The Problem

- Merck Laboratories currently labels each vial by hand.
- Having a scientist write on each vial is time consuming and produces highly variable results.
- Whenever an unidentifiable vial is found, testing is stopped, and a team is brought in to help identify the contents and author. These stand downs cost Merck thousands in time lost.
- The QR Team has been tasked with creating an inventory system that will mitigate these stand downs.

The Pivot

We started this project in September with a RFID based solution, but our project scope was shifted in October to a more QR code based solution. The new project required a digital inventory of the information on the vials and a user interface to scan in vial data. The team concluded that Merck would produce the stickers for the vials in house. So, a custom QR code printer was purchased, sample vial labels were generated using dummy data. Soon, the team had the web-app created and started working on the redesigning labels for the vials. With the vials being so small, all the space on the label is crucial and must be filled with only necessary information.

The algorithm takes 6 points on the label, and interpolates, creating the final output image. It then isolates the part of the label with the most words and crops the image accordingly. After the image has been isolated, we can use a text parsing algorithm, extract the product name and compare it to an existing database of possible products.

Acknowledgments

A very special thank you to our Merck mentors Dr. Terri Bui and Jonathan Fine. We would also like to thank Dr. Ward, Margaret Betz, and the entire Data Mine staff for their continuous support.