Makerspace Technology @ the Library

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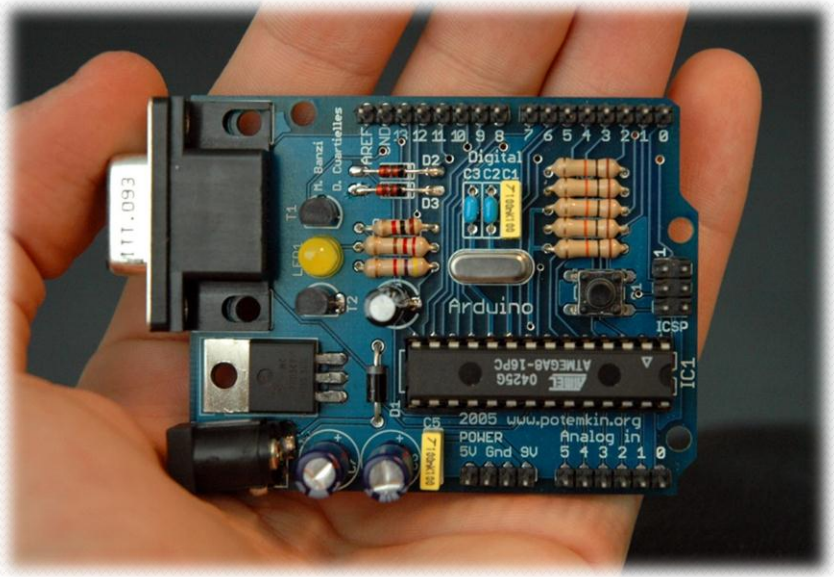
Agenda

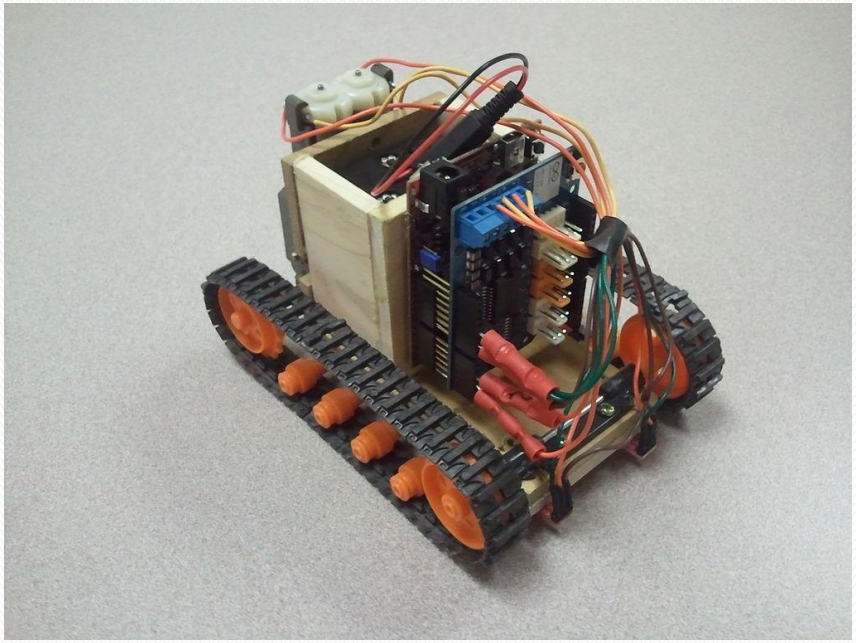
- What is the Arduino?
- What is 3D Printing?
- Introducing: Shapeoko
- How are these implemented in the library?
- How does this tie in?

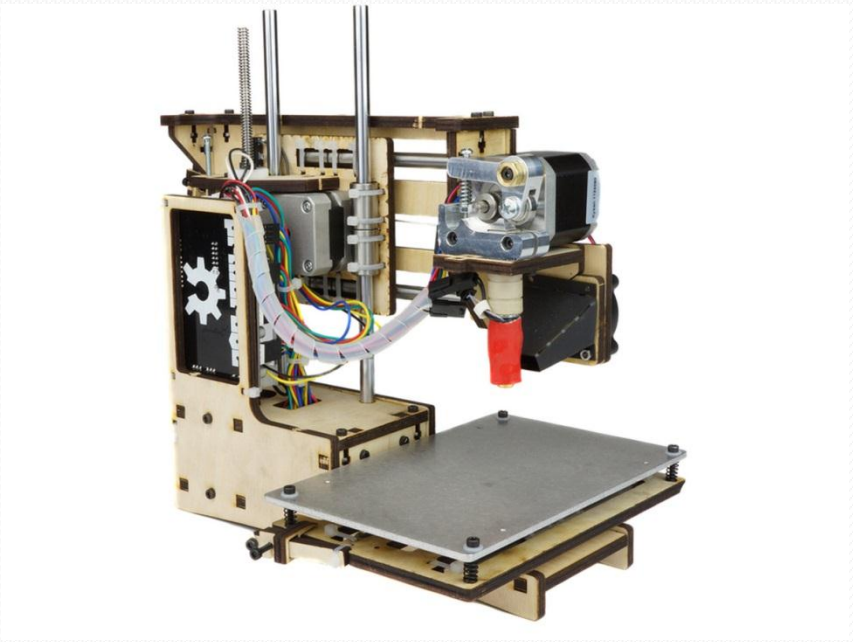
Introducing the Arduino



- Uses a simple programming language to:
  - Send and Receive data
  - Handle variables
  - Carry out complex instructions

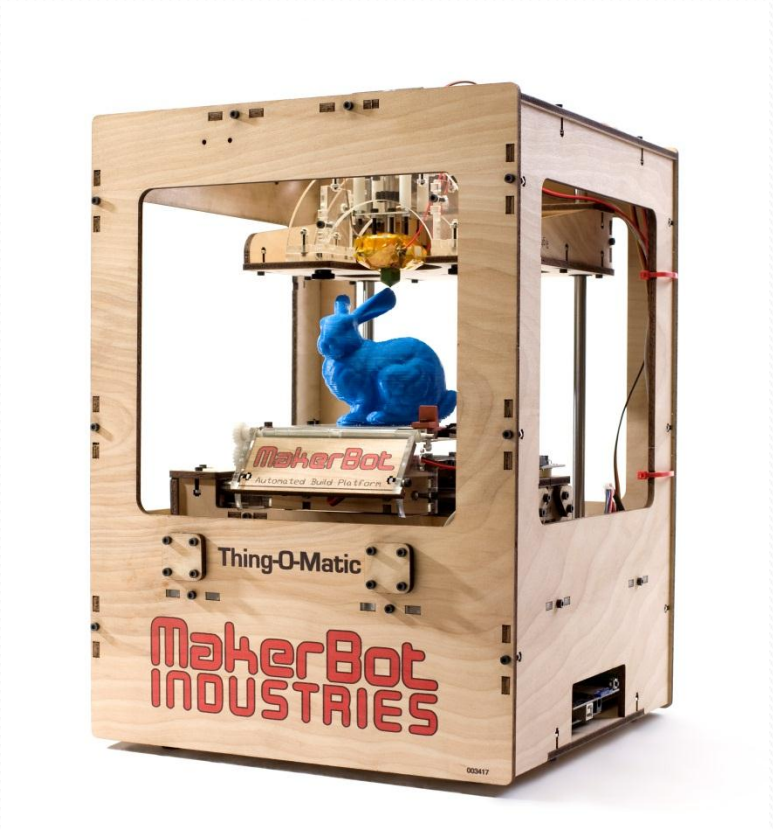
Examples of Arduino Applications





3D Printing

- Additive Manufacturing
  - Inkjet meets glue gun meets CAD
- Uses melted plastic to produce layers of material
- Produces physical object from a 3D model



Costs

Printer

- Ready to go - $2500 and up
- Self Assembled $400 - $750
- Software maximizes best use of material

Material

- ABS - $50/kg
- PLA - $65/kg
- Specialties Available
  - Glow in the dark
  - Flexible
  - Dissolvable
- Software tells you weight of item BEFORE printing

Videos to See

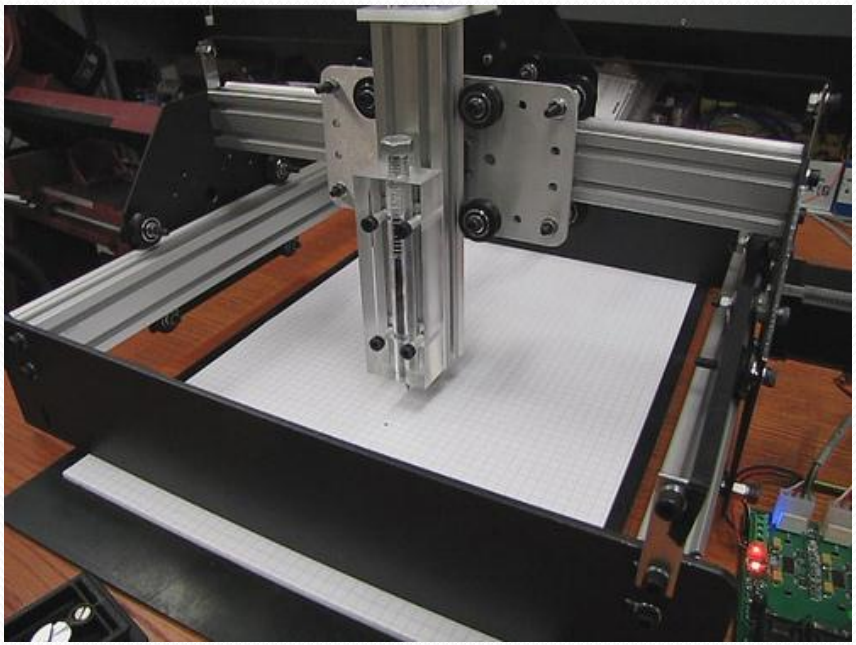
- Makerbot Robohand Video

http://youtu.be/WT3772yhroo

CBS News Story on Robohand

http://youtu.be/FGSo_I86_lQ

Shapeoko



- CNC
  - **computer numerical control**
- Operates in three axes
- Basis for 3D printers
- Can have multiple tools attached
- Can also activate and deactivate tool

Use in your library

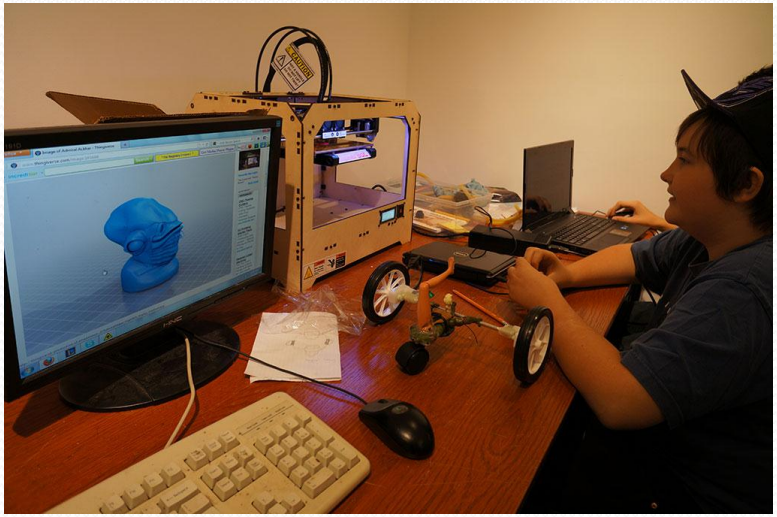
Tulsa City-County Library Makerspaces

westchester LIBRARY SYSTEM
Empowering libraries. Empowering communities.

Makerspaces

For Children and Adults

- Exploration of creativity
- Education in
  - Engineering
  - 3D modeling
  - Architecture
  - History
    - Smithsonian



Blog.ponoko.com

Things already in libraries

University of East London

- Gaming
  - Minecraft
- 3D Editing / Printing
  - Blender
  - Tinker Cad
- Programming
  - Scratch

How does this tie in?

- STEM / STEAM
  - Science
  - Technology
  - Engineering
  - *Arts*
  - Mathematics