Microcontroller Based Inventory Management System for Refrigerator

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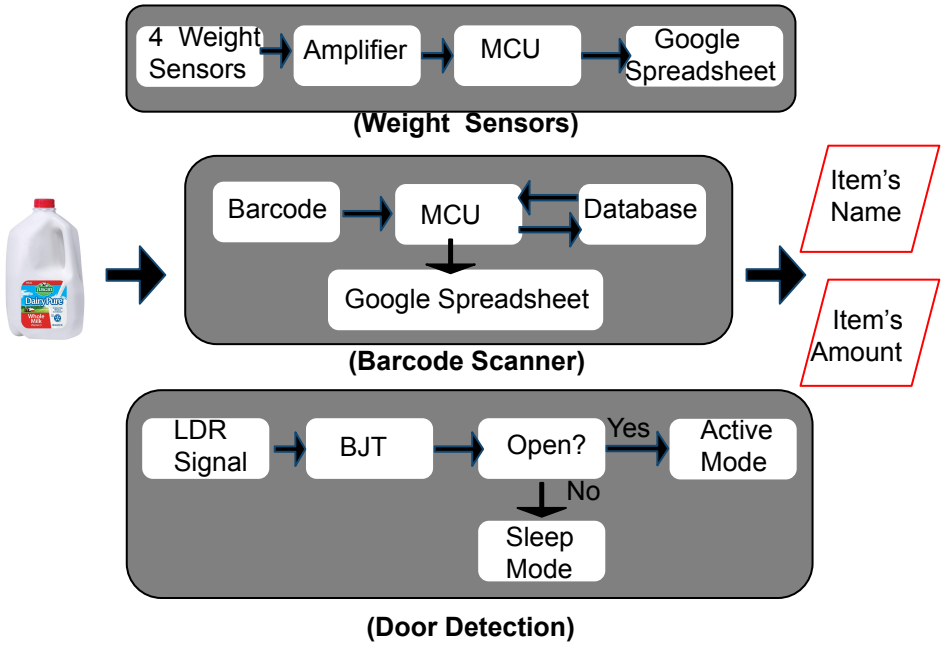
Objective

Implement a device that can be integrated into a "regular" refrigerator to convert it to a "smart" refrigerator. Give users the ability to check what they have in their fridges as well as the amount left in each item.

Background Information

Often a consumer will go to a grocery store and leave without purchasing what they originally set out to buy. The HMS Smart Refrigerator is a microcontroller based device which keeps track of what items are inside a consumer's refrigerator as well as a quantifiable amount of what is left. This information is stored online and can be accessed through a smartphone application, allowing the user to remember why they went to the store in the first place.

Technical Approach



Results

Pictures of system, App Screenshots, Picture of System in Refrigerator Item Determination

Conclusions and Future Work

No duplicate items
Can only tell weight, not percentage
Cannot use weight inside refrigerator currently
Future Iterations could include RFID scanning or QR barcodes to access more information

Learning Experience

Overcame and dealt with cost, space, and time constraints

References

Microelektron, instructables, temboo, sparkfun and telerik

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