

Team #6: Progress Report

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Point of Sale Grocery Cart

The major issue with today's system is the unnecessary stop at the checkout line. Cashiers are paid to take the items out of the cart, scan, and put them right back into the cart. A lot of the shoppers time being wasted, adds to congestion near the store's exit, and adds cost for the store, which has to pay cashiers. Our goal is to create a grocery cart checkout system

Phone Application

Completed:

The phone application is currently able to perform all critical functions requested by our sponsor. The application has 3 buttons that all perform a separate function. The first button, "Scan Item", opens the activity for scanning UPC codes. The activity opens the phones camera and displays a box with a line through it. If you center the line on a bar code, it reads the barcode. The application sends the UPC code to the server. The server sends back the name and price of the item scanned. The item and price is automatically added to the customers shopping cart. The second button, "shopping cart", allows user to view all the items in their cart. Within the shopping cart menu the user can view their subtotal displayed at the top of the page. A user can hold their finger on an item and they will be given the option to remove the item from their shopping list. The third button "checkout" allows the users to pay for the items within their cart. The user is given the option to either checkout using their credit card or to checkout using PayPal.

Working on:

We would like to add a fourth button that allows users to key in a code for items that do not have UPC codes like produce. Also we are working to make the app look very visually pleasing and for it to be very easy to use.

Scale

Completed:

We have built a two-load cell scale circuit. Both load cells are connected to an instrumentation amplifier, which gives us a readable output voltage. We have written code for an Arduino Yun that takes the voltage and converts it to a reading in grams. The Arduino Yun is a microcontroller with built in wireless capabilities. We have the Yun set up so that it wirelessly transmits the weight readings to the server. The code is also able to tare out any weight that is on the scale. This allows us to zero out the scale after an item has been placed in the cart. Instead of adding the voltage prior to putting it into the Yun, we have the code digitally sum up the weight readings from the scales to determine a final weight. We found that the slightest change in input voltage to our circuit could make drastic changes to the scales output voltage. We put in a 5V voltage regulator circuit to address this issue.

Working on:

We are currently trying to calibrate the scale for optimal accuracy.

Website

Completed:

We have set up a server that is able to send and receive information from our Yun and phone application. The server is able to take UPC codes and search through its database to find a match. If a match is found, all the information needed for the item including name, price, and weight can be gathered. The server compares the expected weight value with the value being received from the Yun. If the weight matches, the information is sent to the phone application.

Working on:

We are currently working on getting the application, Yun, and server to talk flawlessly. This involves the addition of timing statements added to both the application and the server.

Website

Completed:

We have set up our team website. Currently the website contains information about the project, the team, and gives an introduction to the project.

Working on:

We are currently adding a button that will take the user to a page with all of the documents the team has written throughout the semester.

Deliverables

Working on:

We are currently working on our team poster, final paper, and final presentation.

All items listed in “working on” with the exception of deliverables plan to be completed by Monday, November 24th