GlaDOS *(Reference anyone?)*

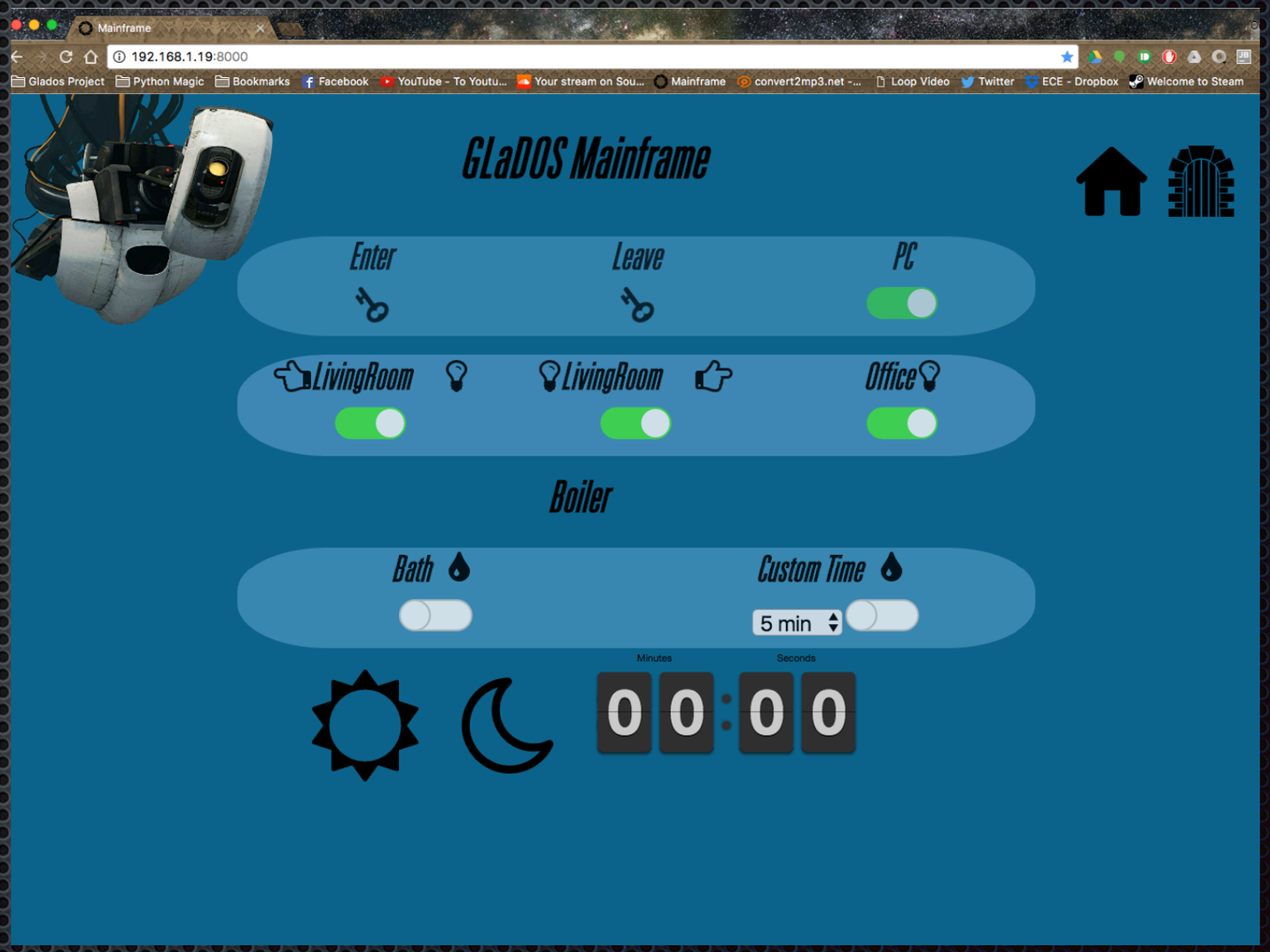
A personal IoT Project

The problem

- Constantly loosing the apartment's keys
- Manually turning on/off lights is kinda medieval
- Forgetting to turn off Boiler, electricity bills explode(as also could the house)
- Rudimentary electronics/programming knowledge

Solution

- A complete custom IoT solution.
- Based on Raspberry pi & esp8266
- Simple html/css/js webpage interface
- Both Interface + main python script fully customisable



Mainframe

192.168.1.19:8000

Glados Project | Python Magic | Bookmarks | Facebook | YouTube - To Youtu... | Your stream on Sou... | Mainframe | convert2mp3.net -... | Loop Video | Twitter | ECE - Dropbox | Welcome to Steam

GLaDOS Mainframe

Enter/Leave house routines

Enter | Leave | PC

LivingRoom | LivingRoom | Office

Doors Routines

Boiler

Boiler Routines

Light Groups

Bath | Custom Time

5 min

Minutes Seconds

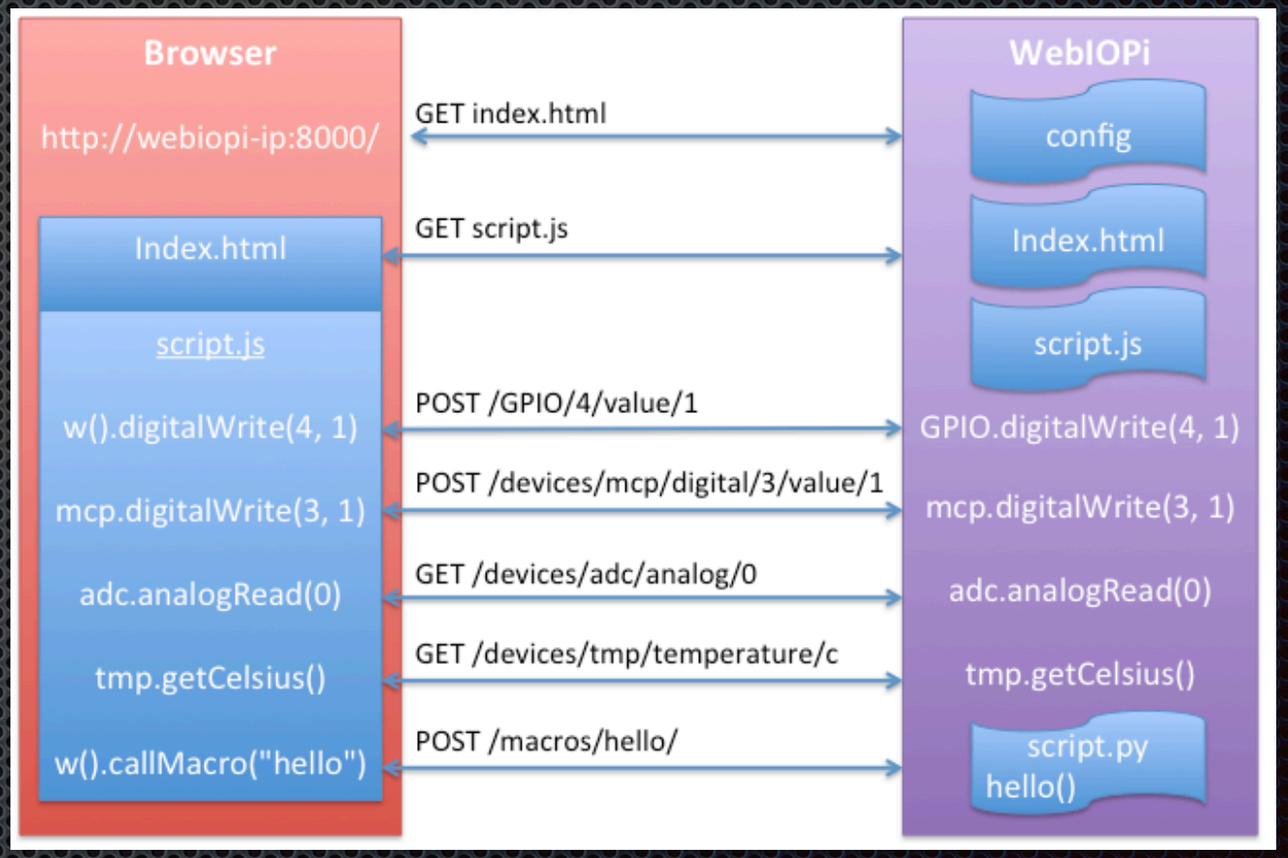
0 0 : 0 0

Boiler Timer

Morning/Night Routine

How? (part I)

- Based on webiopi framework to control wirelessly the Rpi's various GPIOs.
- HTTP python server provide HTML interface + REST API, locally accesible
- Javascript library makes asynchronous calls to python server.
- Execute custom python script, access to thousands of libraries.
- Use of Weaved Service, Globally access the Interface without port forwarding, etc (they are possible security risk)



How? (part II)

- Control of Apartment's door via servo and some 3D printed gears to turn the lock
- Control of Building’s door via relay and some Building Intercom hacking.
- Control of boiler + office lights via RF transmitter that controls RF sockets.
- Control of Hi-Fi amplifier via Infrared Led and LIRC(linux library)
- Control of 4 relays(used for lights + Hi-Fi system) via REST calls to ESP8266
- Control of desktop Pc,
  - Turn-on via hacking the case button coupled with esp8266
  - Play music, turn-off via Python VNC library.

How?(part III)

- ESP8266 , an IoT controller manufactured by Espressif, cost: 1-2 $
- Community build Arduino-like firmware
- Use of REST library called aREST
- Coupled with 4 relays, a AC/DC converter and a buck converter, they make an IoT 4 socket Smart Strip (cost: <10 $)
- Coupled with Opto-Coupler and some wire, we have a desktop Pc electronic switch

smart strip demo

Roadmap

- Simple Facebook Bot implementation, use of facebook messenger python library + a facebook profile
- Re-work of Web
- Voice Implementation (Jasper project)
- New possibilities via the use of more esp8266s

Hopefully, you right now:

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