AllColoursAreBeautiful

interactive lightinstallation inspired by blinkenlights

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μc^3 - CCC Munich

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Fahrplan

μc^3

info

Chaos Computer Club
München

- e.V. founded in 1999
- > 80 members
- http://muc.ccc.de
- info@muc.ccc.de

How it came together

Moodlamp

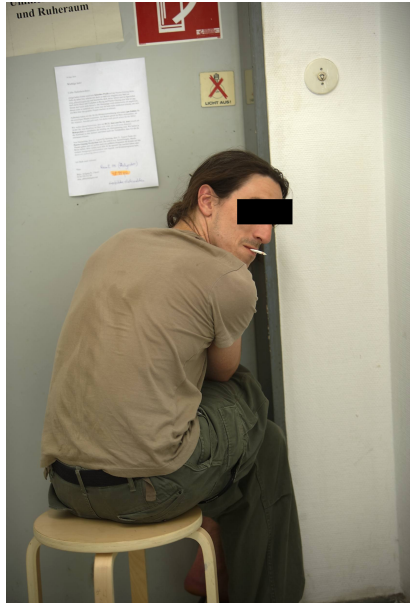μc^3's RGB-LED project, i.e. in use for the 3c

Puerto Giesing

Old office building, used by artists before beeing torn down
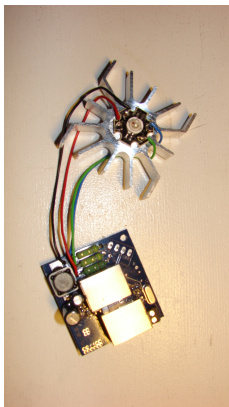

Blinkenlights

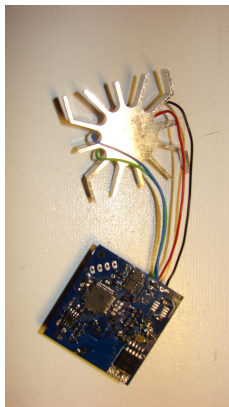Well known project transforming buildings into b\w displays
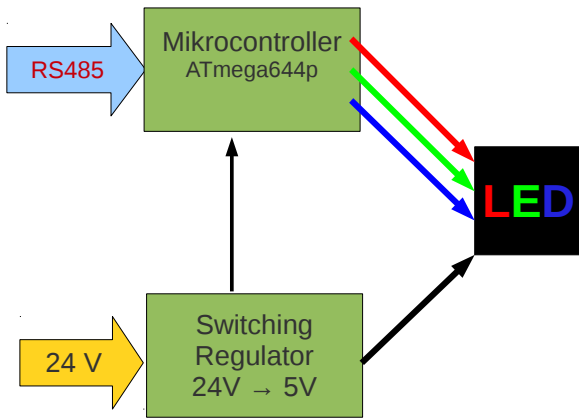
Unexpected Challenges

A lamp fit for the project

- New lamp, only neccessary components
- Switching regulator for higher supply voltage (-> lower supply current)
- Ethernet connectors replace old screw terminals for faster and more stable(?) connections
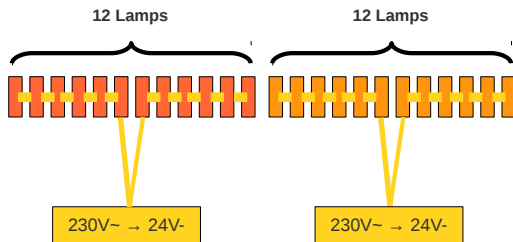
The lamp - Outline

Power Supply

At 24V supply voltage one power supply unit suffices for 16 lamps.

Puerto Giesing

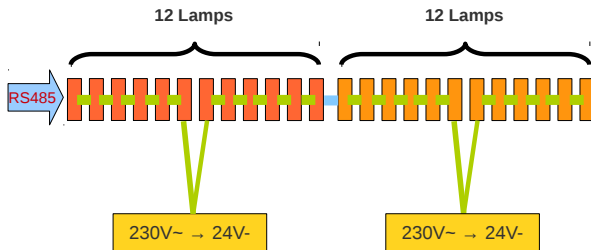Two supply units are used to supply the 24 lamps of one row

27c3

One supply unit is used for the 16 lamps of one row

12 Lamps   **12 Lamps**

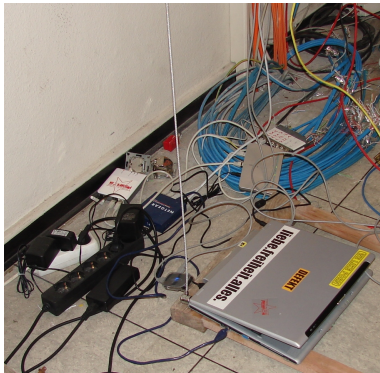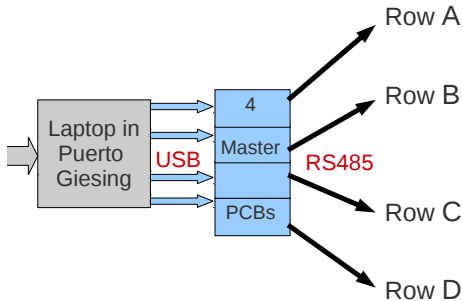230V~ → 24V-   230V~ → 24V-

Data Exchange

- Data exchange over regular ethernet cables
- 3 conductor pairs reserved for power supply
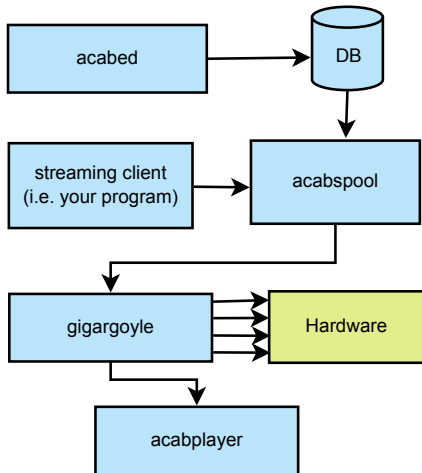- Remaining one used for data

Puerto Giesing

RS485

RS485

- Versatile communication standard
- Connects several devices in bus structure
- Communication over long distances

Software Components

Software Components (2)

acabed
- Webeditor
- Python (Django)
- JavaScript (Mootools)

Streaming Clients
- Roll your own interactive live streams
- Python Library available

acabplayer
- Live Viewer
- C, SDL

acabspool
- Queueing/Streaming Manager
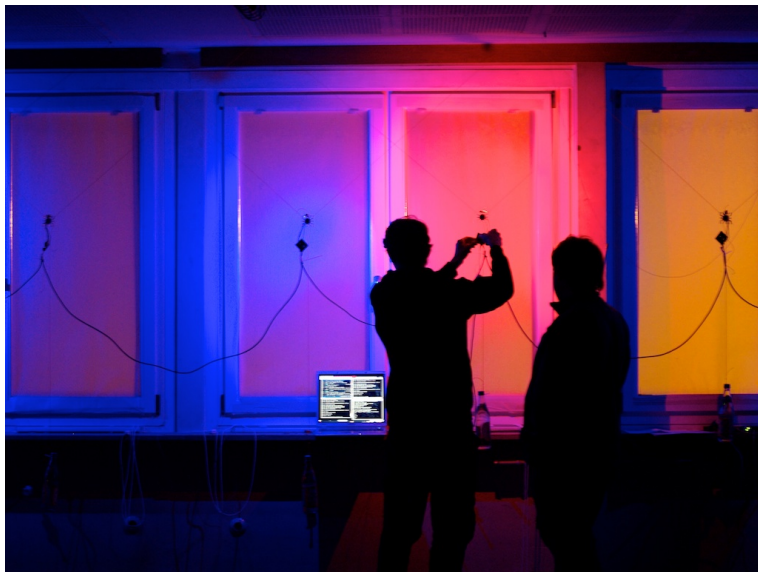- Python
- Manages streaming from database or direct streamers

gigargoyle
- Display "Driver"
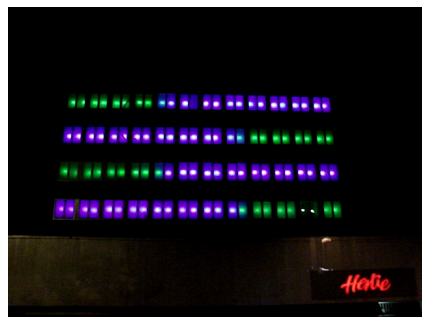- C
- Gets raw animations, puts them on the screen

acabed

acabed live demonstration
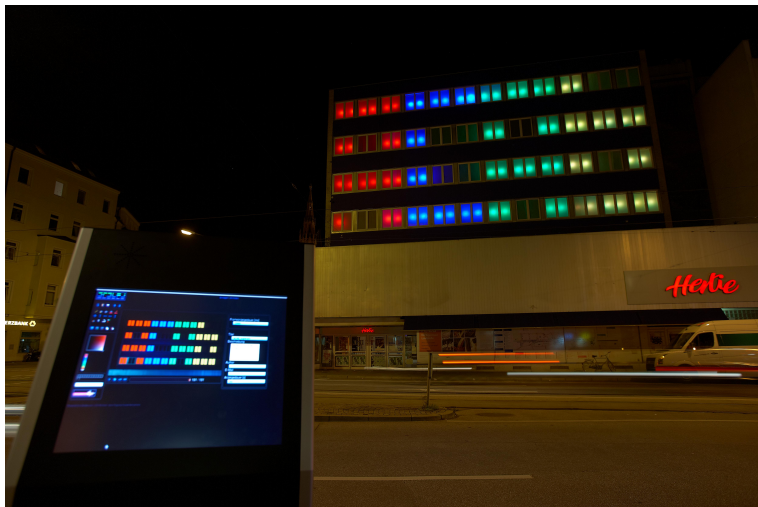
Putting it all together

Putting it all together

```python
1  import time
2  import acab
3  import random
4
5  t = 0.05
6  n = 300
7  while 1:
8      r = int(random.random()*255)
9      g = int(random.random()*255)
10     b = int(random.random()*255)
11     for i in range(0x10,0x28):
12         acab.set(i,r,g,b)
13         time.sleep(t)
14     r = int(random.random()*255)
15     g = int(random.random()*255)
16     b = int(random.random()*255)
17     for i in range(0x28,0x10,-1):
18         acab.set(i,r,g,b)
19         time.sleep(t)
```

Putting it all together

Interaction

Touch-Terminal

- Passersby could create animations on touch screen terminal with acabed
- Donation

SMS

- Text Message could trigger animation play
- `play ID`

blubbtris by Aquarium

- Live Tetris Game
- indepentently developed

acab@27c3

Setup

- Plastic boxes instead of windows
- 6 rows with 16 boxes (makes text is possible)
- 6 busses, every bus with 16 lamps powered by one power supply

Play with me!

- Create animations with our webeditor:
  http://http://81.163.62.30/
- Code games, visualizations with our Python client library:
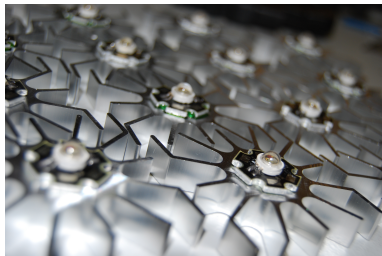 https://github.com/muccc/abracadabra

acab anywhere

Software

- Mapping of lampIDs possible to any combination of lines and columns
- Fast adjustments in acabed and gigargoyle

Hardware

- 100 lamps available
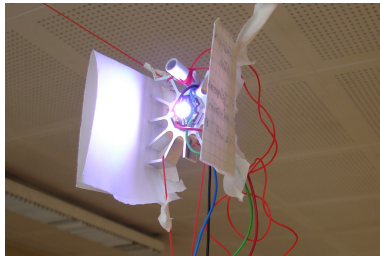- > 100 plastic boxes for versatile inside/outside installations

acab anywhere

Finances

- Start early…
- Support from CCC
- Municipal sources
- Donations: Pixelpaten (lamp godfathers)

Time

- Don't underestimate lead times for components
- Leave enough time for some experiments

Contact Overview

IRC

- #acab @ ray.blafasel.de

Information

- http://acab.muc.ccc.de/
- http://muc.ccc.de/
- info@muc.ccc.de
- presse@muc.ccc.de

Code

- https://github.com/muccc/