

```
1  //HEADER
2
3  #ifndef SUBJECT_H
4  #define SUBJECT_H
5
6  #include <vector>
7  #include <string>
8  #include <iostream>
9  #include "person.h"
10
11 using namespace std;
12
13 class Subject
14 {
15
16     public:
17
18         void attach(Person *person);
19         void detach(Person *person);
20         void notify();
21
22         virtual string state() = 0;
23         virtual void setState(string state) = 0;
24
25     private:
26
27         vector<Person*> mObservers;
28
29 };
30
31 #endif
32
33 //SOURCE
34
35 #include "subject.h"
36
37 void Subject::attach(Person *person)
38 {
39     mObservers.push_back(person);
40     person->registerSubject(this);
41 }
42
43 void Subject::detach(Person *person)
44 {
45     for(int i = 0; i < mObservers.size(); ++i)
46     {
47         if(person == mObservers[i])
48             mObservers.erase(mObservers.begin() + i);
49     }
50 }
51
52 void Subject::notify()
53 {
54     for(int i = 0; i < mObservers.size(); ++i)
55     {
56         mObservers[i]->update();
57     }
58 }
```