

the orchidarium

a computer controlled orchid growing case

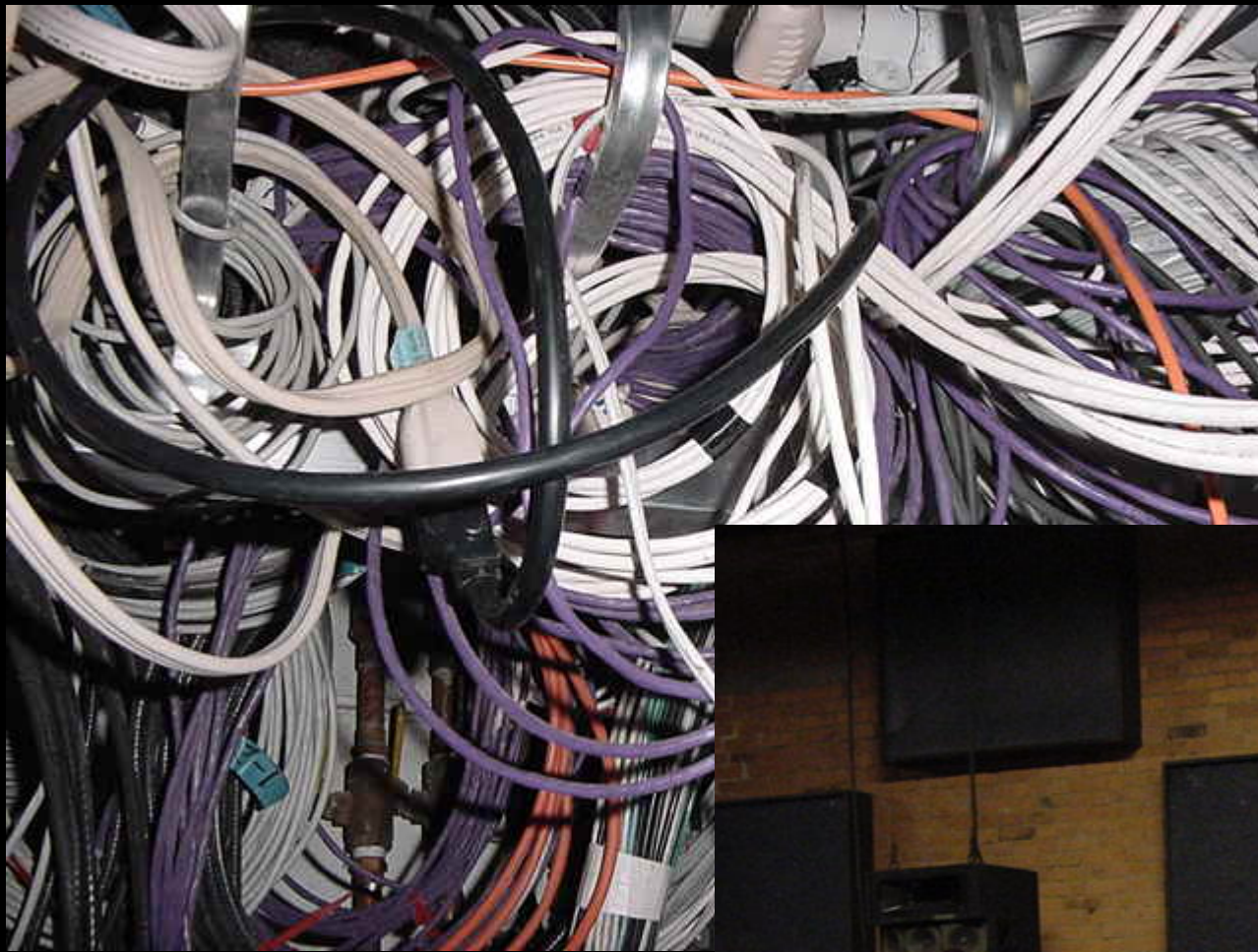


fabienne serriere <http://fabienne.us>

Internet of Things meetup, berlin, oct 23rd, 2013

how did you start?

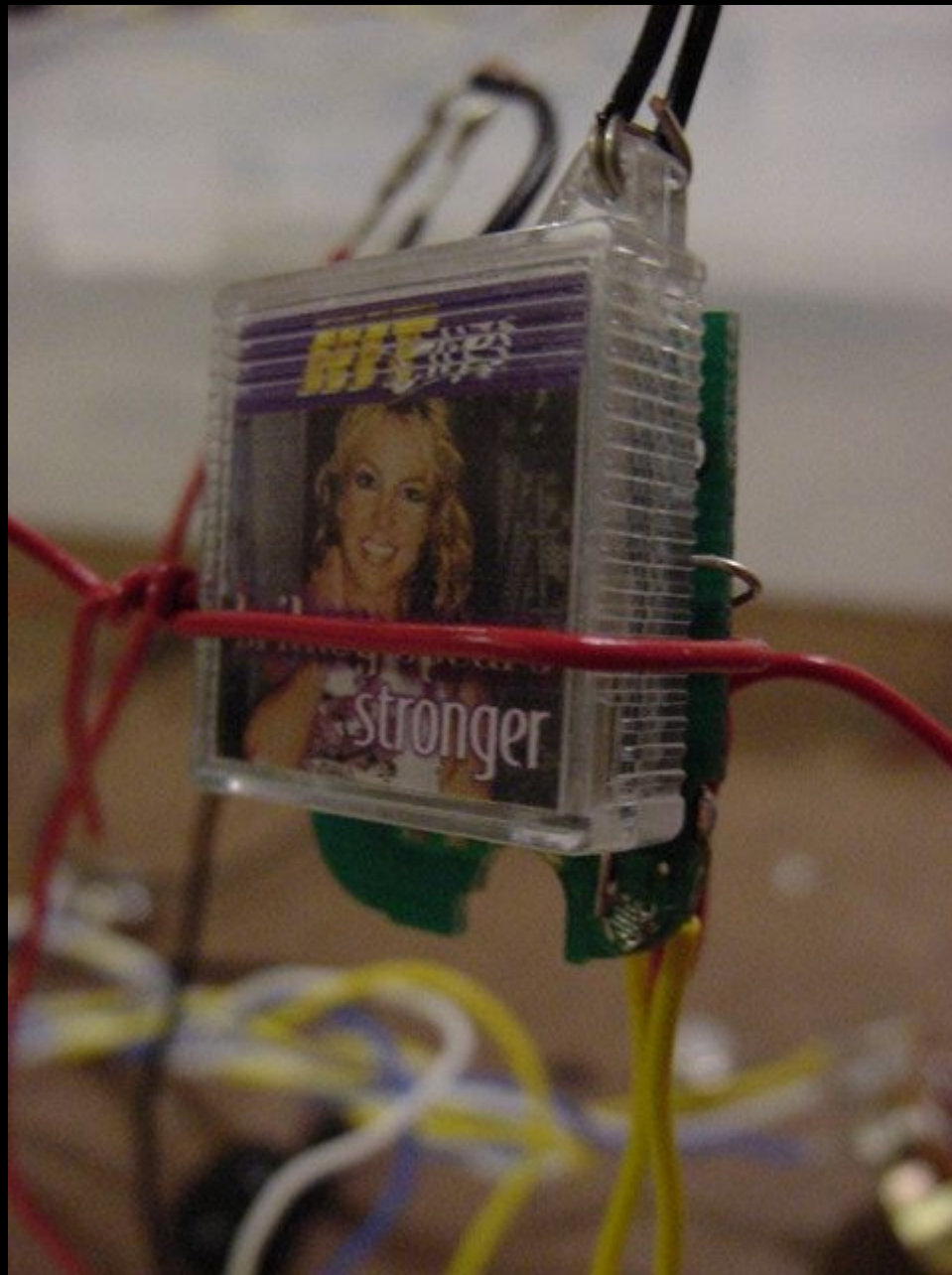
why are you a hardware/plant freak?



engine 27
nyc 2001



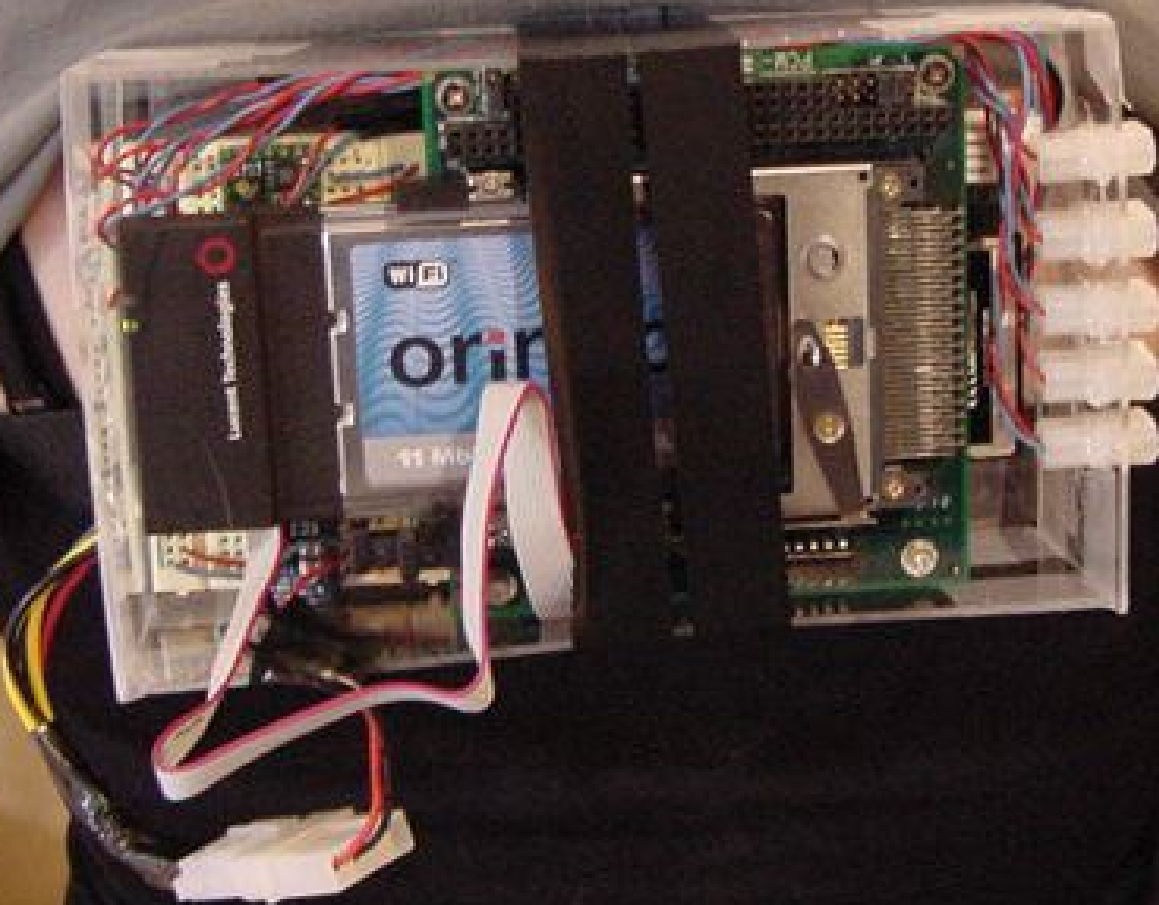
i took a physical computing course



NYC 2002



NYC 2002



NYC 2002





i found *nix

early 2003
installing my first
open source operating
system

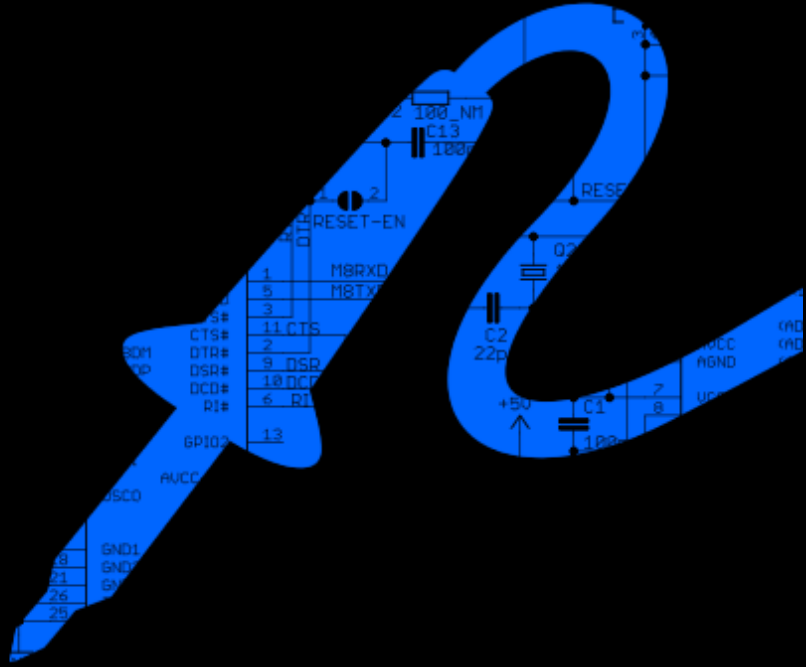
(at the time: redhat,
later: debian, ubuntu,
freebsd, openbsd,
netbsd, centos, redhat
gentoo, etc.)



i started writing free step by step how-to's for engadget.com and hackaday.com in 2005



this *Spiraea douglasii* has the common name “hardhack”
(photo taken in oregon in 2002 by me)



<http://hardhack.org>

hands-on hardware event
roughly once a year

hardhack.org
that hands-on-electronic thing.

28. & 29. may, berlin

what is the orchidarium?

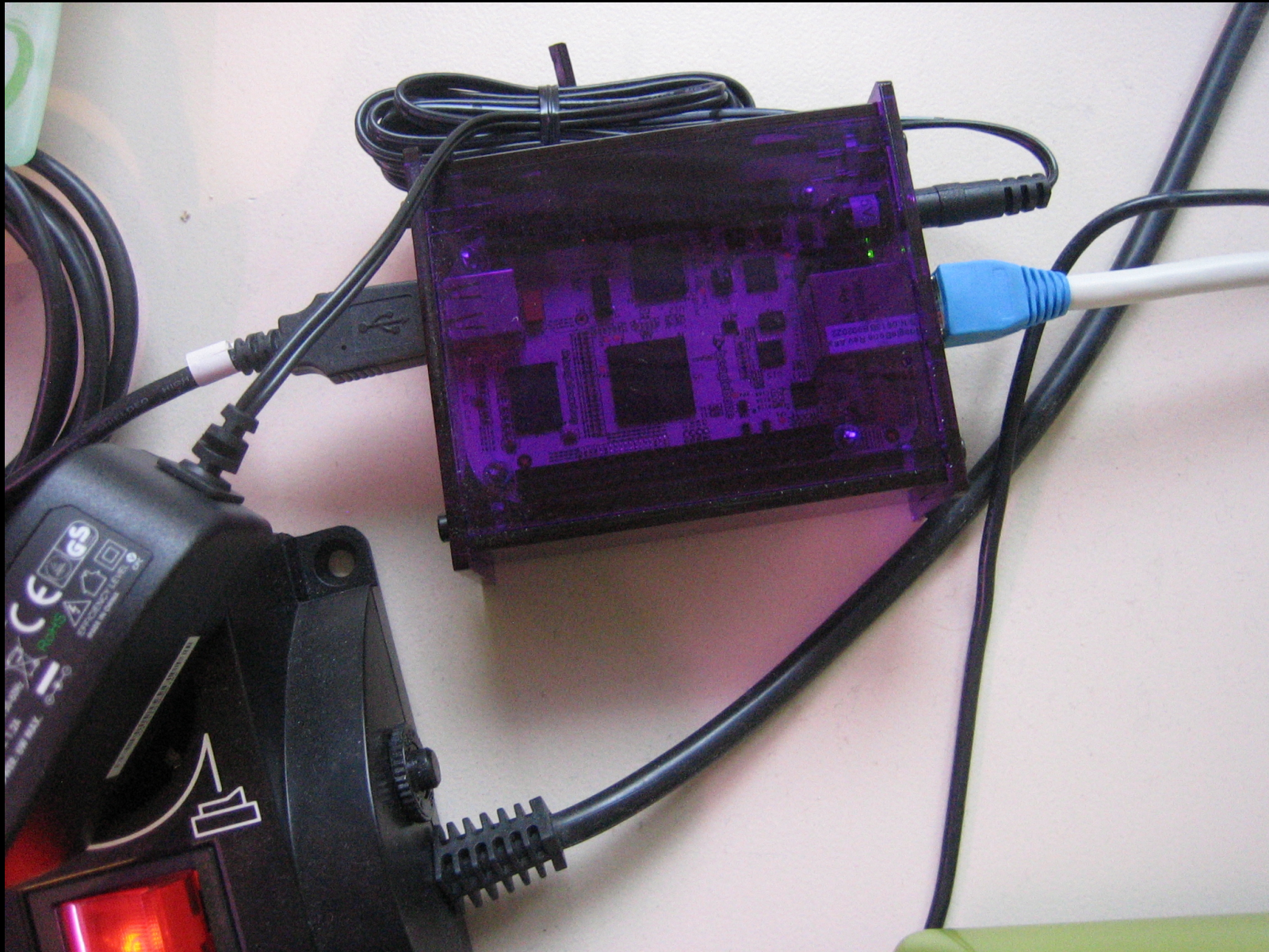


“just” a plant growing case :)

what is the orchidarium?

“just” a plant growing case :) (show video)

what is the orchidarium?



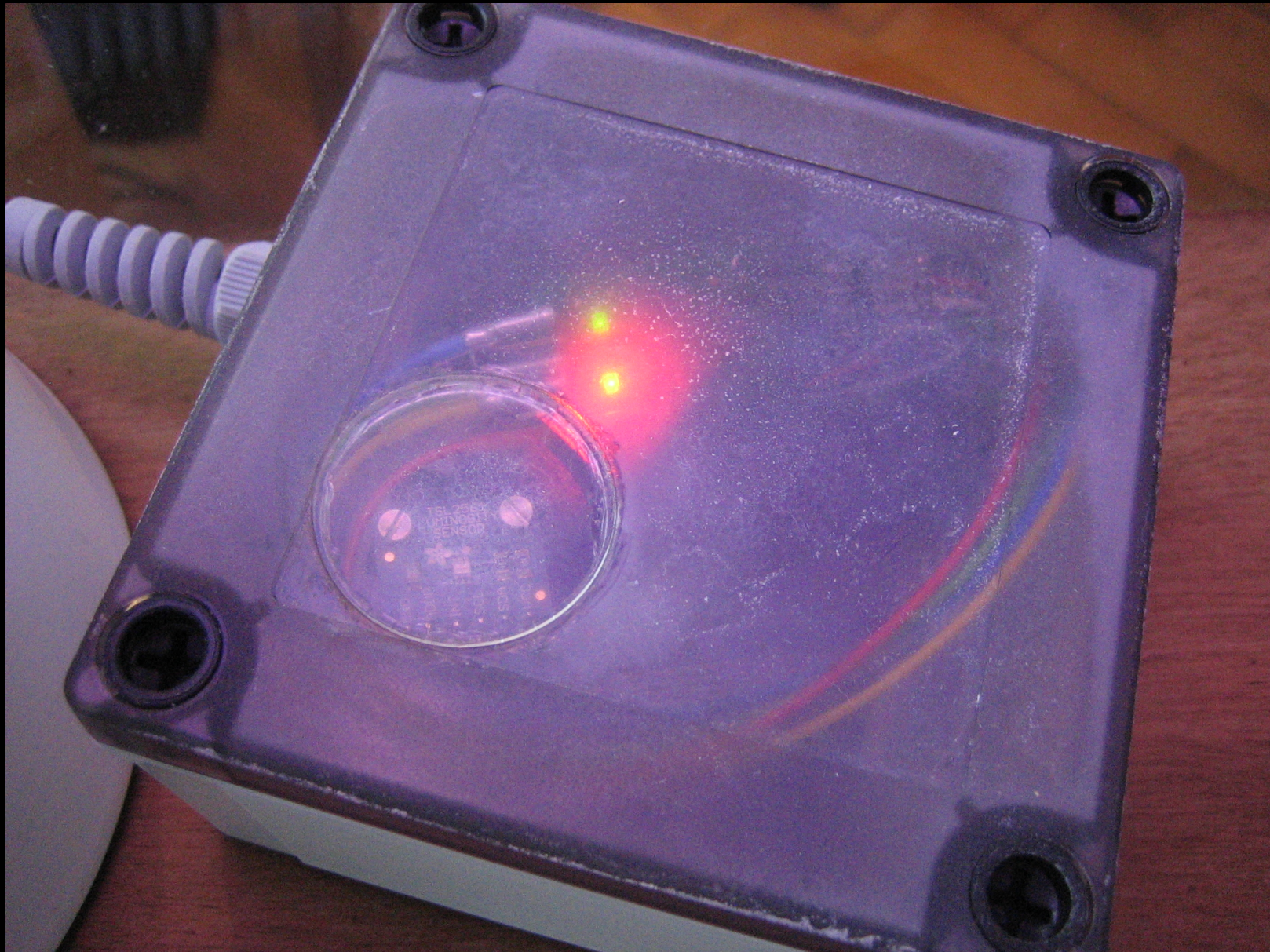
Beagle Bone: linux computer with AM335x 720MHz ARM processor, running debian

what is the orchidarium?



energenie: usb controllable power strip

what is the orchidarium?



sensors: light sensor, humidity and temperature sensor

what is the orchidarium?



sensors: light sensor, humidity and temperature sensor

software by @skytee on github

The screenshot shows a web browser window displaying the GitHub repository page for 'skytee/orchidarium'. The browser's address bar shows the URL 'https://github.com/skytee/orchidarium'. The repository page includes a search bar, navigation links for 'Explore', 'Features', 'Enterprise', and 'Blog', and buttons for 'Sign up' and 'Sign in'. The repository name 'skytee / orchidarium' is prominently displayed, along with statistics for stars (0) and forks (0). A summary bar indicates 21 commits, 1 branch, 0 releases, and 1 contributor. The current branch is 'master'. A commit history table lists recent changes, including 'Corrected typo.' and 'Update README.md'. The 'README.md' file is expanded, showing the title 'orchidarium' and a description: 'Code for a computer controlled orchidarium'. A bulleted list of features is provided: 'orcensors' (reads from sensors), 'scripts' (control and backup), 'webapp' (GUI), and 'crontab' (guess what). On the right side, there are links for 'Code', 'Issues', 'Pull Requests', 'Pulse', 'Graphs', and 'Network', along with a 'Clone in Desktop' and 'Download ZIP' button.

skytee/orchidarium · GitHub

GitHub This repository Search or type a command Explore Features Enterprise Blog Sign up Sign in

skytee / orchidarium ★ Star 0 🍴 Fork 0

Code for a computer controlled orchidarium <http://fbz.smugmug.com/keyword/orchidarium>

21 commits 1 branch 0 releases 1 contributor

branch: master orchidarium /

Corrected typo.

Thorsten Haas authored 3 months ago latest commit 88ae40e478

crontab	Added scripts and crontab file to repo.	3 months ago
orcensors	Added orcensors README.md	3 months ago
scripts	Added comment.	3 months ago
webapp	Corrected typo.	3 months ago
README.md	Update README.md	3 months ago

README.md

orchidarium

Code for a computer controlled orchidarium

- orcensors - reads from **HYT221** humidity/temperature and **TSL2561** illuminance sensors via **USB-i2c**
- scripts - simple helpers, i.e. control, graph and backup scripts
- webapp - GUI using [web.py](#)
- crontab - guess what

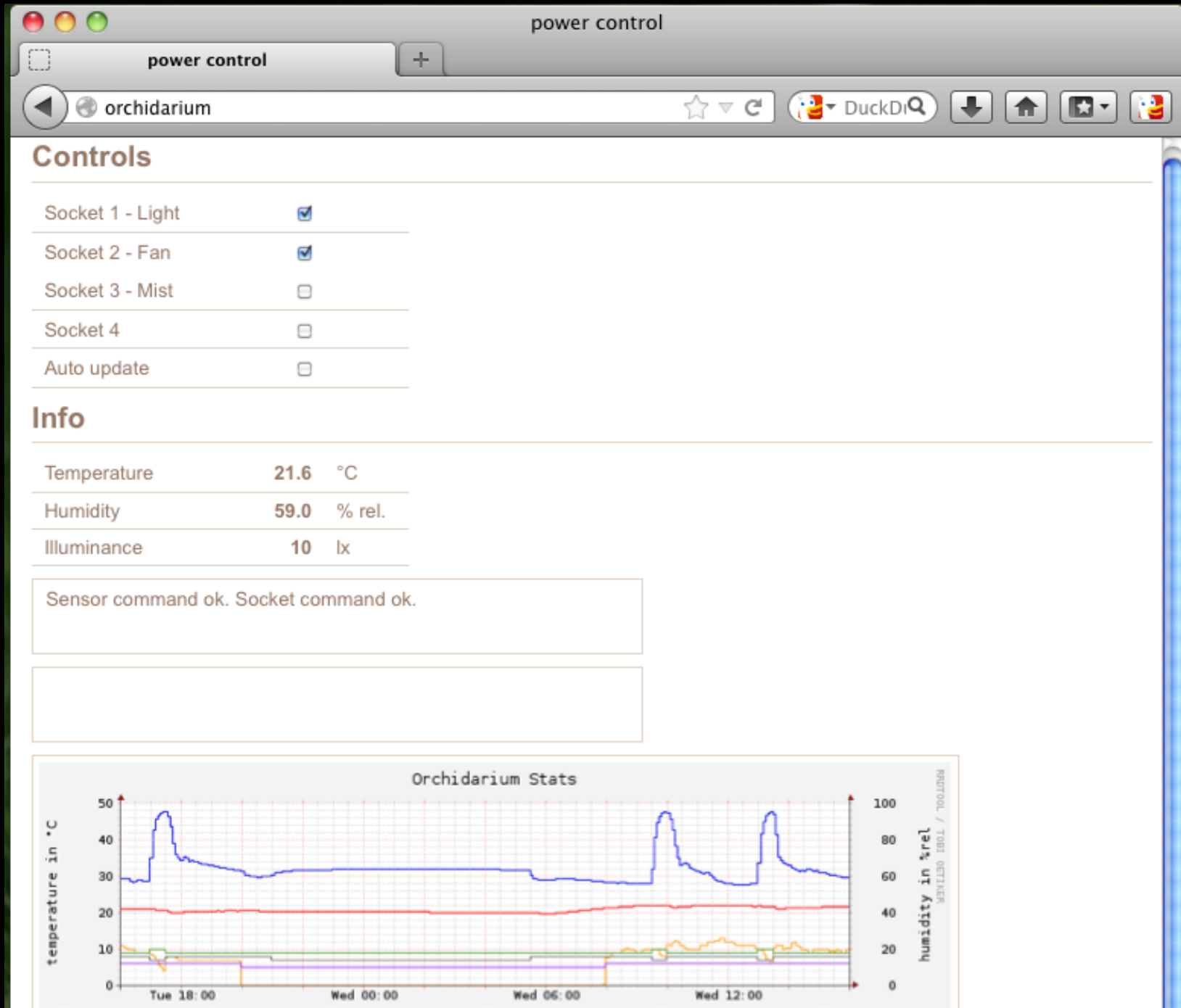
Code Issues 0 Pull Requests 0 Pulse Graphs Network

HTTPS clone URL <https://github.com/>

You can clone with **HTTPS**, or **Subversion**.

Clone in Desktop Download ZIP

including a webapp



and a crontab

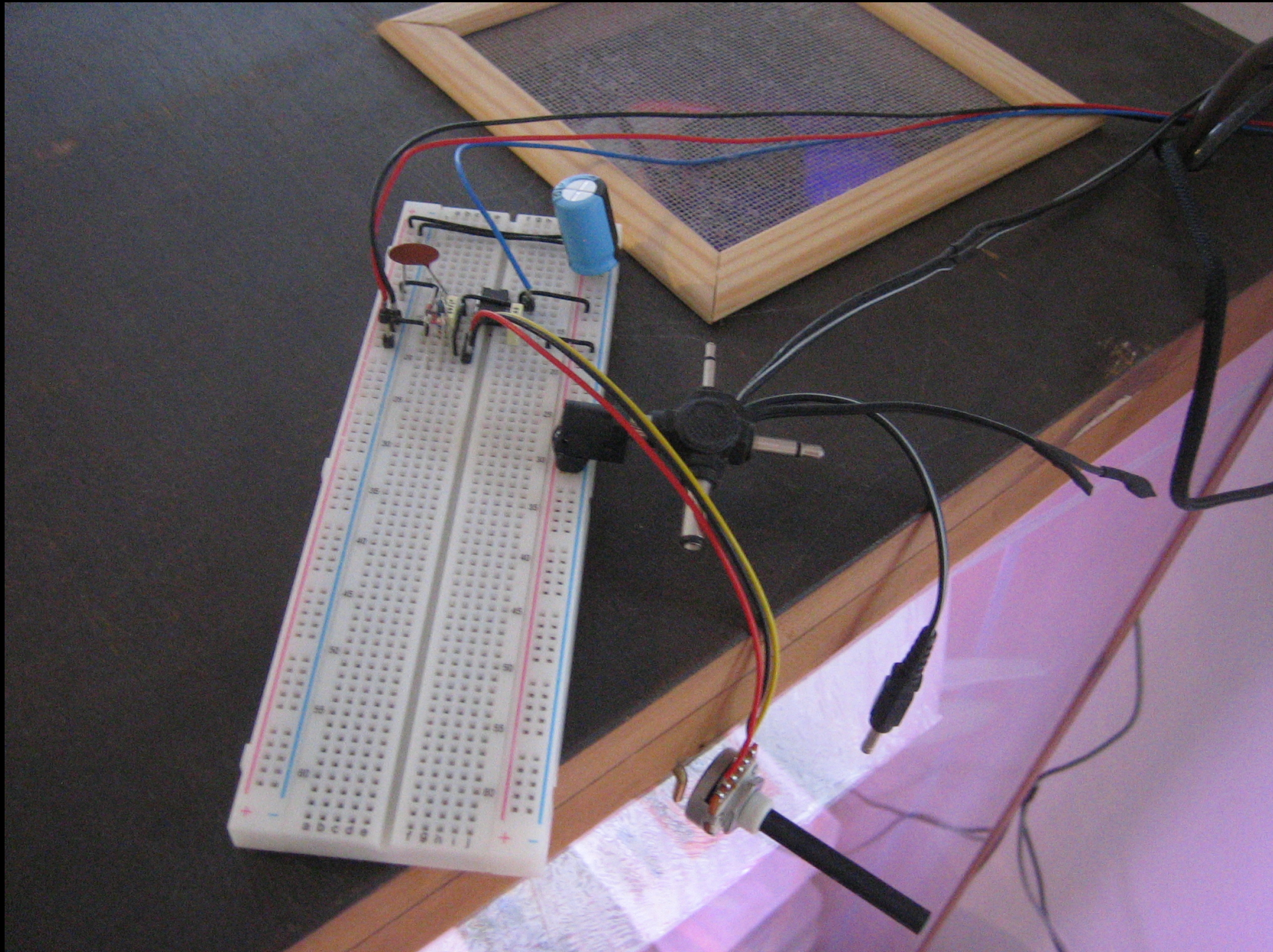
```
# /etc/cron.d/orcron
SHELL=/bin/sh
PATH=/usr/local/sbin:/usr/local/bin:/sbin:/bin:/usr/sbin:
/usr/bin
MAILTO=skytee@nospam

# socket1: light, socket2: fan, socket3: mist

# m h dom mon dow user  command
# light: 8:00-20:00
00 8 * * * thaas orchidarium.py --light on
00 20 * * * thaas orchidarium.py --light off
# fan: 5:30-21:00
30 5 * * * thaas orchidarium.py --fan on
00 21 * * * thaas orchidarium.py --fan off
# fan and mist: 9:30-10:00, 13:00-13:30 and 17:00-17:30
30 9 * * * thaas orchidarium.py --fan off --mist on
00 10 * * * thaas orchidarium.py --mist off --fan on
00 13 * * * thaas orchidarium.py --fan off --mist on
30 13 * * * thaas orchidarium.py --mist off --fan on
00 17 * * * thaas orchidarium.py --fan off --mist on
30 17 * * * thaas orchidarium.py --mist off --fan on

*/5 * * * * www-data orcgraph.sh
11 0 * * * www-data orcsavedata.sh
@weekly thaas echo | mail -s "Orchidarium - please
add water" skytee@nospam fabienne@nospam
```

what is the orchidarium?



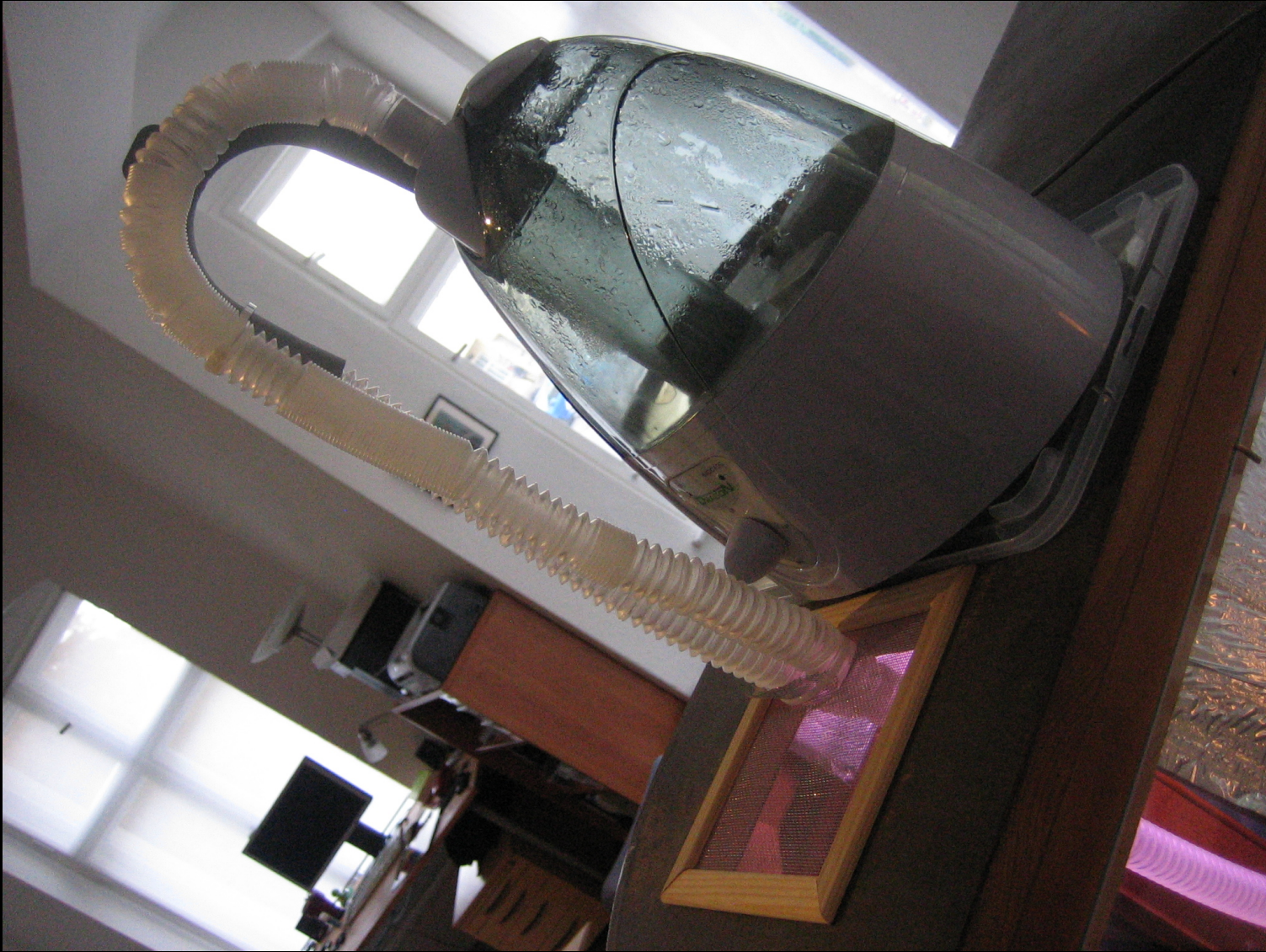
simple pwm circuit for manual fan speed control + fan

what is the orchidarium?



light: ccfl plant growing bulb from hardware store

what is the orchidarium?



watering system: ultrasonic mister

what is the orchidarium?



watering system: ultrasonic mister

what is the orchidarium?



watering system: ultrasonic mister



watering system: ultrasonic mister

what is the orchidarium?



NOT just a plant growing case :)

what is the orchidarium?



plant growing case: first native IPv6 device in our home!

but will it bloom?



ascocenda "princess mikasa blue" blooming
(ascocenda is a type of vanda aka a vandaceous orchid)

but will it bloom?



ascocenda "princess mikasa blue" blooming
(ascocenda is a type of vanda aka a vandaceous orchid)

documentation

wtfm: write the f***ing manual!

- not easy to do
- requires constant updates
- fight bit rot!!!

teh internetz = your friend

IM IN UR NETWERKZ



ARCHIVIN UR TAPEZ

resources for the orchidarium



<https://github.com/skytee/orchidarium>

<http://twitter.com/theorchidarium>

<http://fabienne.us>

<http://fbz.smugmug.com/keyword/orchidarium>

The image shows the back of a vintage beige computer case, likely an Apple II. A hand is resting on top of the case. The back panel features a large ventilation grille, a floppy disk drive cover, and several expansion ports including a parallel port, a serial port, and a keyboard port. The model number '10-12887' is visible on the bottom left of the back panel. The text 'THE END' is overlaid in large, cyan, bold letters on the left side of the image.

THE END

@fbz
<http://fabienne.us>
fabienne@fabienne.us