

# Design and Implementation of Home Energy Management System with Appliance State Detection Support

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# Motivation

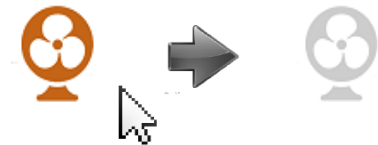
- Watching TV program is an entertainment for the whole family, so we want to build our system on it.
- We hope to complete following functions doing on the appliances just by press some buttons on your TV controller:
  - Monitoring
  - Control and Management
  - Analysis

# Approaches

- Construct Data Base
  - Use MySQL
  - Appliances information
    - applID, appType, power, timestamp
- Program Interface
  - Use GTK
  - Show appliances information
    - Show icons to indicate the state of appliances
    - Chick button to turn on/off appliances

```
mysql> update appliance set power=50 where appType=2;
Query OK, 1 row affected (0.00 sec)
Rows matched: 1 Changed: 1 Warnings: 0

mysql> select * from appliance;
+----+-----+-----+-----+
| appID | appType | power | timestamp |
+----+-----+-----+-----+
| 1 | 1 | 0 | 2012-11-27 02:01:48 |
| 2 | 2 | 50 | 2012-11-27 02:02:38 |
| 3 | 32 | 0 | 2012-11-27 02:01:43 |
+----+-----+-----+-----+
3 rows in set (0.00 sec)
```



# Problem station

- Now the web TV program and the appliance monitor are working separately
- Now we should integrate the two programs together
  - Include MySQL library in web TV's source code and add the appliance monitor's code, so that the program can get the information from our DB
    - Search how to modify files used by 'automake'

# Goals

- Add the appliance monitor as a tool (or function) in web TV.
- Add more function, like power consumption analysis.
- After all functions can work with our DB well, we'll replace it by connect to the server which can get 'real' appliances information.