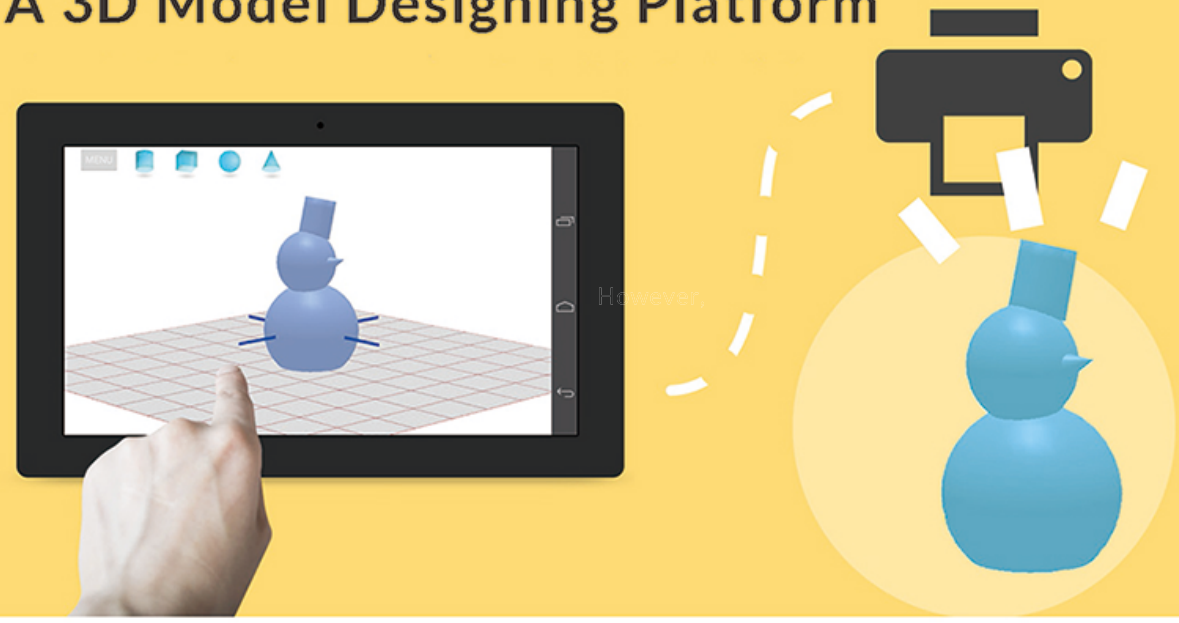
A 3D Model Designing Platform



my3D

my3d is an easy-3d-modeling platform, especially designed for teenagers. It contains 2D draft drawing, 3D model editing and 3D printing. Different from normal 3D modeling software, my3D runs on touch device like pad and mobile phone, and use multi-fingers touch instead of the using of mouse. In the meantime, the .STL file generated can be sent to 3D printer directly.

Universalizing high-tech into teenagers' education and normal family has become more and more a high trend. My3D is very convenient that teenagers can produce their designed items easily, using pad or mobile phone. It can not only impress the teenagers with the fascination of high-technology, but also arouse their interest of designing. Moreover, my3D can also be used as a family producing tool to print button, cup, box etc.

Analysis

- Rapid development and lower cost of 3D print technology
- Schools start providing 3D printer for students to try
- Normal 3D modeling software like 3Dmax is too difficult for teenagers
- Teenagers just want to model simple models like tree, house etc.
- To use touch device is a piece of case for teenagers
- To use mouse is bothering and tired

Focusing on **teenagers**, 3D print technology will take great market place

Using simple operation and **touch device**

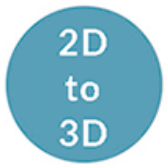
No need of complex function, just **normal** geometric deformation and splicing

Use **multi-finger touch** instead of mouse and keyboard

Formation of software and its wireframe

Based on the analysis above, we divide my3D into following 4 parts:

edit 3D models



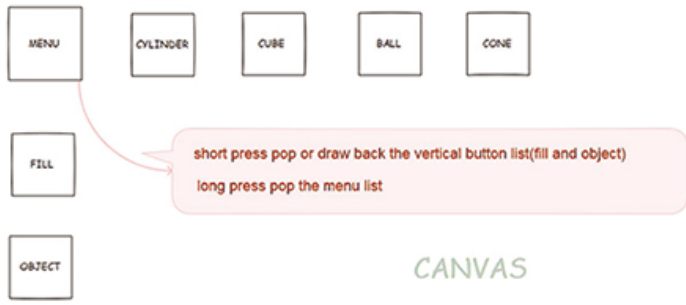
transfer 2D draft into 3D model

load and save 3D models

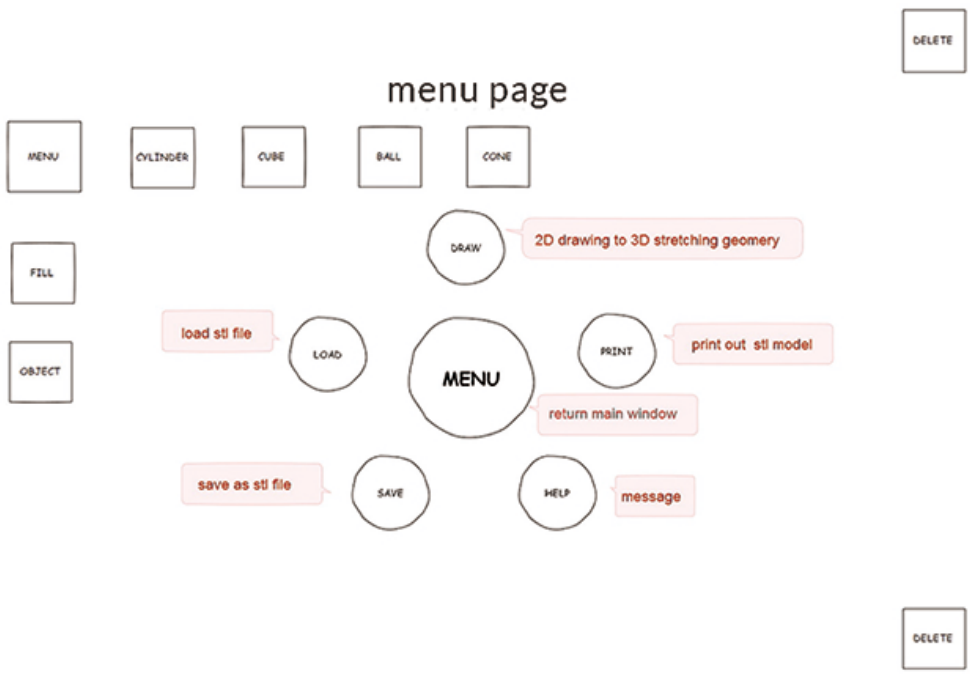
print 3D model

wireframe

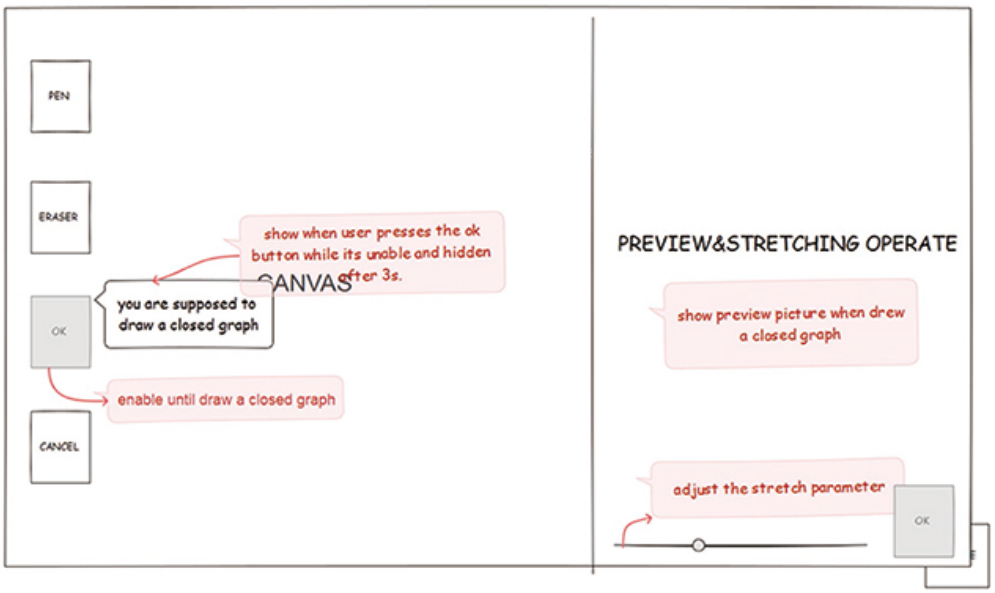
main page

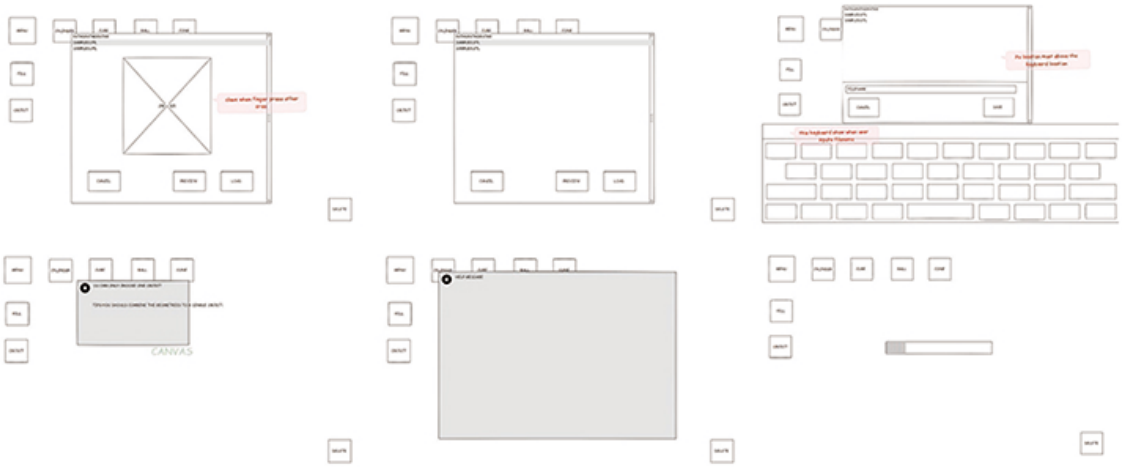


menu page



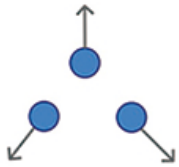
transfer 2D draft to 3D





Multi-finger touch interact

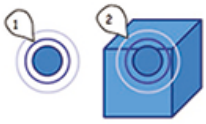
perspective zooming



scroll

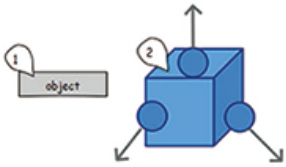
pick

re-pick

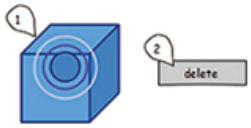


1.long-pressing at blank area
2.long-pressing at object

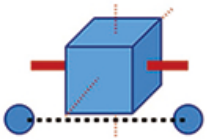
object zooming



delete

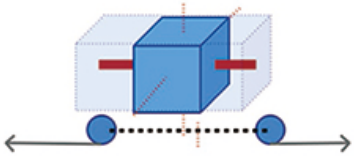


axis select

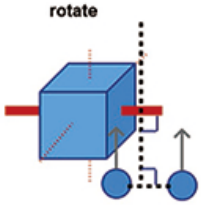


select the axis accord with the finger-points of connection

stretch

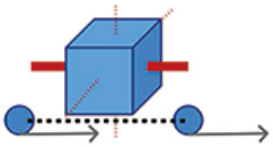


rotate



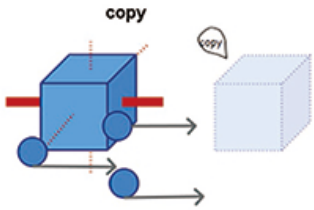
rotat around the selected axis

panning



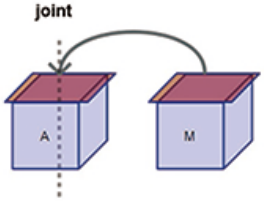
panning along the finger moveing direction

copy



copy to where fingers move

joint



the lines perpendicular to the target surface

Conclusion

Comparing to the normal 3D modeling software, my3D has its advantages in multi-touch operation, modeling and print platform integration and software mobilization.

However, because of the limit of technology, some multi-touch operations will be confused by machine sometime, and some of the interacting way should be optimized. For example, for the rotation, it's better to choose an axis first, then rotate the direction with single finger (but not keep the 2 fingers on screen after choosing an axis)