Home Automation with Python on Raspberry Pi

Project Requirements

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Project Requirements

1. Within the team, agree on an application
2. With the professor agree on a list of functional requirements
3. Requirements for all teams
   - Raspberry Pi shall control external hardware
   - User interface is a web browser application
     - Multi client capability
     - (near) Real-time control (system status and user actions)
     - Remote system configuration
     - Client side: HTML5, CSS, JavaScript
     - Server side: Apache2, Python (no PHP!)
   - Server side SW Architecture
     - Python daemon processes on Debian Linux
     - Inter process communication with sockets or DBUS
     - Persistent data for configuration and HW status (MySQL)
   - IT Security Requirements
     - Respect web application security standards
     - Root rights only for daemon processes
     - Define MySQL user rights architecture

Collaboration, Testing & Documentation

- Collaboration
  - Agile development
  - Define roles within team
    - Master students will have a higher degree of responsibility
  - Distributed SW development
  - SVN based version management
- Testing
  - Unit-tests in Python
  - System tests according to specified test cases
- Documentation
  - Incremental design documents
  - Test documentation
  - Project documentation (protocol)

Special Topics

- Project members should specialize on a technical topic
  - Become an expert for your team and advisor for other teams
- They will implement this particular module(s)
- Some will give a short presentation on that topic to all students
  - 10 minutes
- The documents (2-5 pages) and code will be delivered to the professor
  - It will contribute to the individual part of the course grade
- List of topics: Referate.xlsx
  - Different degrees of difficulty for Bachelor and Master students