

3D printing robot armies

don't be scared

Before ~2009 3D printers

- . Were extremely expensive
- . Required pricey materials
- . Thus out of the hands of consumers
- . They were, however, very accurate

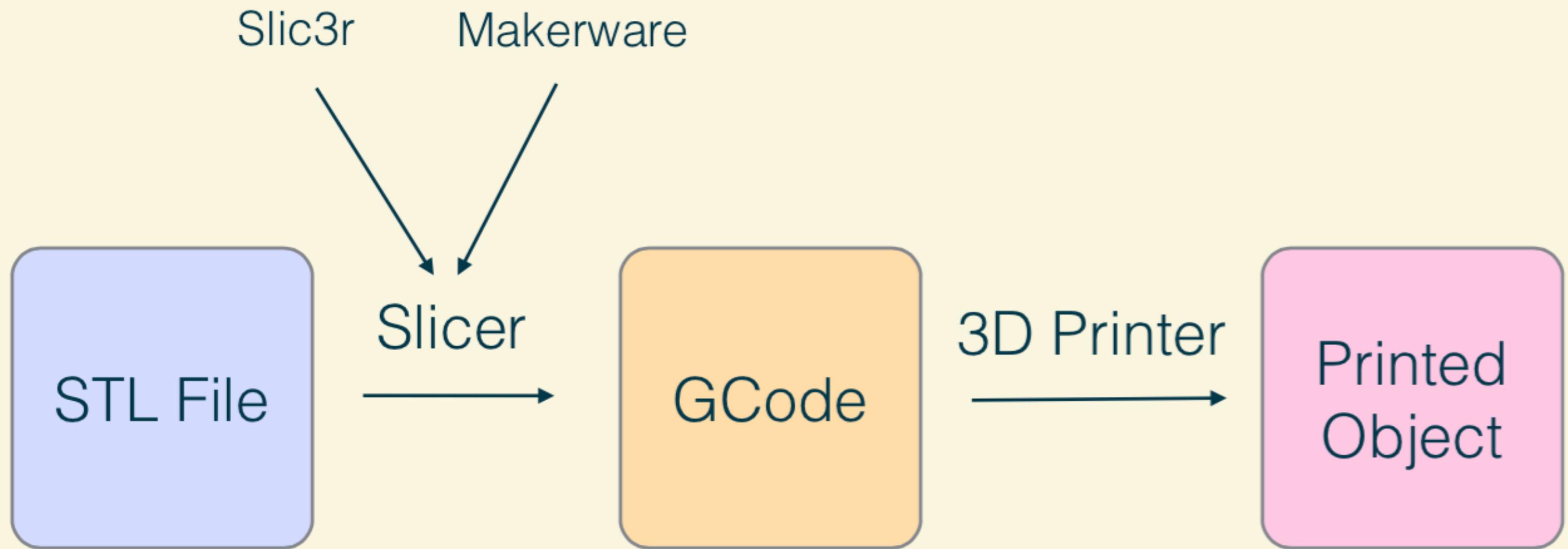
A Brief History

- . 1989 - S. Scott Crump patents FDM
- . 2007 - RepRap Darwin released
- . 2009 - FDM Patent expires
- . 2009 - MakerBot releases Cupcake CNC
- . 2012 - > 50 consumer level 3D printers

What's currently out there?

- . Printrbot Simple (metal version) - \$600
- . Lulbot TAZ4 (seen at this conf) - \$2200

How do they operate?

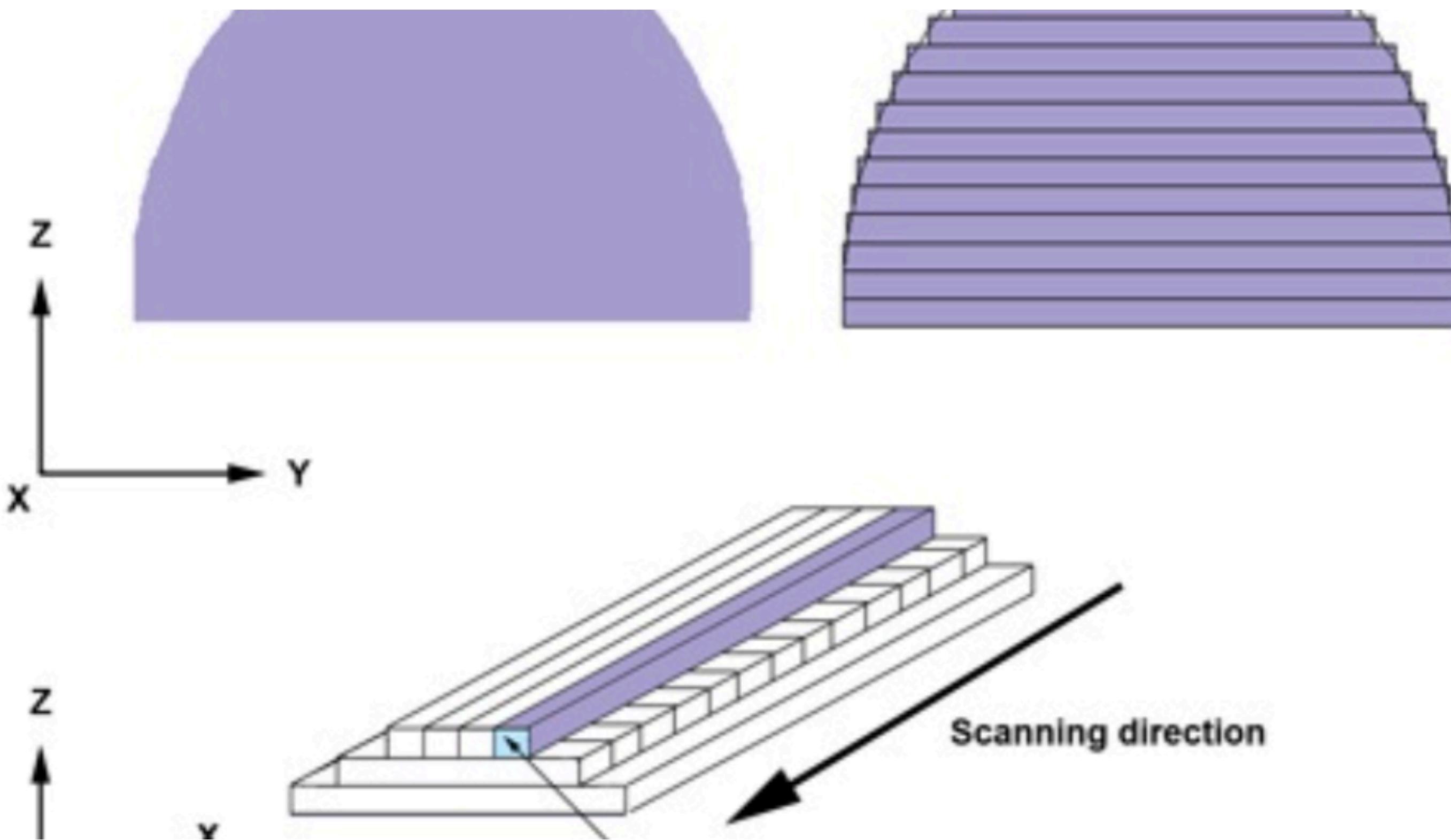


What is a slicer?

How does slicing work?

Slicing characteristics

- . Layer Height - thickness of each plastic layer
- . Infill %: How solid the object will be
- . Shells: The outside layer of plastic
- . Retraction: Distance to pull plastic back



G-code

Wat?

A small sample

- . G0 X12 ; rapid Move to X = 12
- . M106 S127 ; turn fan on 50% speed
- . M106 S0 ; turn fan off
- . G28Y ; Move y-axis to home position
- . M27 ; report status of SD card print

How do I make models to print?

Search Thingiverse.com

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- . Requires no modeling skills!
- . Lots of robot parts available

Use a 3D modeling package

Tinkercad.com

- . Free!
- . OSX, Windows Linux
- . Very ideal for 3D modeling beginners
- . Created specifically for 3D printing
- . Hooks into 3D printing API's

OpenSCAD

- . Free!
- . OSX, Windows Linux
- . It's not a traditional 3D modeler
- . Designed more for programmer types
- . Parametric

We will print your stuff!

print.robotsconf.com

Come and see us!



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