Project description

Title:

Network controlled relay (dependent on environment variables/sensors)

People:

Ole Eirik Heggelund, Lars Erik Midtsundstad Storbukås

Course:

INF219 Project in Informatics

What we want to achieve:

To be able to control electronical devices in a simple manner, and be able to define a time schedule for the device to follow. Examples of use can be; remotely heat your house/cabin, decide when the heat should be turned on in the morning, turn on the coffe machine at a specific time.

Features we're going to use:

Raspberry Pi and GPIO-pins, network communication, electronics for the relays and sensors.

Milestones during the semester:

1. Be able to control an LED from the computer.

2. Read sensor values on the computer, and print these values to the command line.

3. Get the machine to perform action based on environmental values (like sensors, clock, etc.), and control electronical devices based on theese.

4. Develop software for server-client communication. So that we're able to remotely control the device (via network communication).

5. Figure out how the electronics should be hooked up (relays, sensors, etc.), and hook it up for testing on a breadboard.

6. Mount all electronics as the "finished product".

7. Modify the software to be suited for the electronical setup.

8. Modify the software to ble able to set relations between sensor values and output.

9. Develop a simple user interface available on the web browser.

10. Create a simple Android application for controlling the system.

Hardware:

- Raspberry Pi GPIO Breakout Board
- Electrical sockets
- RJ45 Socket
- Project box
- Relays
- Wiring cables
- Arduino for analog signals