

The vision:

So I have a fat cat and a skinny cat. Invariably, the fat cat eats some of the skinny cats food. Both of the cats have an RFID tag in their necks. What I want to do is basically scan my cats when they go to the food bowl. Based on what cat it is, only a certain food bowl will open.

Functional requirements:

At a minimum, I will have an RFID sensor that will produce results based on what cat is being scanned. In the case of the classroom demo, I will use an RFID tag from a book for testing. Based on the RFID tag scanned, it will trigger specific events. Such events include closing and opening the lid on a food bowl. The bowl is going to be the "C1Auto Feeder" (<http://www.justliners.com/catfeeders.htm>). I intend on reusing the motor parts of the existing cat bowl so I will not need to purchase a motor. Simply dropping the lid from the open position will be used to close the food bowl. By doing this, the possibility of a motor closing tight on a cat limb or generally causing harm will be limited.



The RFID Sensor that I will be using for the project will be the RI-STU-MRD1 (Series 2000 Micro Reader). From what I have read, then has a 5" range for scanning. Because of this, I will adapt a mechanism from PVC piping to hold the sensor above the cat so that they can properly be scanned.



If power is connected to any device near the bowl, it has to be grounded at a minimum. I do not want to have a fried cat. The bowl will also not be allowed to contain water. To prevent the bowl's possible used as a water bowl, I will drill a hole into the bottom to make it useless for water.

Non-functional requirements:

When first training the cat on opening the bowl, I will have to leave the lid open to get it used to the bowl. Once it is used to eating from the bowl, I will enable the mechanical parts of the bowl. It is assumed the fact the cat can smell the food will eventually draw it close to the feeding bowl when closed.

Parts Needed:

RI-STU-MRD1 (Series 2000 Micro Reader).....	\$71.48
C1Auto Feeder.....	\$23.98
Wires and Breadboard are to be provided free...	\$0
Tubing, Tape, Glue, Misc Parts.....	\$25
Total Cost.....	\$120.49

Interfacing:

It is assumed there is a small motor in the cat food bowl. I will wire that to the Zilog Board and turn it off and on depending on what the sensor tells the Zilog DevKit. The Sensor will be connected to the Zilog DevKit via a serial connection.