

## **The PHP Home Security Exercise**

You've decided to build a custom security system for your house. You'd like to have a web page indicating the current status of the sensors. Right now you're not concerned with whether or not the alarms were going off while you were away, you only want to check on their given state at a particular moment.

### **Requirements**

- Support multiple sensor types
  - Temperature Sensor
  - Door Open/Closed Sensor
  - Glass Break Sensor
  - Smoke Detector
- Sensor types should support readout of their state as well as an alarm indicating if the value has passed a pre-set threshold.
- Ability to simulate a changing state of sensors for demonstration purposes, random input values each time the program is run is acceptable.
- Report page should show the current status of all sensors as well as if the alarm is triggered for that sensor.

### **Concrete Application**

- The application should implement the following sensors:
  - 2 Temperature Sensors
  - 2 Door Sensors
  - 3 Glass Break Sensors
  - 3 Smoke Detector

### **Bonus Points**

- You've got a wine cellar in your basement and you want to know if the temperature gets too cold or too hot in that room (dual alarm threshold design)
- Diagram of Class Structure (Planning)
- Use of smarty templates

### **What We're Looking At**

- Good Object Oriented Design
- Clean, Readable Code
- Extensibility, What Limitations Are In Your Design
- Good Separations of Concerns
- Use of PHP Built-In Functions Where Appropriate
- Under or Overuse of Comments

Output Sample

Sensor State

Name	Type	State	Alarm
Kitchen Temperature	Fire	70.6 Degrees	
Basement Temperature	Freeze	88.2 Degrees	
Front Door	Door	Open	ALARM
Back Door	Door	Closed	
Basement	GlassBreak	225.840hz	
Main Floor	GlassBreak	955.677hz	ALARM
Upstairs	GlassBreak	166.592hz	
Bedroom 1	Smoke	7.4% Visibility	ALARM
Bedroom 2	Smoke	54.7% Visibility	ALARM
Hallway	Smoke	75.4% Visibility	