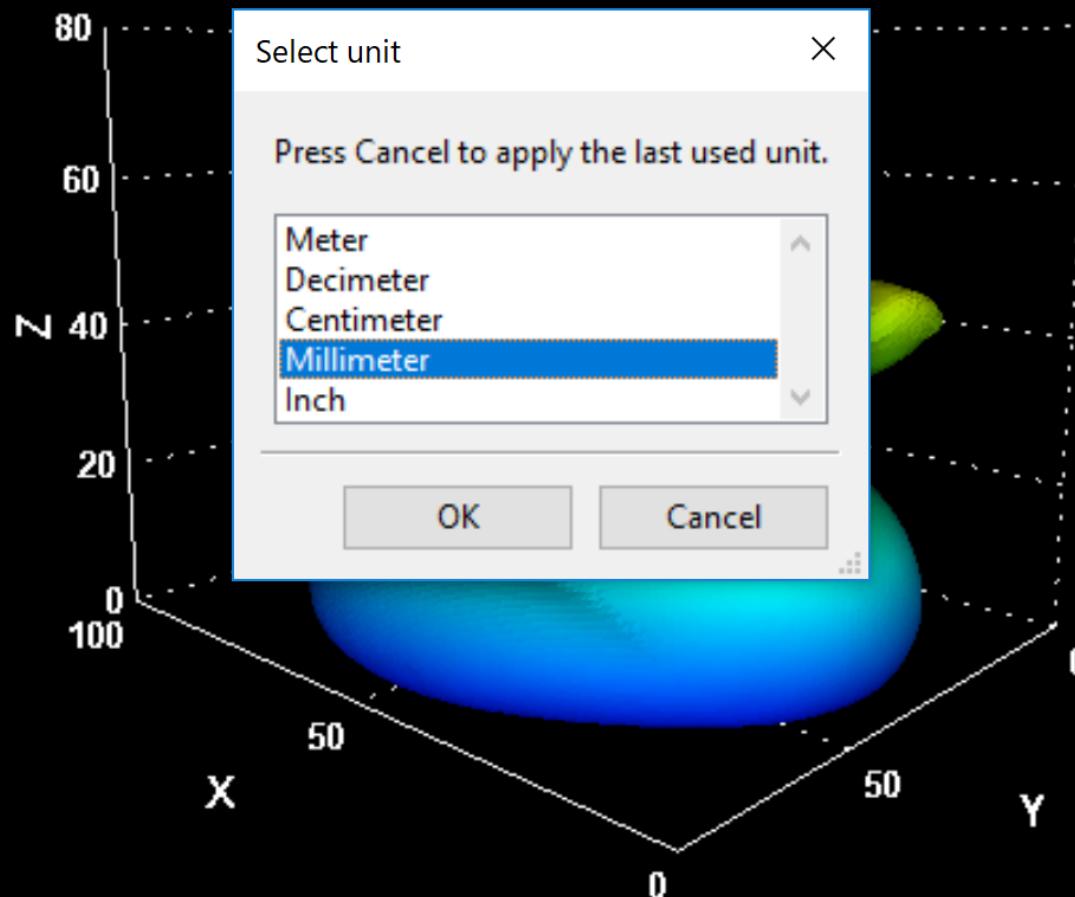


X

Y



Select a suitable unit



File Batch Edit View Mesh Draw Help



Input

Method	Null
Unit	Null
Model size X	Stack
Model size Y	Hash
Model size Z	Radial
	Plate
	Mold
	Module

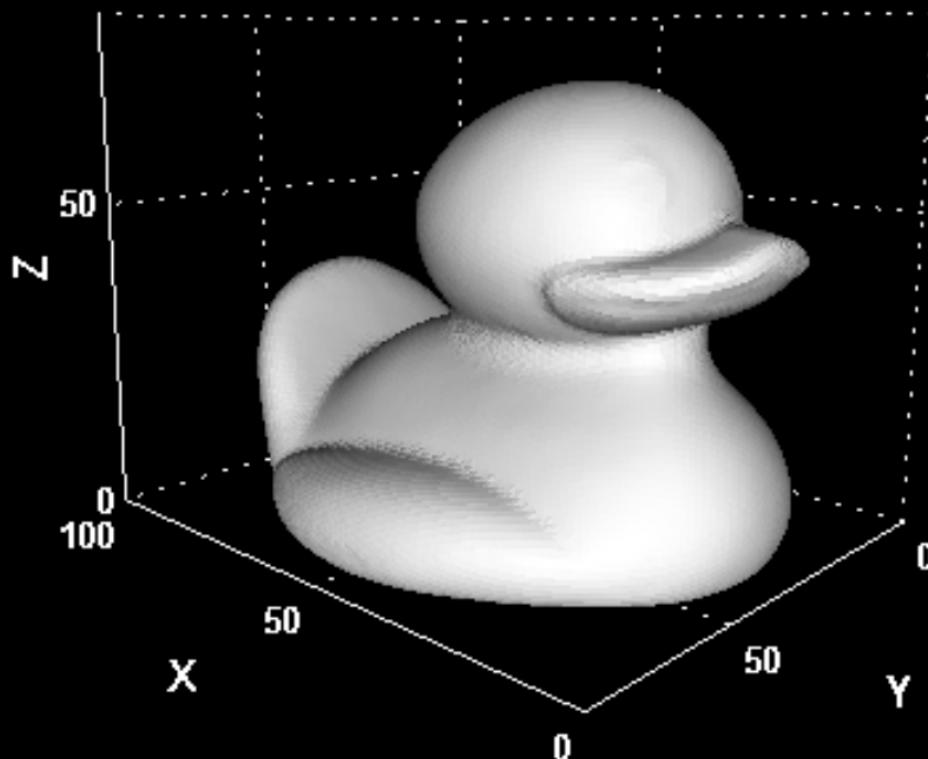
Output

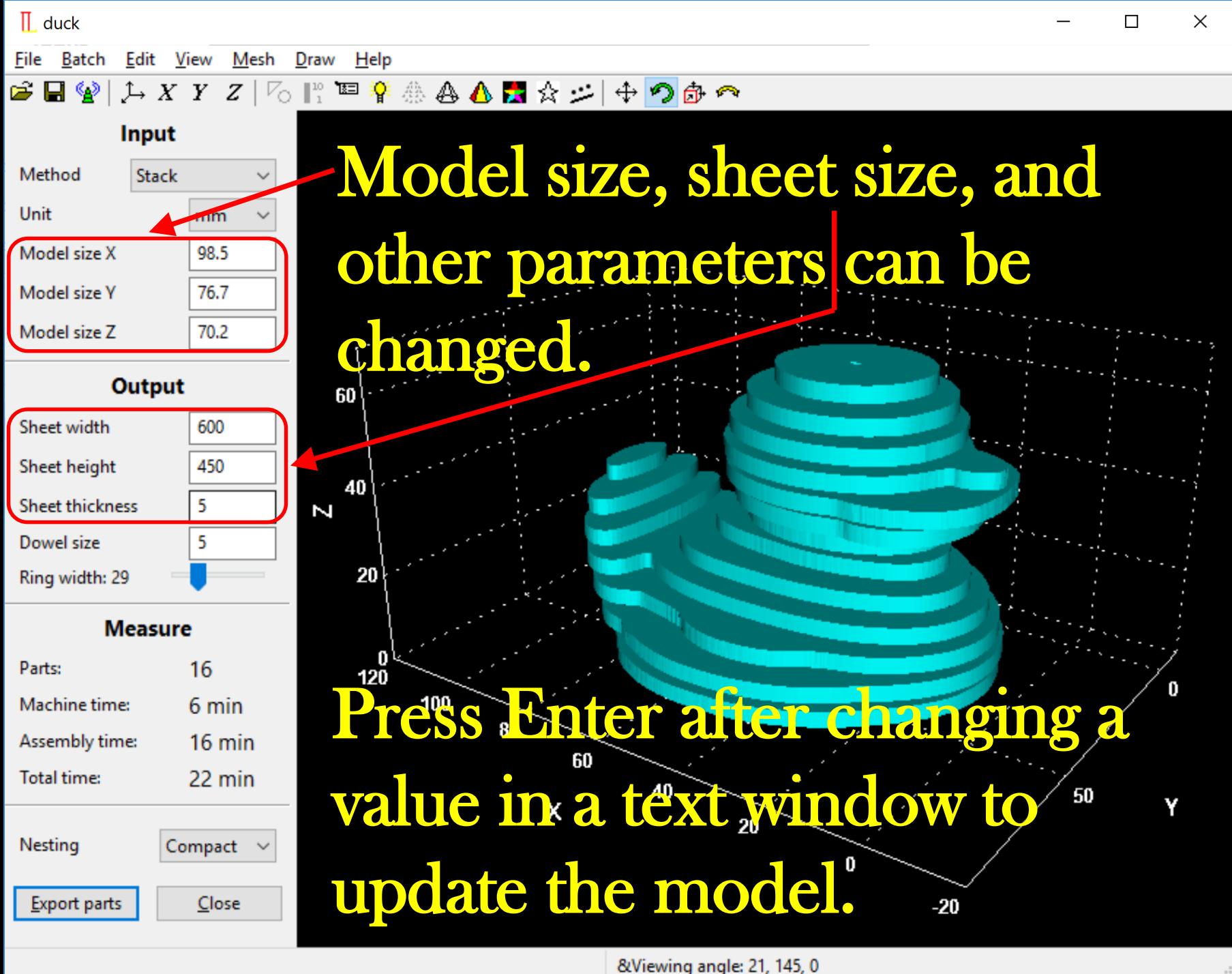
Measure

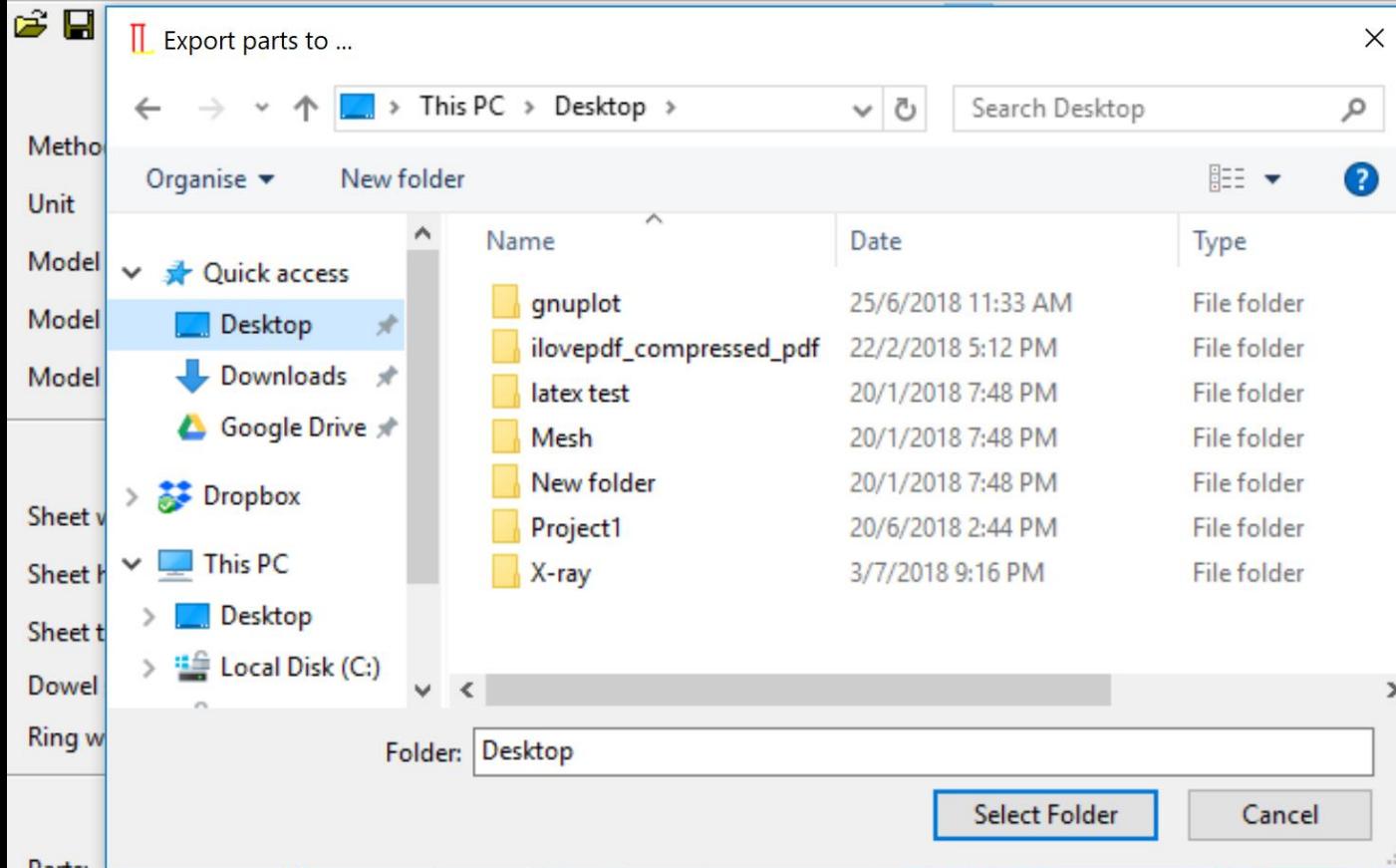
Export parts

Close

Select a method, e.g. Stack



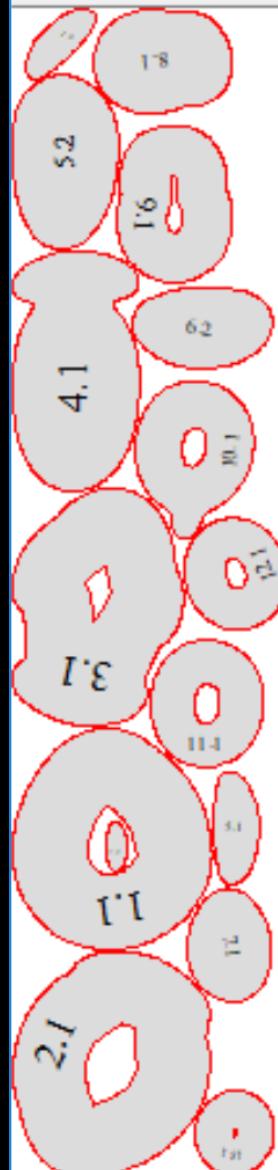




Press Export parts, and
select an exporting folder.

Export parts

Close

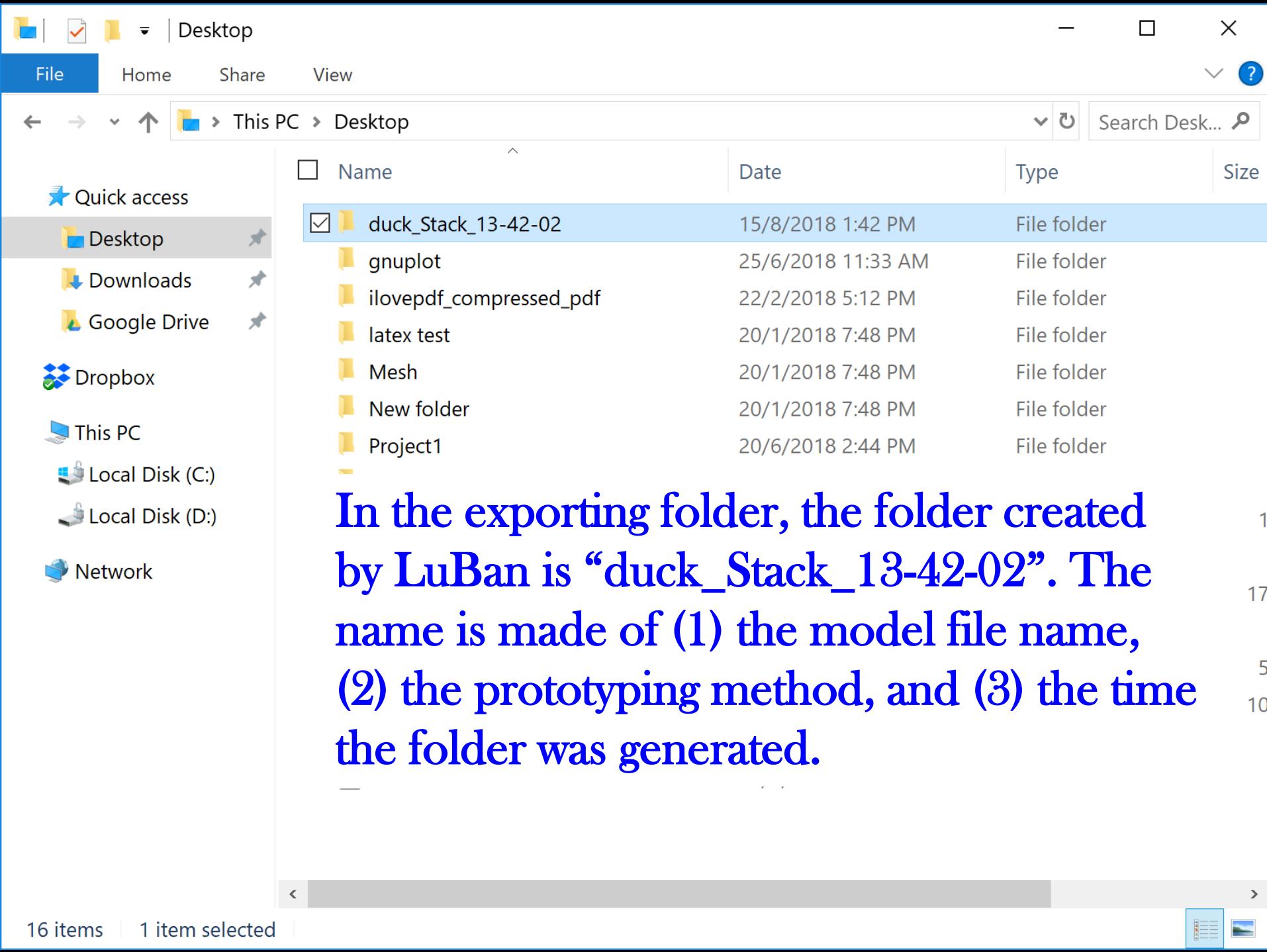


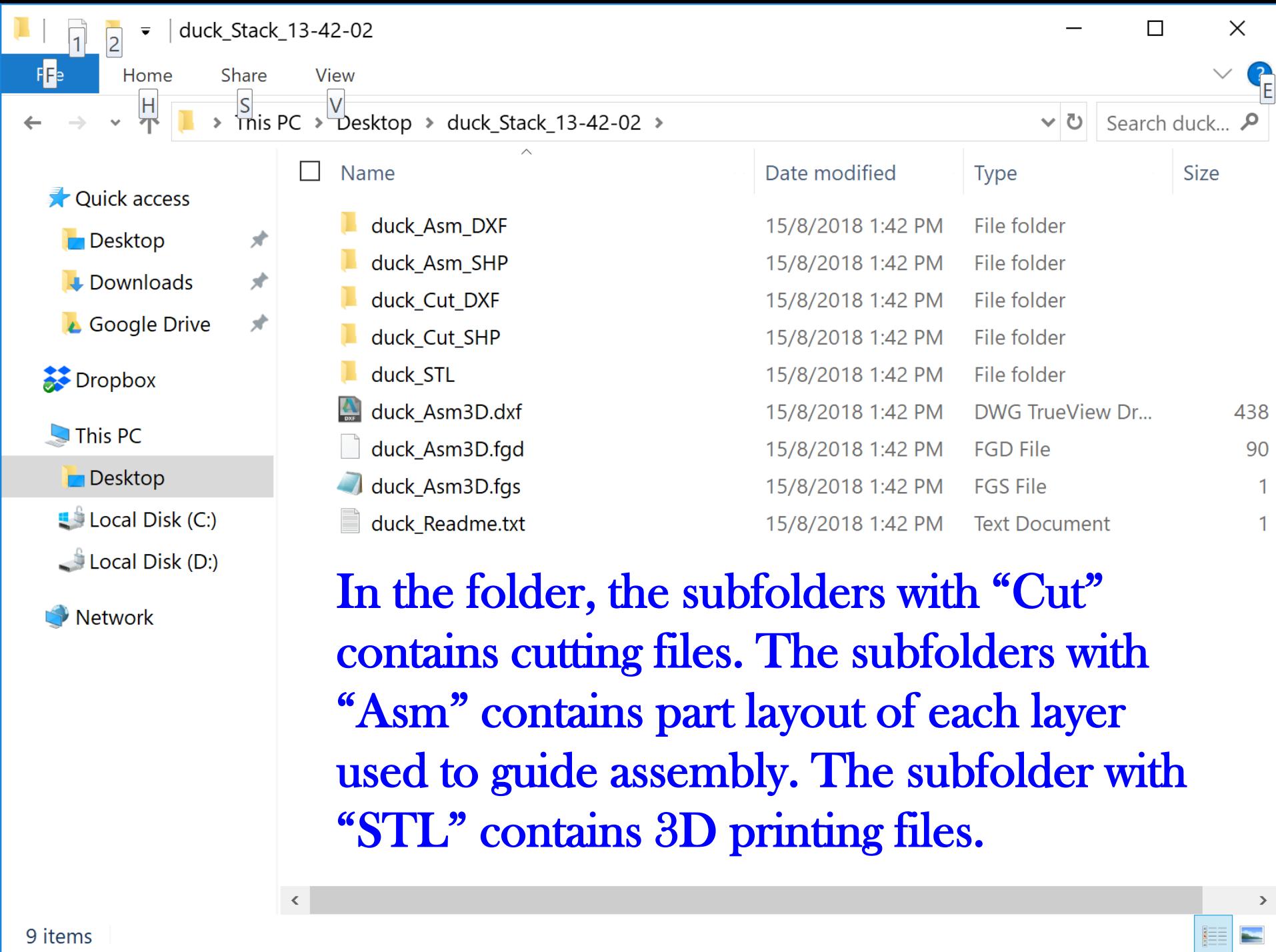
Parts will be generated and exported in several formats.

The DXF and SVG formats contain 2D shapes for laser cutting.

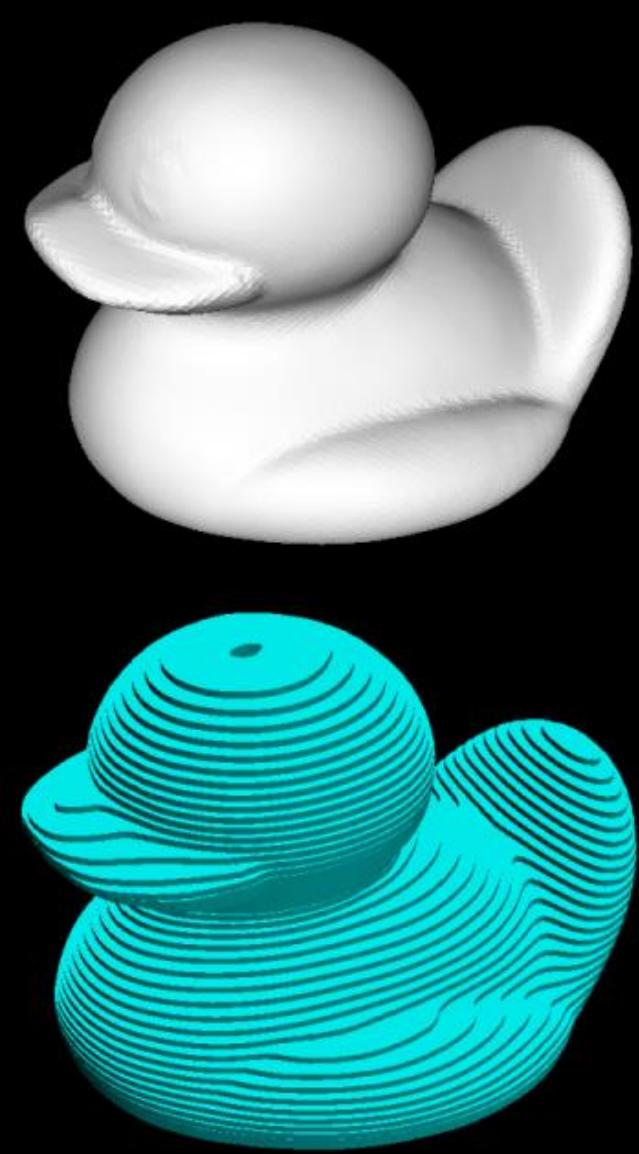
The STL format contains 3D shape for 3D printing.

The SHP format is Luban's native 2D shape format.





An example of the Stack method



Hash method

The screenshot shows a software interface for a Hash-style laser cutting or 3D printing process. The window title is "duck". The menu bar includes File, Batch, Edit, View, Mesh, Draw, and Help. The toolbar contains various icons for file operations and drawing tools.

Input Panel:

- Method: Hash (highlighted with a red box)
- Unit: mm (highlighted with a red box)
- Model size X: 168
- Model size Y: 131
- Model size Z: 120

Output Panel:

- Sheet width: 450
- Sheet height: 400
- Sheet thickness: 5
- Tolerance: 0 (highlighted with a red box)
- Ring width: 85
- X layer: 7
- Z layer: 8
- Tilt: 8-deg
- Text size: 25

Measure Panel:

- Parts: 19
- Machine time: 19 min
- Assembly time: 21 min

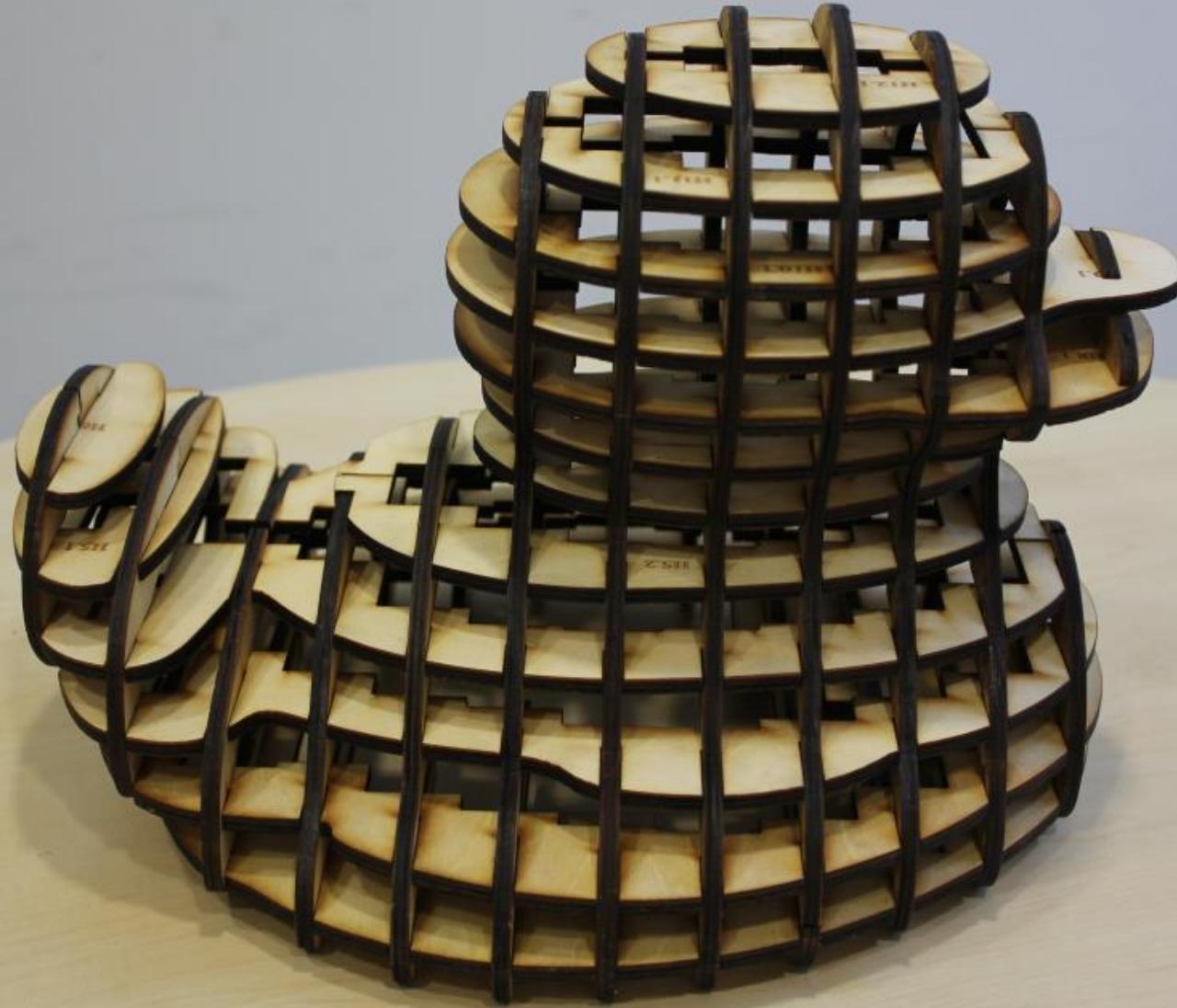
3D Preview: A 3D model of a multi-layered object is shown in a wireframe-style view, colored in various shades of green, blue, and purple. It appears to be a stack of rings or a similar cylindrical structure.

Annotations:

- A large yellow text box on the left side of the preview area states: "A positive tolerance can compensate for material loss during laser cutting." A red arrow points from this text to the "Tolerance" input field.
- A large yellow text box at the bottom right of the preview area states: "A negative tolerance can compensate for extra material deposited during 3D printing." A red arrow points from this text to the "Tolerance" input field.

&Viewing angle: 18, 16, 0

An example of the Hash method



Radial method

A radial center is referenced to generate the vertical slices.

duck

File Batch Edit View Mesh Draw Help

Input

Method: Radial

Unit: mm

Model size X: 210

Model size Y: 164

Model size Z: 150

Output

Sheet width: 450

Sheet height: 400

Sheet thickness: 5

Tolerance: 0

Ring width: 13

X layer: 7

Z layer: 8

Tilt: 8-deg

Text size: 25

Measure

Parts: 24

Machine time: 34 min

Assembly time: 29 min

&Viewing angle: 34, 12, 0

Changing ring width can hollow a slice.

Radial method

duck

File Batch Edit View Mesh Draw Help

Input

Method: Radial
Unit: mm
Model size X: 210
Model size Y: 164
Model size Z: 150

Output

Sheet width: 450
Sheet height: 400
Sheet thickness: 5
Tolerance: 0
Ring width: 13
X layer: 7
Z layer: 8
Tilt: 32-deg
Text size: 25

Measure

Parts: 21
Machine time: 31 min
Assembly time: 24 min

X and Z layer refer to the vertical and horizontal slices.

Change tilt can vary the slice direction.



An example
of the Radial
method

File → Close and Open a new model

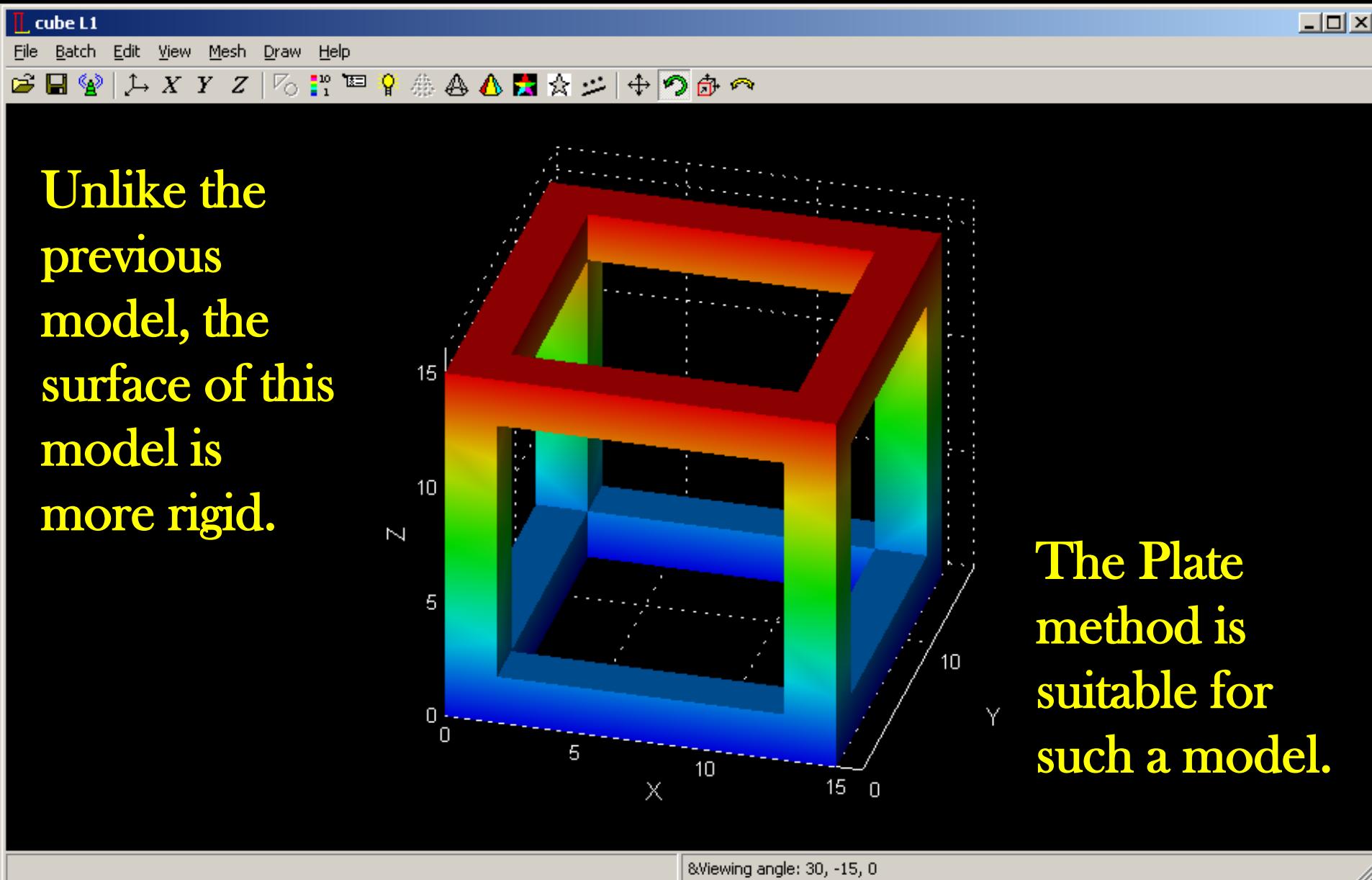


Plate method

The exterior surface is the same as the input model.

cube L1

File Batch Edit View Mesh Draw Help

Input

Method Plate

Unit mm

Model size X 70

Model size Y 70

Model size Z 70

Output

Sheet width 450

Sheet height 400

Sheet thickness 3.2

Tolerance 0

Finger width: 6

Text size: 32

Mold making

Measure

Parts: 30

Machine time: 17 min

Assembly time: 41 min

Total time: 58 min

Nestinn Compact

&Viewing angle: 30, -15, 0

Plate method

cube L1

File Batch Edit View Mesh Draw Help

X Y Z

Input

Method: Plate

Unit: mm

Model size X: 70

Model size Y: 70

Model size Z: 70

Output

Sheet width: 450

Sheet height: 400

Sheet thickness: 3.2

Tolerance: 0

Finger width: 6

Text size: 32

Mold making:

Measure

Parts: 30

Machine time: 16 min

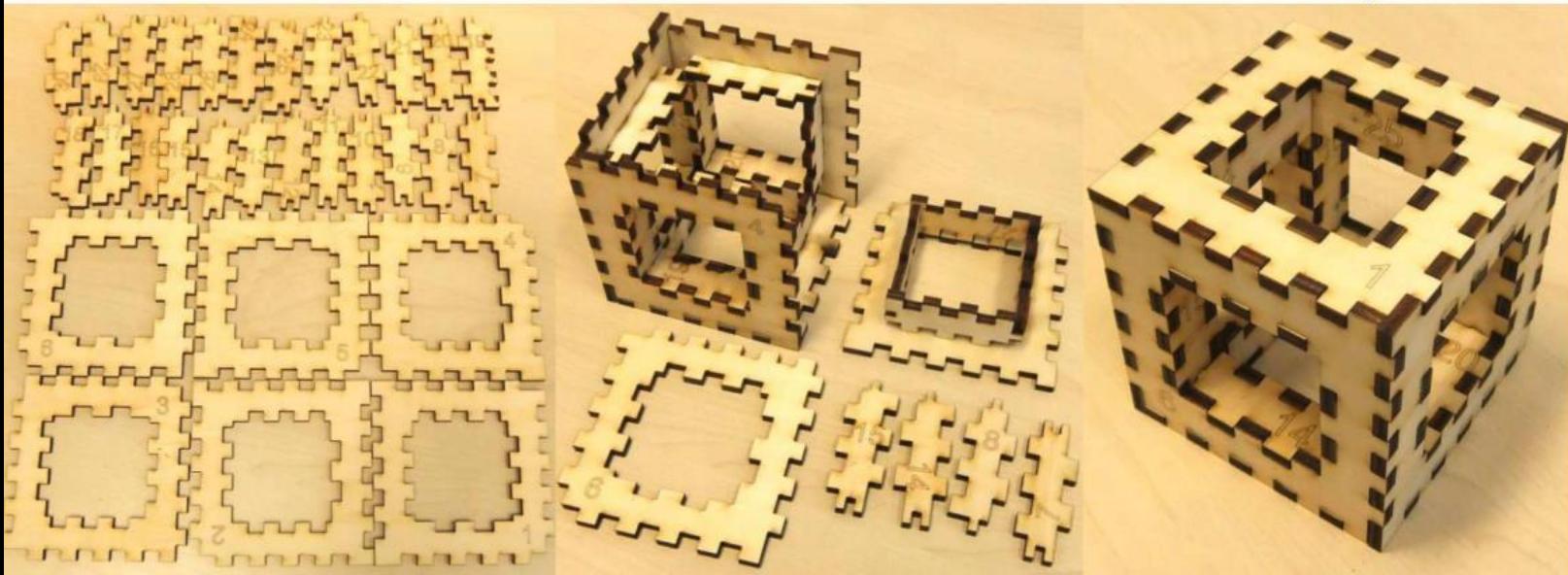
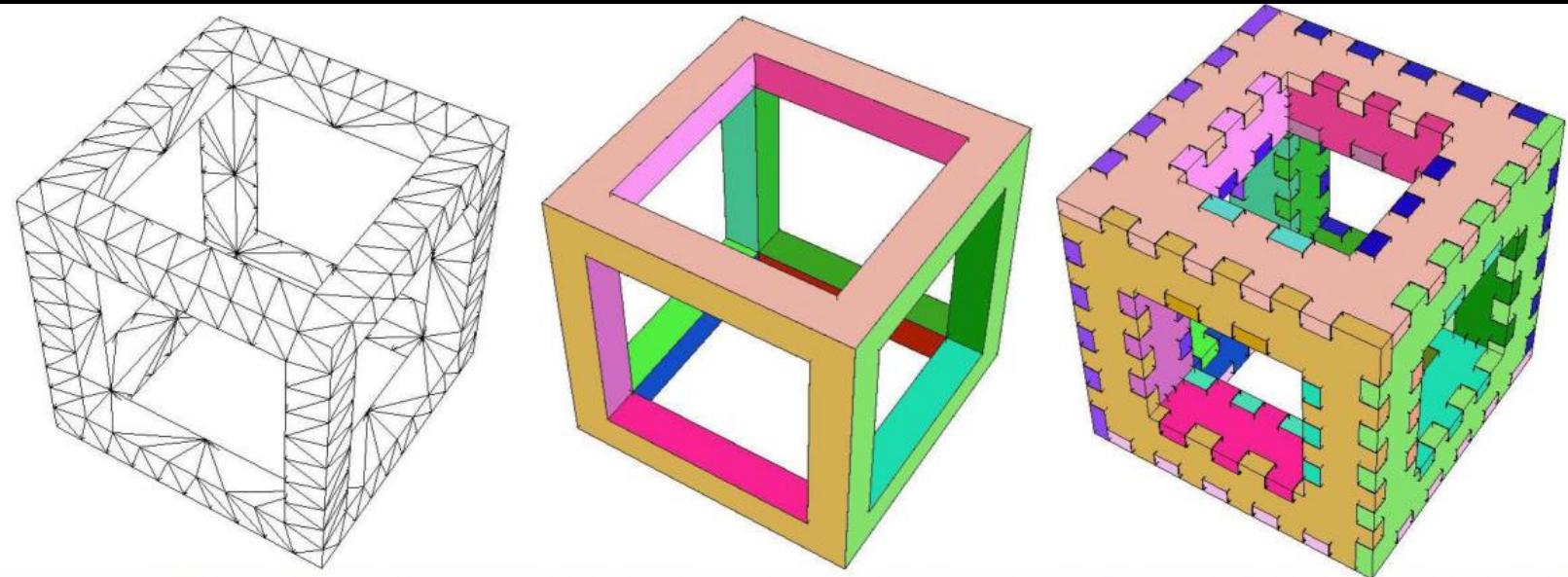
Assembly time: 41 min

Total time: 57 min

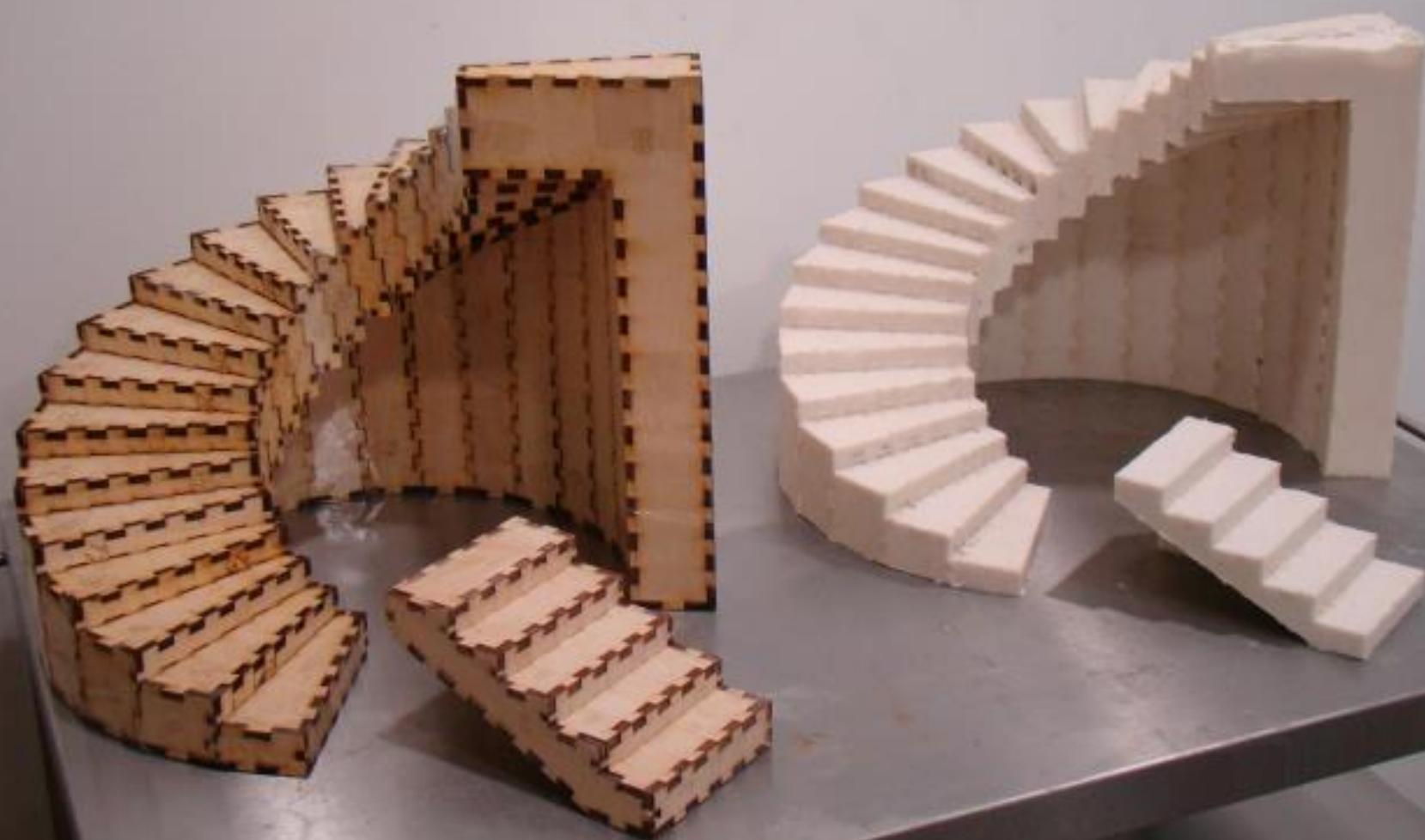
Nestinn Compact

Check Mold making. The interior surface is the same as the input model.

An example of the Plate method



An example of mold making



Module method

The green boxes are indicative, showing the size of a printer's volume.

The model is not segmented into pieces until “Export part” is clicked.

The screenshot shows the 'dragon_en_Simplify' software window. On the left, there is a configuration panel with several sections:

- Input**: Method dropdown set to "Module", Unit dropdown set to "mm". Model size X: 138, Model size Y: 163, Model size Z: 259.
- Output**: Printer bed dropdown set to "Rectangle". Print volume X: 200, Print volume Y: 150, Print volume Z: 140. Radio buttons for Planar cut (selected), Natural cut, Plug, Dowel, Terrace, and Pyramid. Plug shape dropdown set to "Square", Plug depth/w: 1, Tolerance: -0.2.
- Measure**: Parts, Machine time, Assembly time, Total time.

At the bottom left is a blue button labeled "Export parts". A red arrow points from the text "The green boxes are indicative, showing the size of a printer's volume." to the "Print volume" section. Another red arrow points from the text "The model is not segmented into pieces until “Export part” is clicked." to the "Export parts" button. The main area of the window displays a 3D model of a dragon standing on a rectangular base, visualized within a large green cube representing the print volume. The axes are labeled X, Y, and Z, with numerical scales from -100 to 250.

&Viewing angle: 19, -64, 0

Module method

dragon_en_Simplify

File Batch Edit View Mesh Object Draw Help

Input

Method: Module

Unit: mm

Model size X: 138

Model size Y: 163

Model size Z: 259

Output

Printer bed: Circle

Bed diameter: 340

Print volume Z: 140

Planar cut Natural cut

Plug Terrace Dowel Pyramid

Plug shape: Square

Plug depth/w: 1

Tolerance: -0.2

Measure

Parts:

Machine time:

Assembly time:

Total time:

Export parts Close

LuBan supports cylindrical print volume as well as cubic volume.

The type of connectors can be configured.

Planar cut produces flat sections.

Natural cut produces curvy sections.

&Viewing angle: 25, -67, 0

Module method

dragon_en_Simplify

File Batch Edit View Mesh Object Draw Help

Input

Method: Module

Unit: mm

Model size X: 138

Model size Y: 163

Model size Z: 259

Output

Printer bed: Rectangle

Print volume X: 200

Print volume Y: 150

Print volume Z: 140

Planar cut (radio button)

Plug (radio button)

Terrace (radio button)

Plug shape: Square

Plug depth/w: 2

Tolerance: -0.2

Measure

Parts: 5

Machine time: 16 h

Assembly time: 3 min

Total time: 16 h

Export parts Close

Use Object →
Select to highlight each object.

Plug depth/w ratio controls the height of a connector with respect to its width.

Select Part_01 Delete

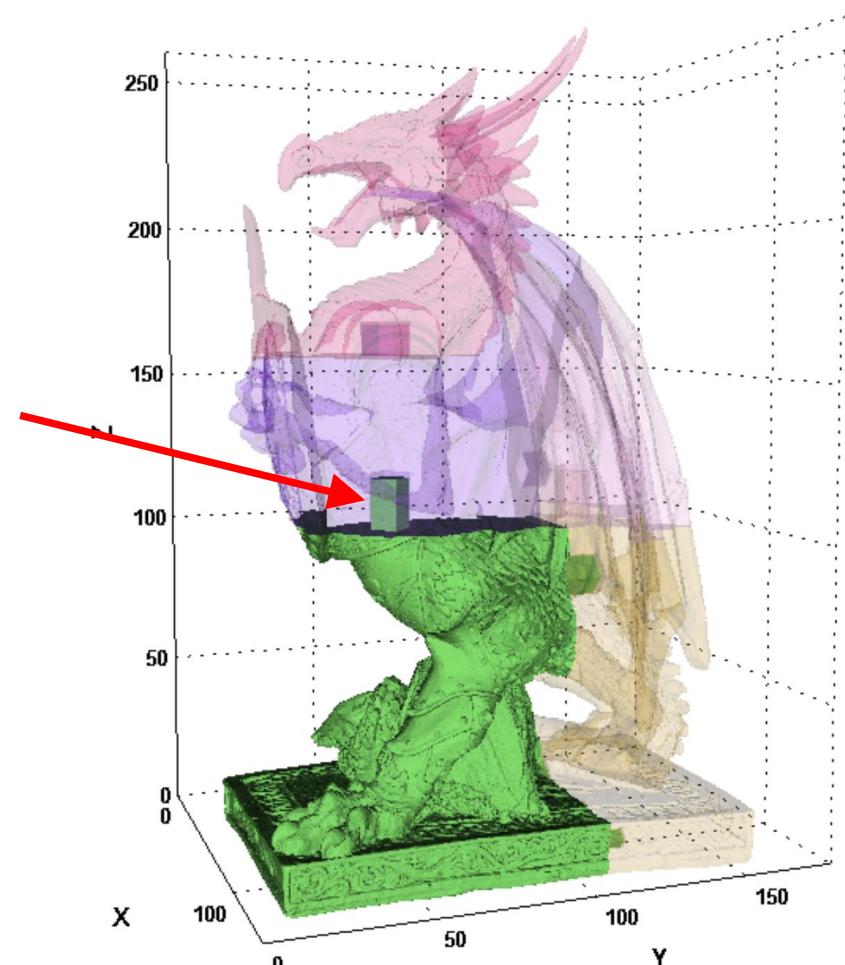
dragon_en_Simplify

X Y Z

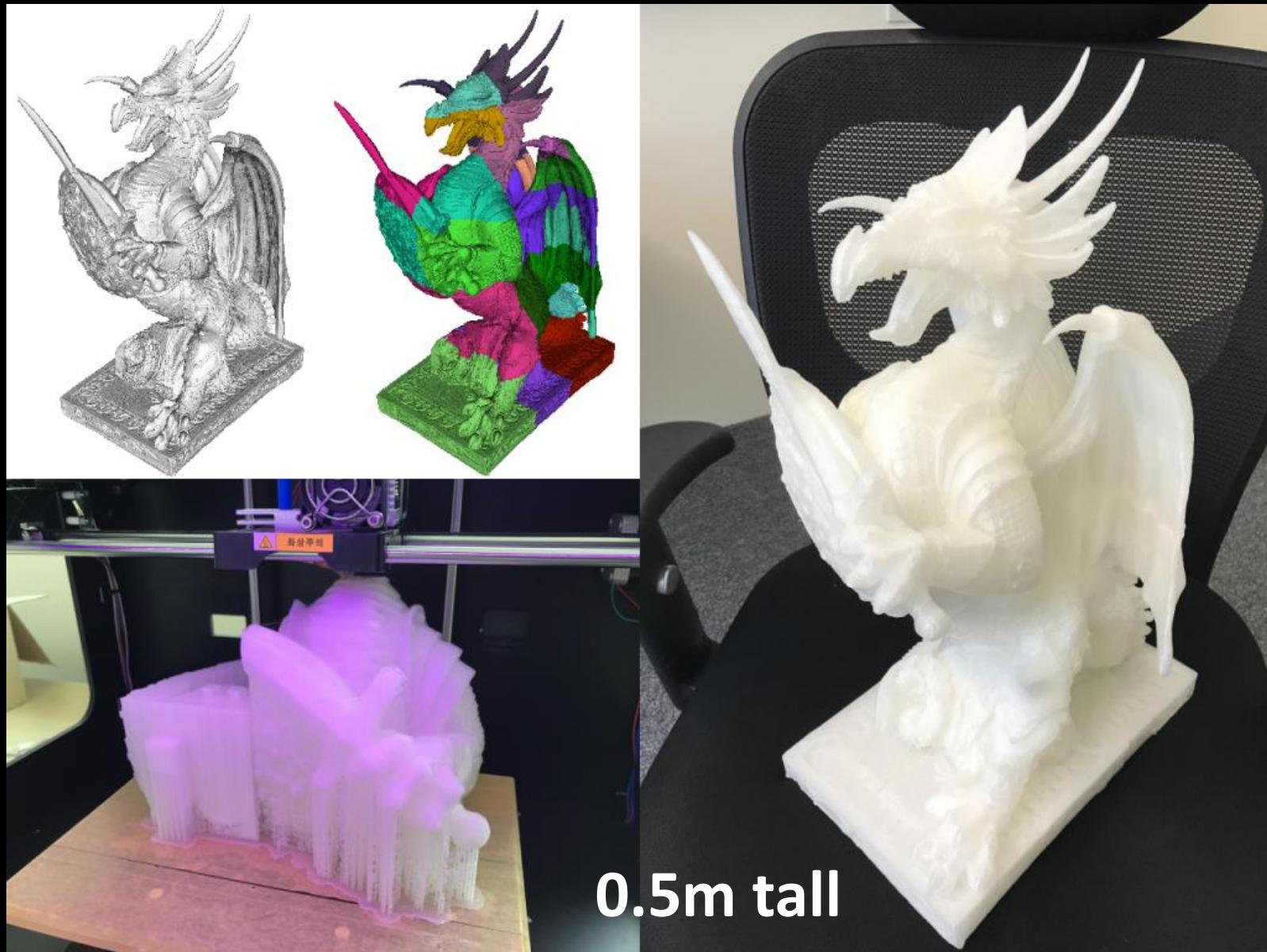
250
200
150
100
50
0

100 50 100 150

&Viewing angle: 5, -70, 0



An example of the Module method



Module method: Plug and Dowel

Plugs are male-female connectors and their sizes are determined by LuBan, not by a user. They are printed on parts of an object. Dowels are female-female connectors and their size is user-specified because a user have to make infill dowels in a separate process. Some users print the infill dowels; others may use wooden or metal rods as infill. It is inconvenient for a user to make different-sized infill dowels; therefore, the dowel size does not change. If plugs or dowels are not generated, it is probably because they are too big to be placed in a cut section.

Tolerance

Tolerance can compensate for material loss in laser cutting or material gain in 3D printing. The tolerance is a signed value. The larger the tolerance, the tighter the connectors or slots; the smaller the tolerance, the looser they are. Set a positive tolerance for laser cutting; e.g. 0.1mm to compensate for a layer of 0.1mm material burnt by laser. Set a negative tolerance for 3D printing; e.g. -0.2mm to compensate for a 0.2mm shell printed around an object. The best tolerance is found by trial and error because it is dependent on many factors, such as type of machine, configuration of the cutting or printing process. Rule of the thumb: if the connectors or slots are too tight, reduce the tolerance, and vice versa.

Wireframe method

duck

File Batch Edit View Mesh Object Draw Help

X Y Z

Input

Method: **Wireframe**

Unit: mm

Model size X: 98.5

Model size Y: 76.7

Model size Z: 70.2

Output

X layer: 24

Y layer: 27

Z layer: 21

Tilt: 0-deg

Hash Radial

Boundary clearance: 5

Measure

Parts:

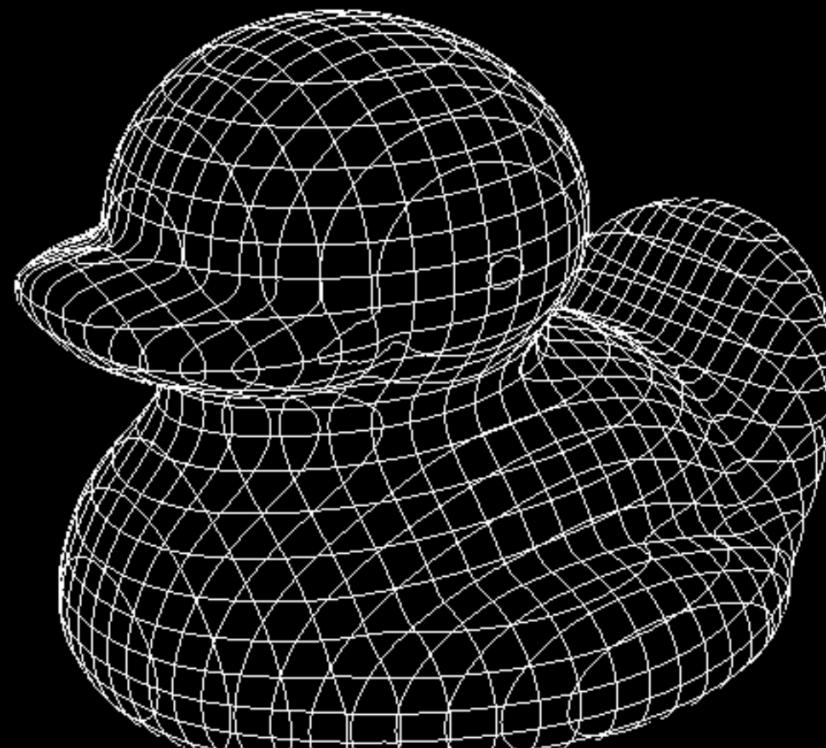
Machine time:

Assembly time:

Total time:

Imprint Close

Drag the sliders to adjust the number of contours in the wireframe.



&Viewing angle: 21, 39, 0

Wireframe method

The screenshot shows a CAD application window titled "duck". The menu bar includes File, Batch, Edit, View, Mesh, Object, Draw, and Help. The toolbar contains various icons for file operations and drawing tools. On the left, a control panel has sections for Input, Output, and Measure. The Input section shows "Method: Wireframe" selected from a dropdown, "Unit: mm", and "Model size X: 98.5", "Y: 76.7", "Z: 70.2". The Output section shows "X layer: 24", "Z layer: 21", "Tilt: 0-deg", and two radio buttons: "Hash" (unchecked) and "Radial" (checked). A "Boundary clearance" input field is set to 5. The Measure section lists parts, machine time, assembly time, and total time. At the bottom are "Imprint" and "Close" buttons. The main workspace displays a wireframe model of a helmet.

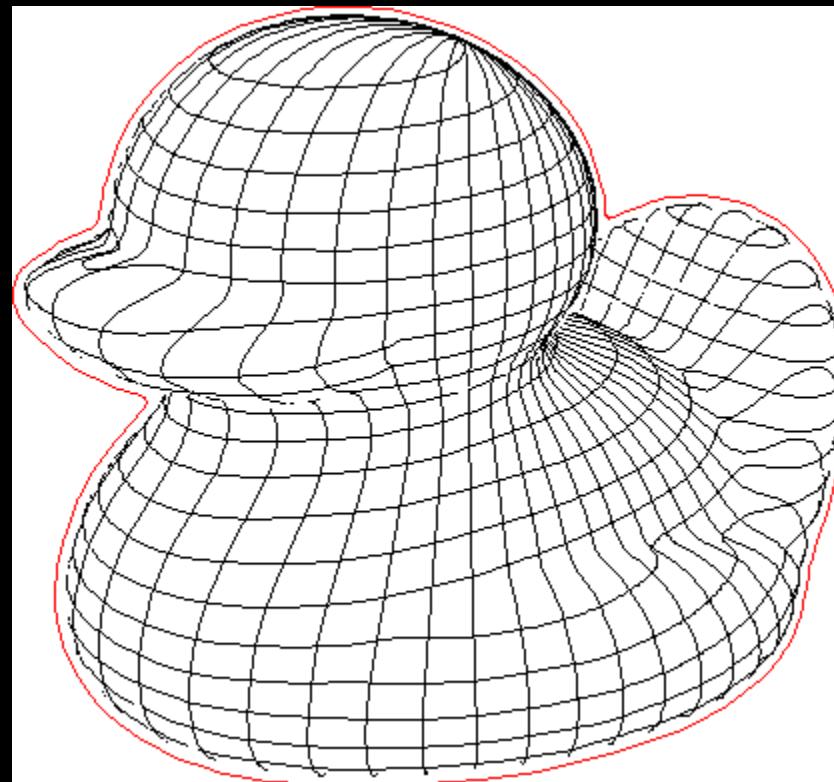
Toggle between orthogonal and radial wireframe

Clearance from cutting boundary to wireframe

Click "Imprint" to generate vector images

Wireframe method

Vector images in DXF and SVG format can be found in the exporting folder. They can be used for laser cutting and engraving.



An example of the Wireframe method

