

Design Pattern

Observer

```
public interface ISmokeDetectorListener {
    void fireIgnited(String location);
}

import java.util.ArrayList;

public class SmokeDetector {
    private ArrayList<ISmokeDetectorListener> listeners;

    public SmokeDetector() {
        listeners = new ArrayList<>();
    }

    public void falseAlarm() {
        for (ISmokeDetectorListener listener: listeners)
            listener.fireIgnited("SmokeDetector #1");
    }

    public void addListener(ISmokeDetectorListener listener) {
        listeners.add(listener);
    }

    public void removeListener(ISmokeDetectorListener listener) {
        listeners.remove(listener);
    }
}

public class FireDepartment implements ISmokeDetectorListener {
    public void fireIgnited(String location){
        turnOut(location);
    }

    public void turnOut(String location){
        System.out.println("turned out : " + location);
    }
}

public class Application {
    public static void main(String... args) {
        SmokeDetector smokeDetector = new SmokeDetector();
        FireDepartment fireDepartment = new FireDepartment();

        smokeDetector.addListener(fireDepartment);

        smokeDetector.falseAlarm();
    }
}
```