

NetFabb Studio Basic

Edit and Repair Mesh Files

Using RapMan



Why edit or repair?

- Most CAD programs make a fairly decent job of exporting designed parts in .stl format. (the format used by many rapid prototyping programs). Sometimes the .stl file will not convert properly to g-code as the file can contain holes, flipped triangles or other errors.
- Some programs may not position the part in the centre of the RapMan bed or it may be wrong way round.
- It may be that the part needs to be scaled to a suitable size.
- NetFabb Basic (a free program) can deal with all these problems.... and more.

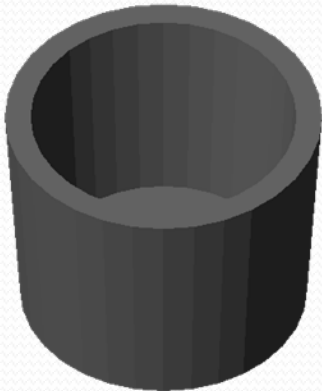
Where to get it.

- NetFabb Studio Basic can be downloaded free from this website <http://www.netfabb.com/>
- NetFabb is available for Windows and Linux
- There is also a “paid for” version with much more functionality to create and edit parts... NetFabb Studio Professional.
- ...And a mobile version is available from the iTunes Store.

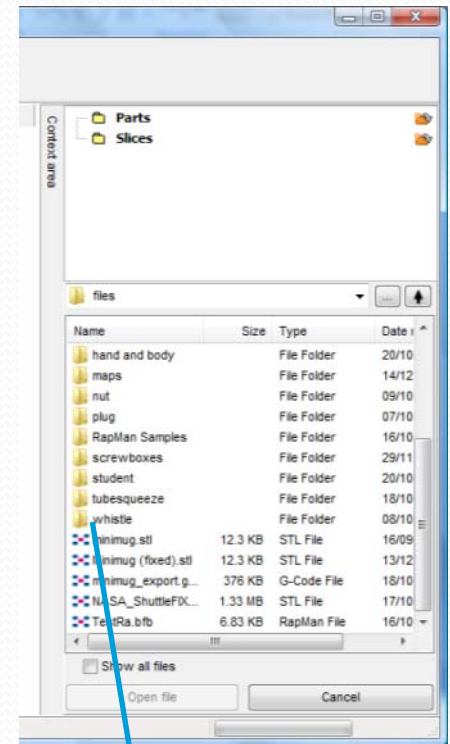
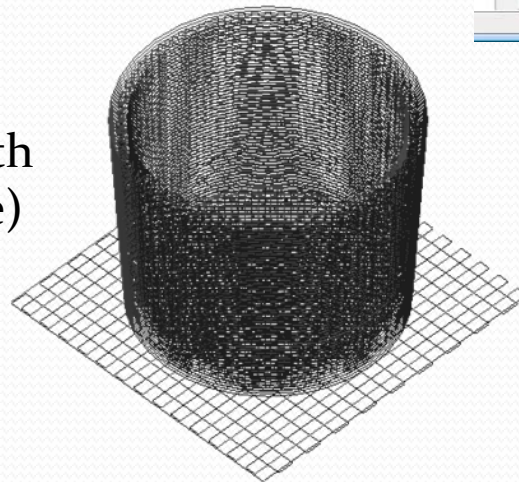
Opening mesh files

- When NetFabb is running select “Project” and “File Preview Browser”. You can then browse to the folder containing your files.
- NetFabb will display a preview .stl files or a toolpath for g-code files.

.stl file



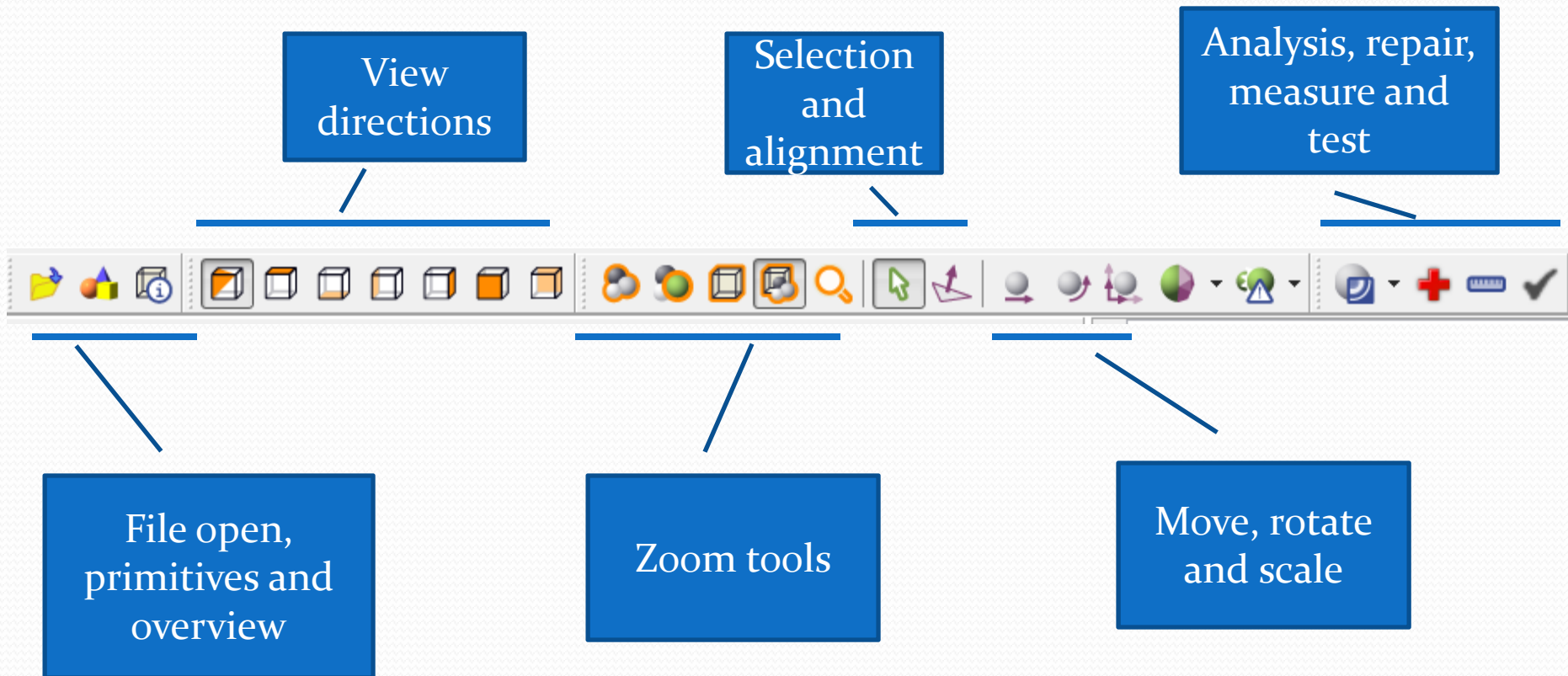
Toolpath
(g-code)



Single click
to preview
files.
Double click
to open

Basic functions

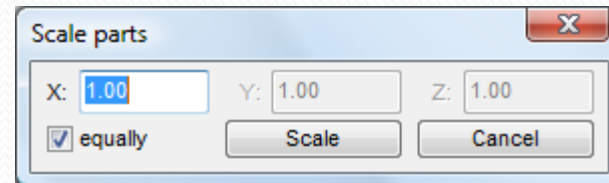
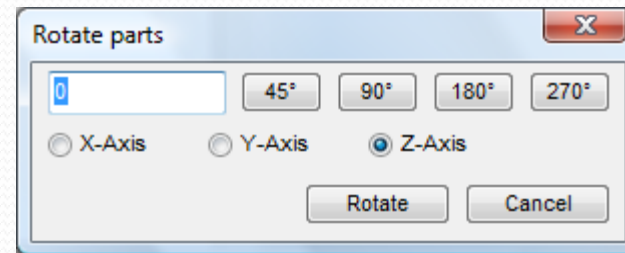
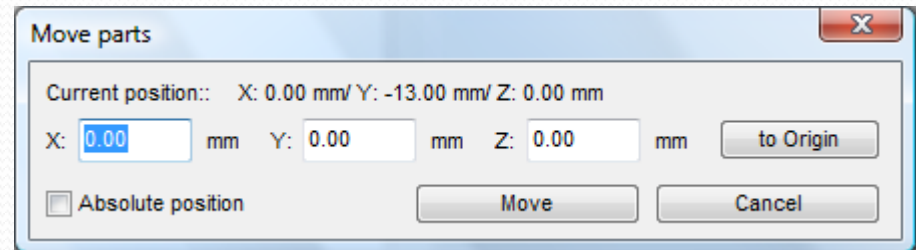
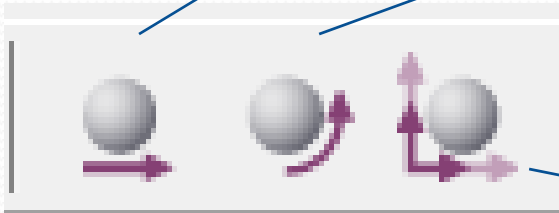
- Most of NetFabb's functions can be accessed via the toolbar....these are fairly self explanatory.



Move, Rotate and Scale

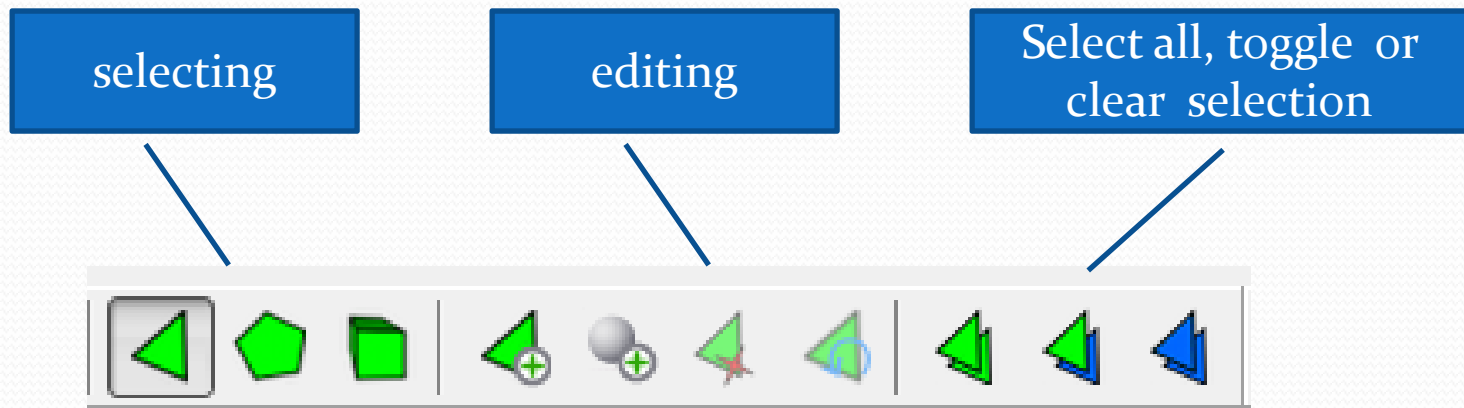
- Clicking these buttons open dialog boxes into which the correct settings are entered.

Note the very useful
“to origin” button



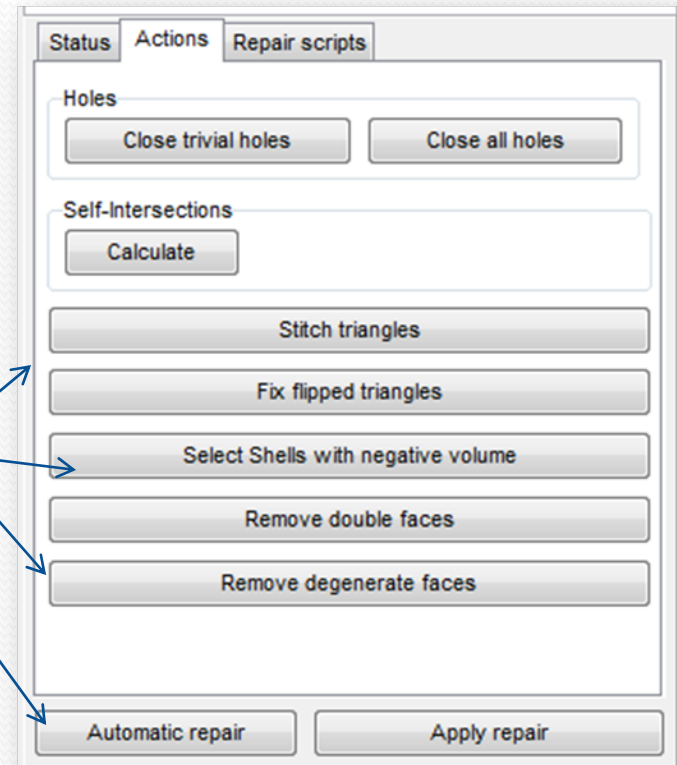
Editing parts

- When the red cross button is pressed an new toolbar opens with tools to select triangles, surfaces or shells.
- Other tools allow you to add, remove or flip triangles, in this way you can manually fix small problems with the .stl file

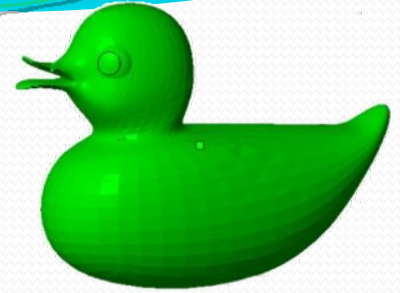


Repairing Parts

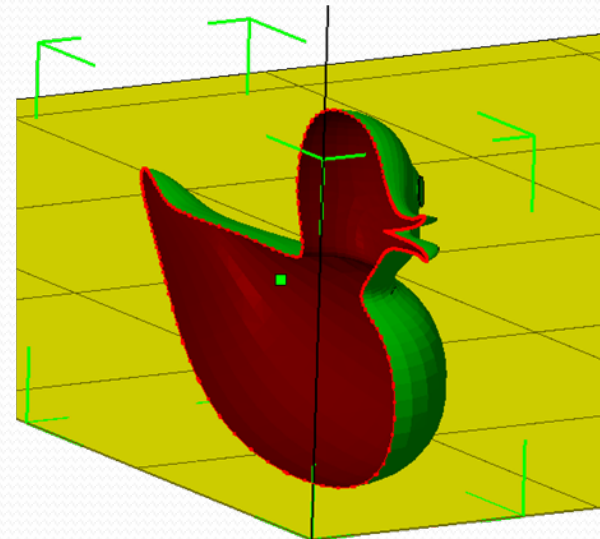
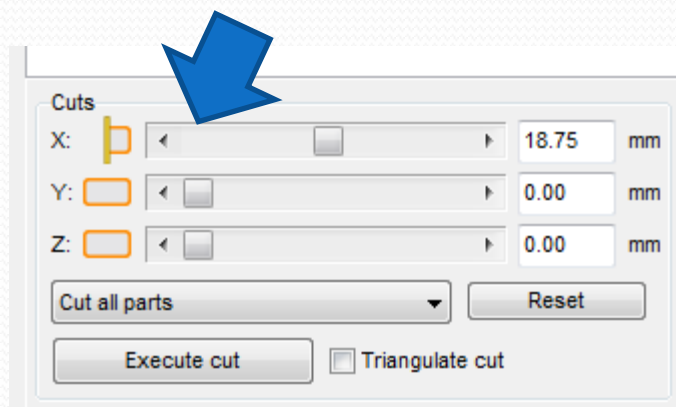
- .stl files can contain a huge number of triangles in their mesh, if there are many errors, editing manually can be difficult and time consuming. One of NetFabb's strengths is its ability to perform automatic repairs.
- Click the red cross button, and select the appropriate type of repair from the actions tab.
- Even easier, use the automatic repair!
- After the repair has been done select "apply repair", you will be given the option to remove the old part... A good thing to do!



Cuts

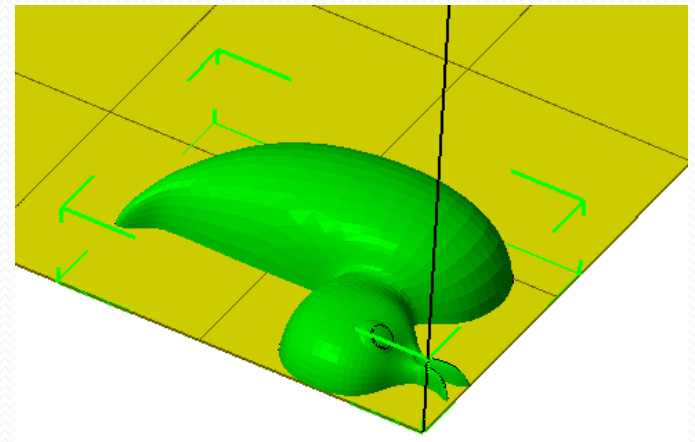
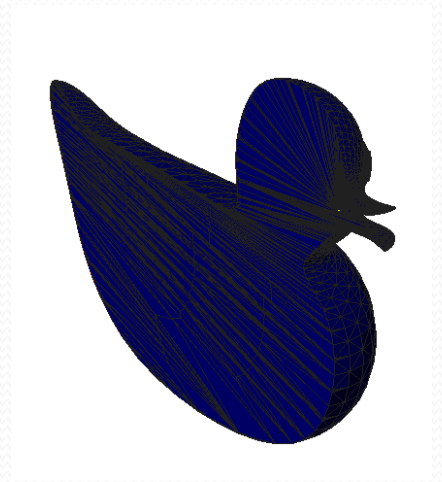


- If an object can not be printed due to overhanging or unsupported parts (like the duck here), it may be possible that cutting it into 2 (or more) parts and rotating them may make the print possible.
- The “Cut” functions may be used like this...



Cuts (2)

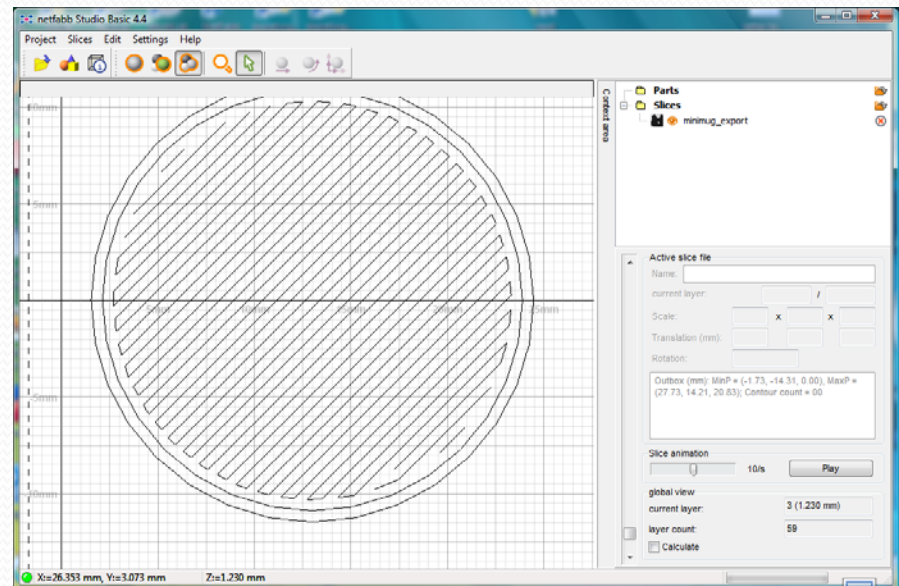
- After cutting the part it may be necessary to repair it again to form a solid shape.
- Rotate the part so that it is flat side down and save it as an .stl file. And of course repeat it for the other half.



Slices

- NetFabb will also open g-code files to enable you to step through the layers and see the toolpaths.
- G-code files can be opened from the “project” menu or the “file preview browser” which also gives you a 3D view.

- Clicking on the “play” button automatically steps through the layers at the speed you choose

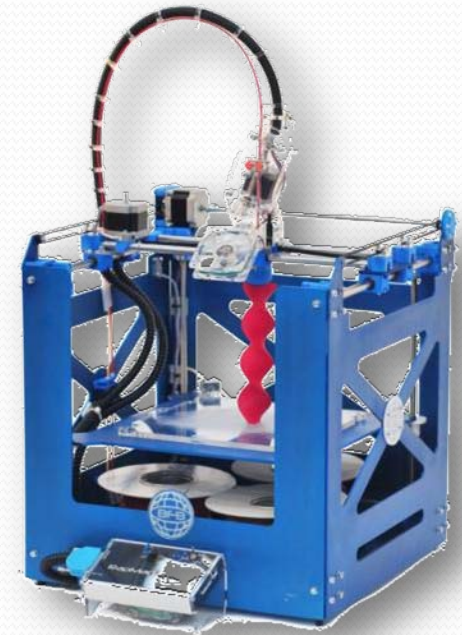
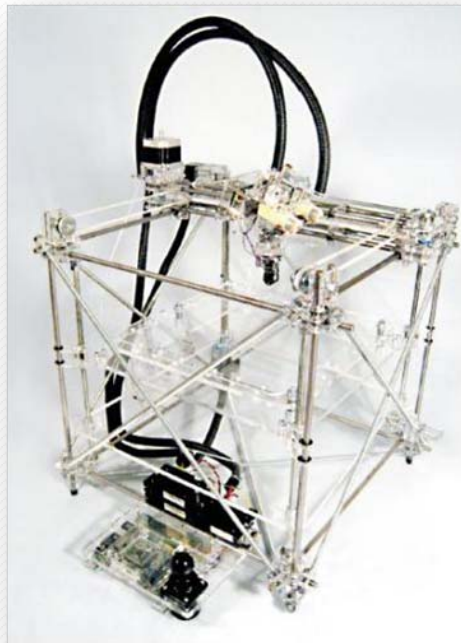
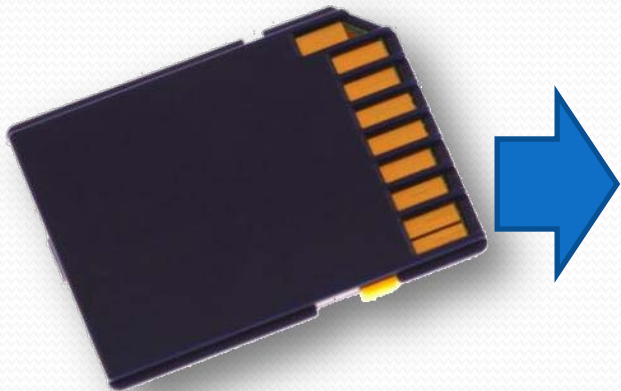


Saving files

- In NetFabb there are two main ways to save your work. If you want to return to your editing or repairing then save it as a .fabbproject file. This is done using the “save” options in the “project” menu.
- Of course you will want to save your edited or repaired part as an .stl file. It’s not all that obvious what to do, so.....
 - Make sure the object is selected (green)
 - Then select “export part as STL” from the part menu.

Printing

- After using NetFabb to edit or repair your .stl files you will need to convert them to g-code. This can be done with the open source software called “skeinforge” or with the Rapman engine for Netfabb (a paid for program).
- The file is then copied to a SD card and inserted into the machine.



RapMan

- RapMan is a low cost 3D printer available from Bits from Bytes www.bitsfrombytes.com
- Further assistance can be found on the BfB forum and wiki.

Forum <http://www.bitsfrombytes.com/fora/user/index.php>

Wiki <http://www.bitsfrombytes.com/wiki>

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