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Jayme Lee
Brandon Ray
Kyle Ingram
What is Fridgenius?

Fridgenius is a high tech fridge accessory which allows users to track and maintain information regarding their food items.
Imagine...

- Housemates share the same fridge
- Full of assorted food items
- Two people claim the same item
- Whose is it?
- Fridgenius knows!
User Process

- Enroll a personal ID via the fingerprint scanner
- Log in to account after identification is validated
- Add items to account using a barcode scanner
- Measurements can be made with the Bluetooth scale
- All records/information viewed with the LCD screen
Board Layout

PCB Artwork  PCB Assembly
• Jonathan Calderon – Wifi/LCD
• Jayme Lee – Power/Fingerprint Scanner
• Brandon Ray – Memory/Barcode Scanner
• Kyle Ingram – Bluetooth Module/Scale
Fingerprint Scanner

ADH GT-511C3 Fingerprint Scanner

- UART communication
- Sensor takes three pictures per enrollment
- Groups all pictures into one large string of data

Properties

- 1:1 verification and 1:N identification
- Enrolls up to 20 users
Memory

Micron MT48LC32M16A2P SDRAM

- 512Mb (32M X 16)
- Used to store data
  - LCD images
  - Fingerprint enrollments
  - Food item information
Bluetooth Scale/Module

Bluetooth Module RN41XVC-I/RM

- Short range wireless communication
- Used to receive measurements from the Bluetooth scale

Reflex NutriCrystal Scale

- Can weigh up to 5000g
- Has a range of 33 feet
Barcode Scanner

Honeywell MS5145 Eclipse

- Scan an item by its barcode
- Add item to users account

Properties

- DB9 – UART interface
- Interrupt driven
LCD Touchscreen

NHD-5.0-800480TF LCD Display

- View food items and user information
- User interface for system

Properties

- 5.0” capacitive TFT
- 24-bit RGB interface
- 800x480 pixels
Wifi Module RN171XVW-I/RM

- Uses wireless connection to pull data from online resources
- **Used for future implementation**
Future Implementations

- Recipe suggestions
- User profile music playlist
- Audio streaming
- Digital receipt scanner
- Freshness tracker
- Shelf load sensors
Problems Faced

- Shipping delays
- Pin connections and wrong traces
- Time to implement all subsystems
- One group member withdrew from class
Applicable Advice

- Plan ahead
- Use debugging tools
- Avoid unforced errors
- Seek support from the TA
Special Thanks To...

- Professor Johnson
- Eric Goodman
- ECE Department
- ECE Shop
- Our Sponsors
Fridgenius

Questions?