



CATaLOG

An RFID Cat Tracker

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The Grand Plan

Wanted to see when our two new cats went in and out of the house

- 1) Attach an RFID tag to each of them
- 2) Build something that could read it
- 3) Make it tell something when it sees one



What I get out of it



- ◎ It's a fun and interesting project to work on
- ◎ Something involving unpredictable things
- ◎ Combines two things I'm passionate about

What the cats get out of it



- ⦿ RFID bling
- ⦿ Increased safety
 - We know if they've been out too long
 - We know if they're not going out at all
- ⦿ Don't have to be shut in when we're away

Why I'm telling you this



- ⊙ Hoping other people try something similar
- ⊙ Could do with ideas for improving it
- ⊙ Motivated me to complete it

The stars - Bobbin



The stars - Tuffin



Boatcat



is entering rough seas

ICANHASCHEEZBURGER.COM

A little bit about RFID tags



- ⦿ Little chip which stores a number
- ⦿ Chip attached to an antenna
- ⦿ Reader's radio signal powers chip enough to respond with the number stored on it



The main idea



- ⊙ RFID tag glued to cat's nametag
- ⊙ Reader by the catflap
- ⊙ Microcontroller talking to remote server
- ⊙ Switches to manually set a cat in or out

Testing the RFID reader



The screenshot shows a Linux desktop environment with a terminal window and a GUI application. The terminal window displays the following code and output:

```
#ti = 0 # tuffin in boole
ser = serial.Serial('/dev/

while 1:
    if ser.inWaiting()
        s = ser.re
        if s.strip
            if

^Cpeter@woodstock:~$
peter@woodstock:~$ python se
Saw Tuffin come in
Saw Bobbin come in
Saw Bobbin go out
Saw Tuffin go out
Saw Bobbin come in
Saw Tuffin come in
Saw Bobbin go out
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Saw Bobbin go out
Saw Bobbin come in
Saw Bobbin go out
Saw Bobbin come in
Saw Bobbin go out
Saw Tuffin come in
Saw Bobbin come in
Saw Tuffin go out
ser.close()

def __init__(self):
    "sertestgui.py" 135L, 3764C written
```

The GUI application, titled "Cats!", displays two images. The left image shows a black and white cat sitting on a table next to a clear plastic storage bin. The right image shows a black cat sitting on a red surface, with a large red prohibition sign (a circle with a diagonal slash) overlaid on it, indicating that this image is not the one being displayed by the program.

The terminal window also shows the following code:

```
self.DisplayTuffinImage('/home/peter/images/notuffin.jpg')
else:
    print 'Saw Tuffin come in'
    self.DisplayTuffinImage('/home/peter/images/tuffin.jpg')

self.st = time.time() #set a flag for de-cat-balance
self.ti = not self.ti
break
```

Building the system



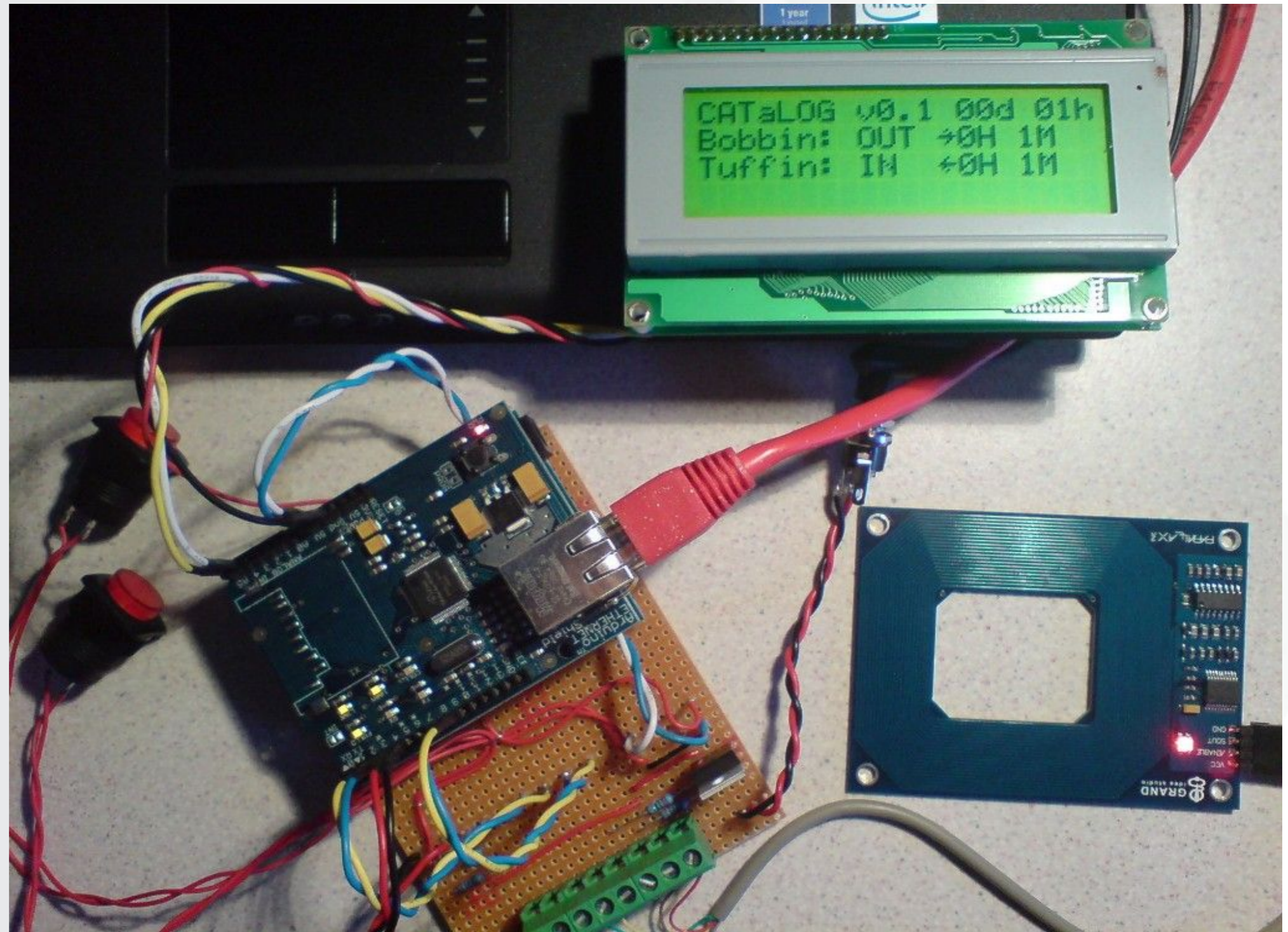
“Incompatible is what two compatible pieces of hardware become when you try to connect them together”

- Unknown

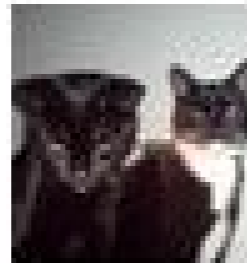
A cheaper solution?



The setup



It talks to twitter...



BobbinAndTuffin Bobbin has gone IN
less than a minute ago from web

<http://twitter.com/BobbinAndTuffin>

...to us...

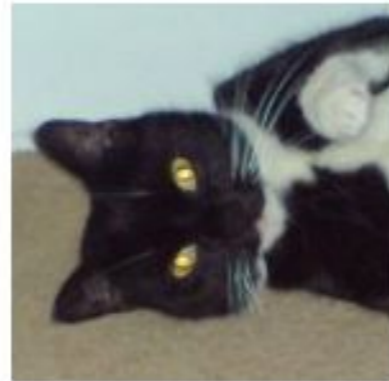


...and the web



CATaLOG

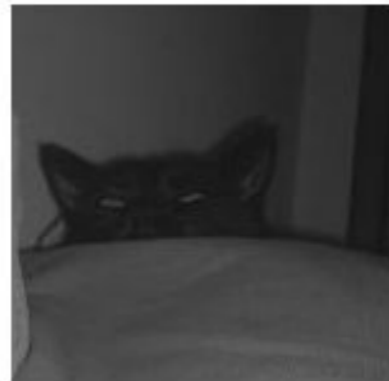
Current Cat Status



Bobbin

in

Last seen at **22:33** on **Thursday**
Been in for **0 minutes**.



Tuffin

out

Last seen at **10:16** on **Thursday**
Been out for **12 hours** and **17 minutes**.

Data from the CATaLOG project

Improvements



- ⦿ Infra-red beam each side of the cat flap
- ⦿ Makes sure a cat has actually gone through
- ⦿ Can tell if a cat gets half way and reverses

Pros and cons



- ◎ Pros

- We can now see if our cats are in or out

- ◎ Cons

- I now view my cats as users

Real world lessons



- ◎ If users break or can't use something I've designed or built, it's not their fault – it's mine.
- ◎ People only like to spend their free time working on or being part of something they enjoy

FIN and more information



Project Pages

<http://nermal.org/projects/catalog/>

CATaLOG status pages

<http://catalog.nermal.net>