Team 3:

From Paper to Braille

Takondwa Kakusa, David Kusterer, Nick Miller, and Andrew Repp

Concept of Operations

◇ What is our project?

- A network-based image to Braille converter

◇ What are we trying to accomplish?
- To make it easier for visually impaired people to get Braille translations of written materials
- To allow the user to create unique braille texts in low volume and at a reasonable unit cost

◇ Why is this idea novel and worth pursuing?
- While services like this exist, our methodology will
  - reduce production time and costs
  - Increase flexibility

System Diagram

Network Connection Mechanisms

Rest

◇ Used in communicating with both the server and the OctoPrint Pi

RabbitMQ

◇ Text confirmation messages
◇ Status updates from 3D printer

Google API

◇ Conversion from pictures to text

OctoPrint

◇ Manage Communication to and from the 3D printer

Testable Requirements

1. We must be able to accurately extract the text from the captured image using the Google Vision API.

2. Server RPi must generate an STL file which describes a 3D model of the desired Braille based on the input text.

3. The server RPi must command the OctoPrint RPi to carry out all of the actions necessary to accurately print the .stl file using OctoPrint's REST API.

Team Member Roles

TK: Android App

David: Text to braille

Andrew: braille to .stl
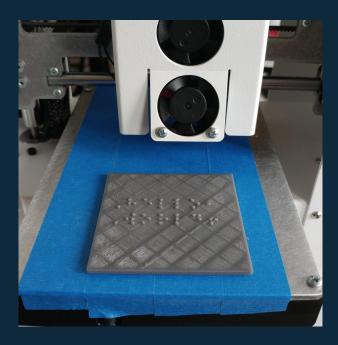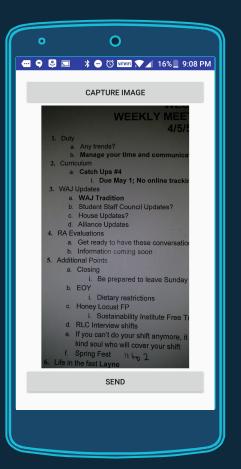
Nick: .stl to 3D printed translation

Project Schedule

Task	Week 1			Week 2			Week 3			Week 4			Week 5			Week 6			Week 7		
			24	27	29	31	3	5	7	10	12	14	17	19	21	24	26	28	1	3	5
Project Proposal																					
Android app w/ Camera																					
Create Braille Struct																					
Get 3D Printer w/Octoprint																					
Android image to text																					
Text to Braille struct																					
Braille list to .stl file																					
Beta Build																					
App / Server communication																					
Text to .stl integration																					
.stl from server to Octoprint																					
Final integration																					
Testing																					
Final Demonstration																					

Legend:
- Everyone
- Nick
- TK
- Andrew
- David

Completed So Far:

CAPTURE IMAGE

WEEKLY MEET
4/5/5

1. Duty
   a. Any trends?
   b. **Manage your time and communica**
2. Curriculum
   a. **Catch Ups #4**
      i. **Due May 1; No online tracki**
3. WAJ Updates
   a. **WAJ Tradition**
   b. Student Staff Council Updates?
   c. House Updates?
   d. Alliance Updates
4. RA Evaluations
   a. Get ready to have these conversati
   b. Information coming soon
5. Additional Points
   a. Closing
      i. Be prepared to leave Sunday
   b. EOY
      i. Dietary restrictions
   c. Honey Locust FP
      i. Sustainability Institute Free T
   d. RLC Interview shifts
   e. If you can't do your shift anymore, it
      kind soul who will cover your shift
   f. Spring Fest   11 to 2
6. Life in the fast Layne

SEND

Questions?