Mini Vending Machine

By: Abraham Kuruvila

SID: 861150563

Email: akuru003@ucr.edu

Project Overview:

A user will make a selection of what they want from an Android app. A Bluetooth module will communicate the user input to the microcontroller. The user then inserts the proper amount of money into the coin inserter. If the proper amount was inserted, checked by sensors, the system will dispense the appropriate selection using motors to spin a coil that sends out the selection.

List of Complexities:

Bluetooth module: This will be used to communicate between the Android app and the microcontroller. This module is important for getting the user input to the system.

Motors: I will be using motors to move a coil that will move the selections. The motors are important for getting the selection out to the user once they have paid.

Coin sensor: I will be using a sensor to check for coin input. The sensor is important for making sure the proper amount has been inserted so the system can dispense the wanted selection.

Timeline for milestones:

End of week 7: Have basic wiring done for both microcontrollers (USART) and plan pinouts.

End of week 8: Have Android app built communicating with Bluetooth module.

End of week 9: Have coin inserter mechanism working.

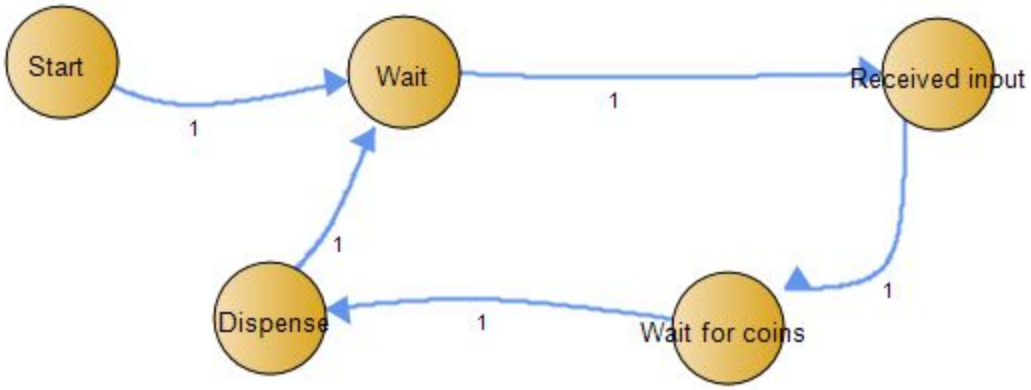
End of week 10: Have motors working to dispense selection, finalizing and putting the project together.

These milestones are not tentative and are based on when my parts arrive.

Use of USART/SPI for communication:

My project will be using USART for communication between microcontrollers. One microcontroller will be getting the inputs from the Bluetooth module and checking if the proper amount of money was inserted. The other microcontroller will get a signal through USART about when to run the appropriate motors to dispense the selection.

High level FSM illustration of your system:


Start
Wait
Received input
Dispense
Wait for coins
1
1
1
1
1