

Engineers of Catan

Group 8

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ECE 445

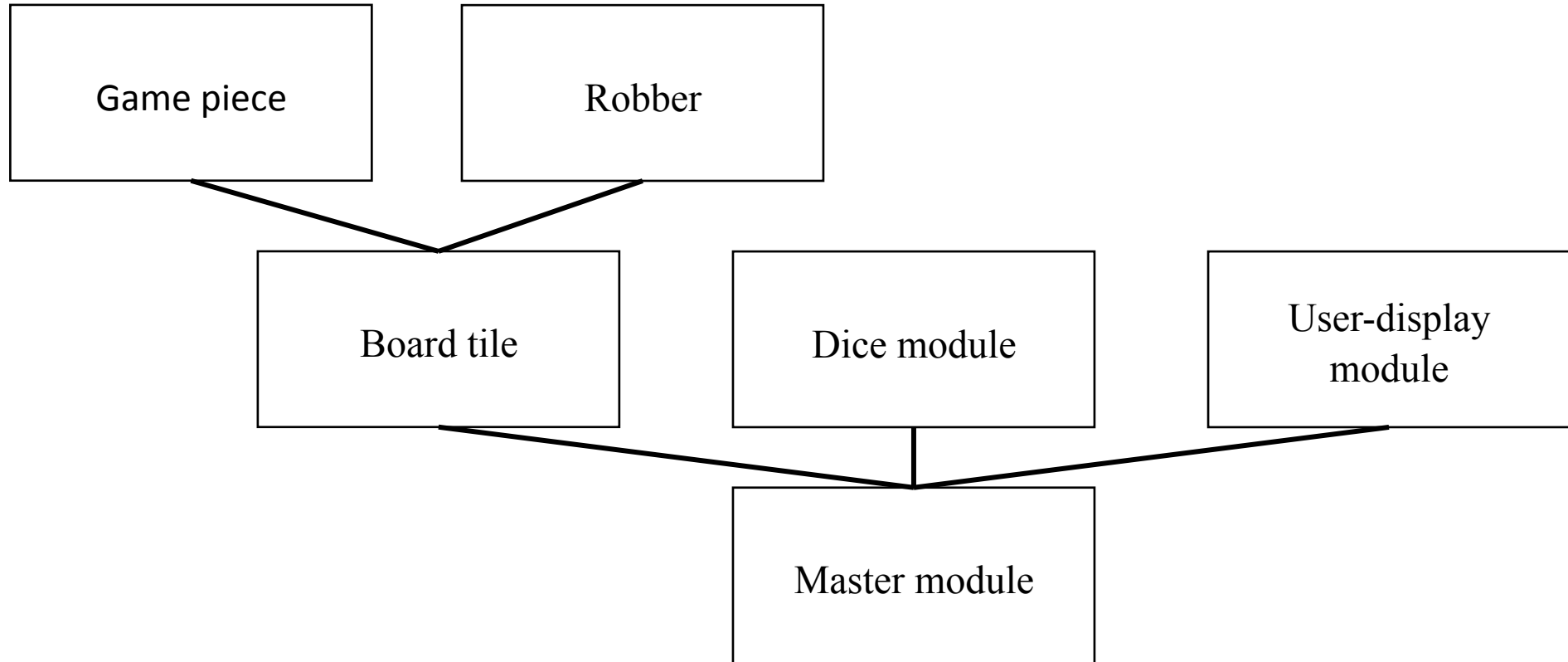
April 29, 2013

Introduction

- Electronic “Settlers of Catan” board game
 - Faster gameplay
 - Faster initial game setup
 - No missed resources during distribution
- Why?
 - Nothing similar available
 - Unique challenges
 - Piece detection
 - Board design
 - Game's reconfigurable layout and pieces

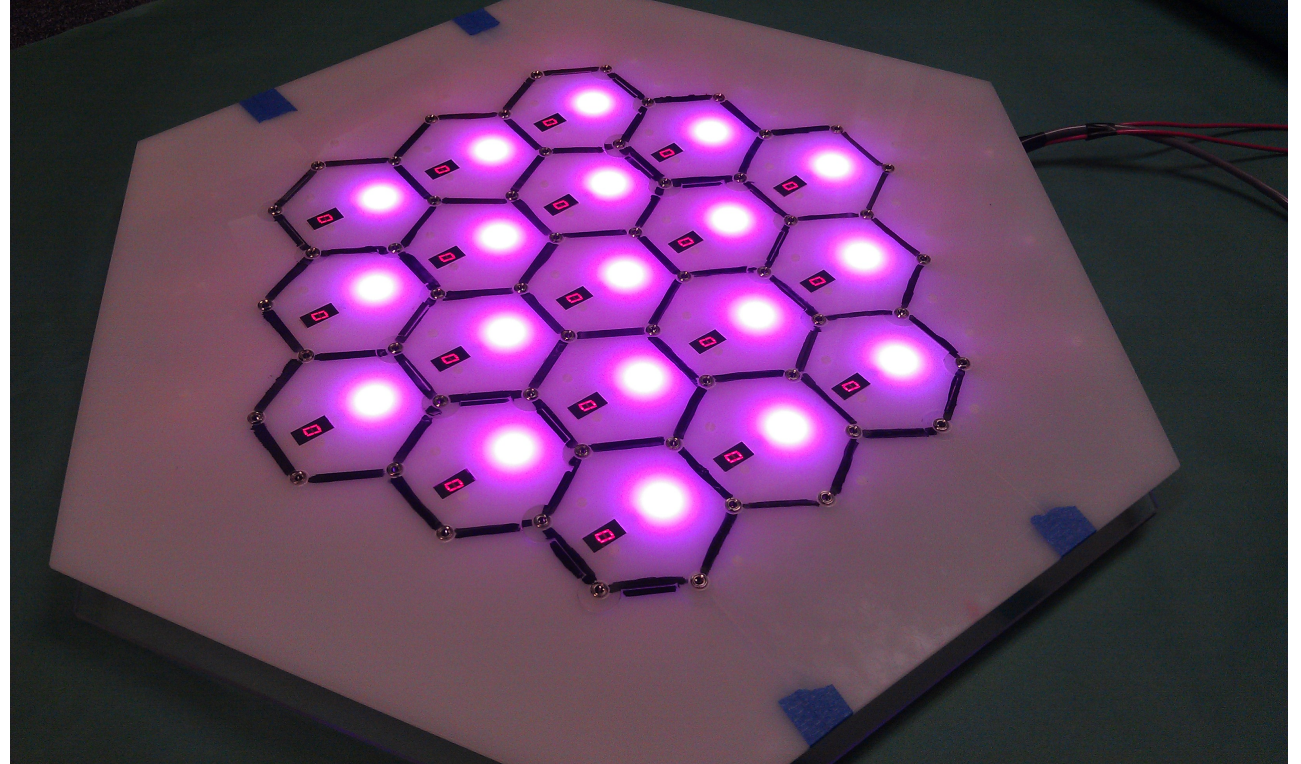


Original Design



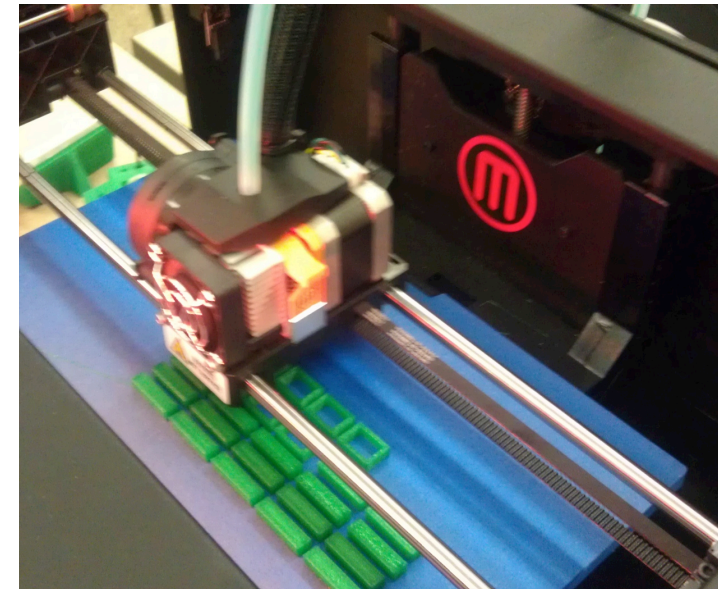
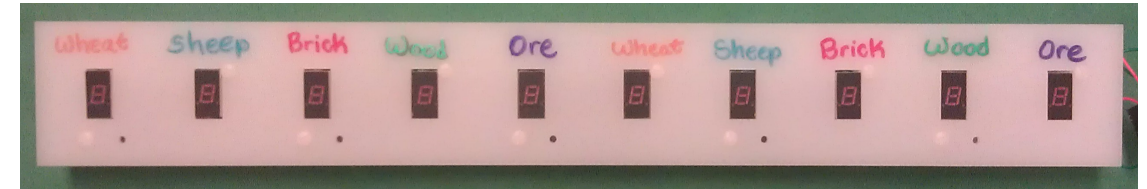
Passed All Requirements

- I²C
- Hall effect sensors
- Audio jacks
- RGB LEDs
- 7-segment displays
- Durable



Making & Special Thanks

- Offhand suggestion – Joe Shim
- Artistic considerations – Sarah Adams
- PCB
 - Prototype – Breadboards
 - Design – Eagle
 - Manufacture – ECE Parts Shop, esp. Mark Smart
- AutoCAD
 - Board base – ECE Machine Shop
 - Playing surface & frames – CU Community Fab Lab
- Pieces – MakerLab



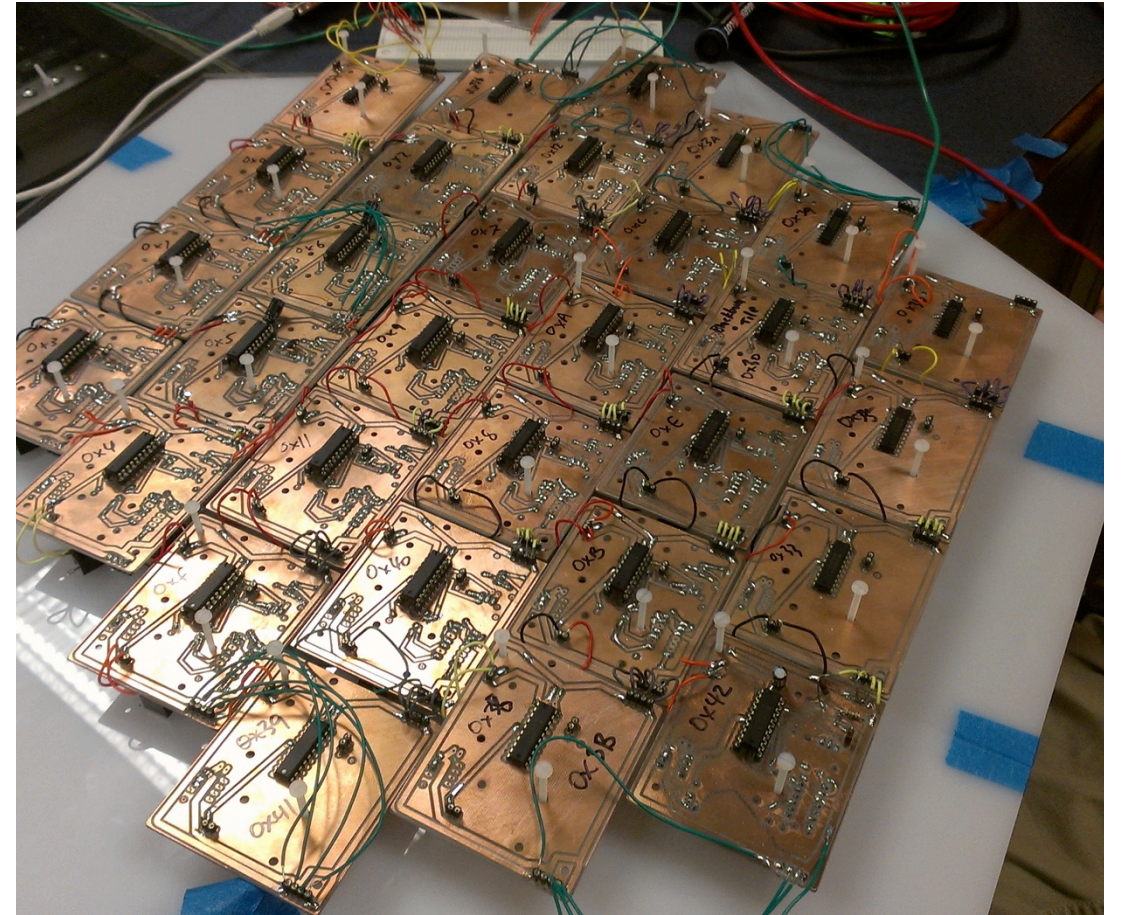
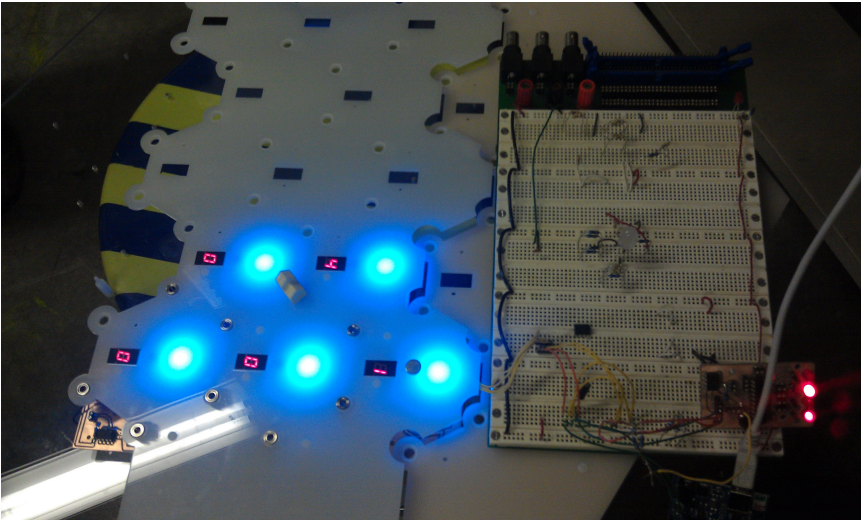
Testing & Debugging

- Continuity testing
- Soldering
- Plugged in



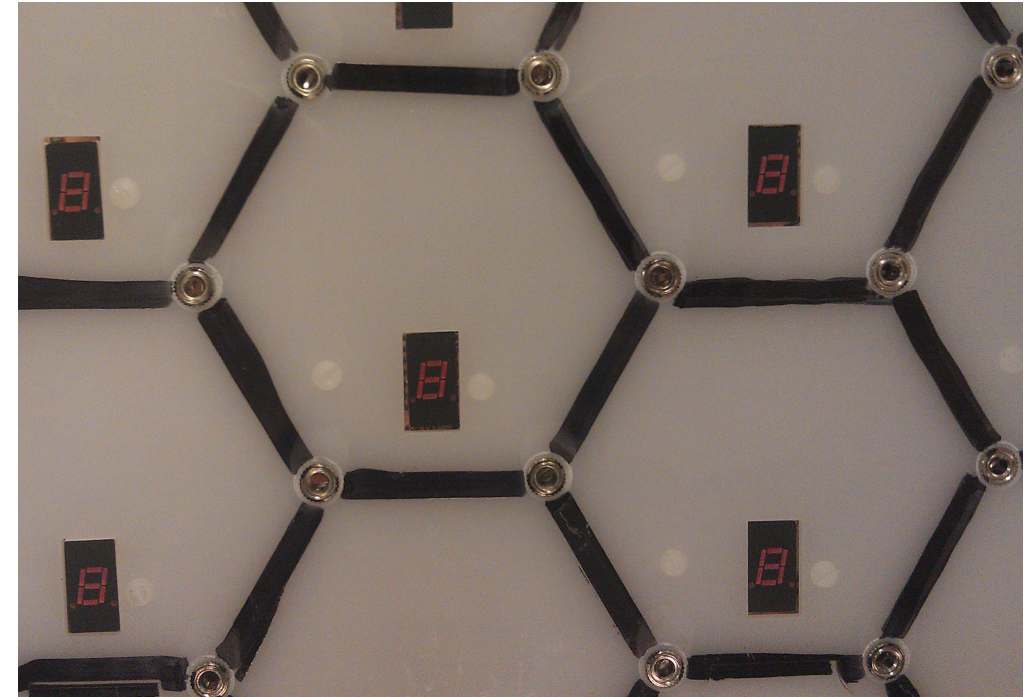
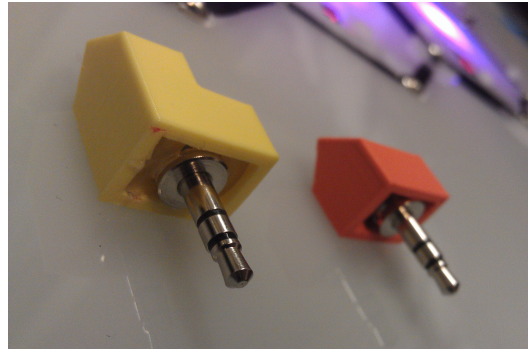
Challenges

- Assemble & debug on large scale
- Troubleshoot after assembly



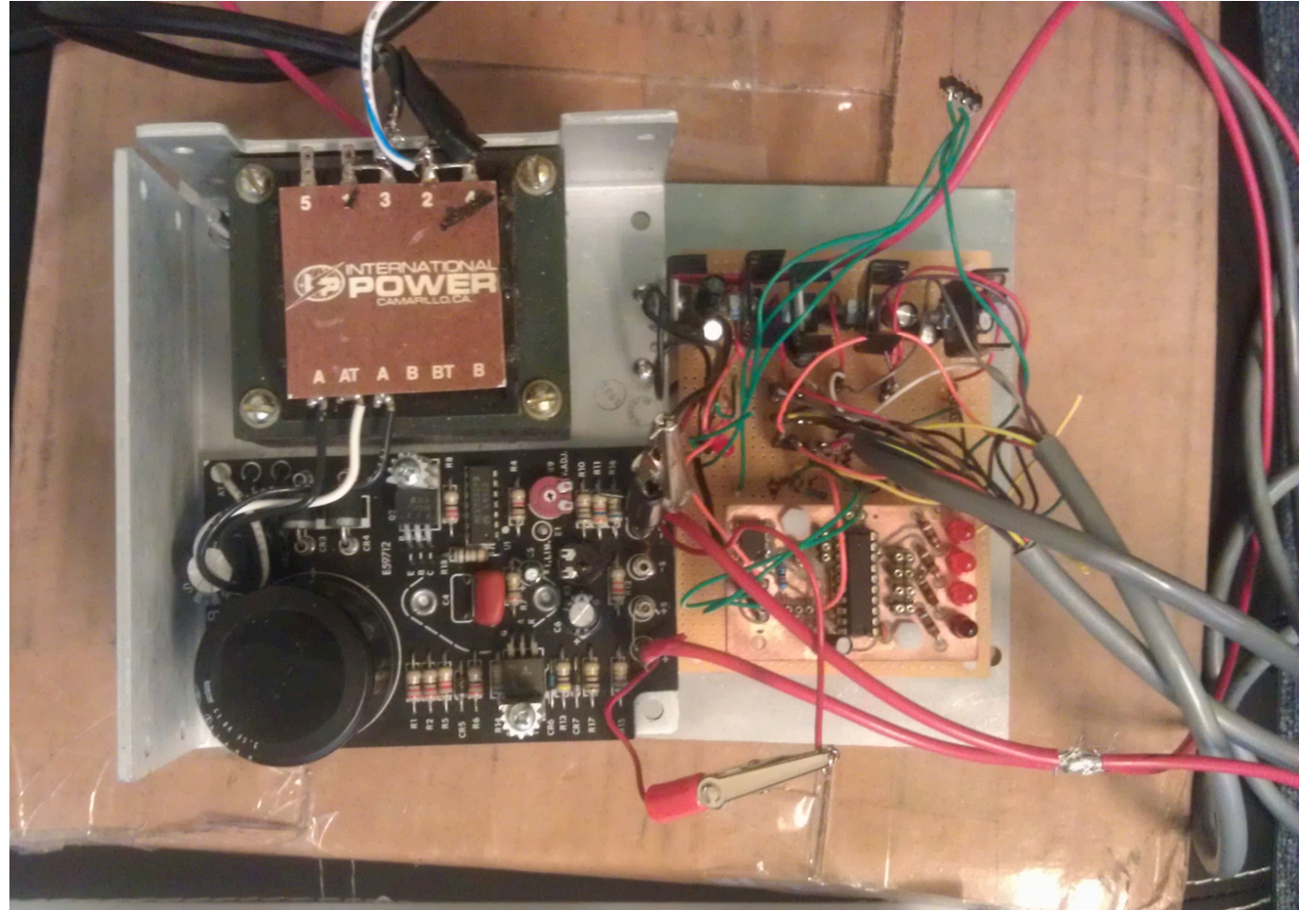
Successes

- Piece detection
 - Easy to assemble
 - Accurate
 - Durable
- Hall effect sensors
 - Easy to assemble
 - Reliable
 - Detect through top
- Fit & finish



Ethical Concerns

- Copyright
- Safety
 - Small pieces
 - Wires
 - Power supply



Further Work

- Finish and refine software
- More powerful master
 - Customize games
 - Internet
 - Social network



Questions



We are both graduating this Spring!