## Observer Pattern

### Definition

The observer pattern is a software design pattern in which an object, called the subject, maintains a list of its dependents, called observers, and notifies them automatically of any state changes, usually by calling one of their methods. It is mainly used to implement distributed event handling systems.

### Meaning

### Subjects

If we have an object that gathers information by monitoring other things and it publishes data for other object to use, we formally can call it the subject (as it is being the subject of other objects monitoring it) or less formally the publisher (as it publishes information for other objects to use)

### Observers

If we have a number of other individual objects that keep a check on what’s going on with the subject and wait to be told that the subject has new data, these are called the observers.

The subject holds a collection of observers, and if it changes its data, it informs the subjects this is the case, normally by triggering a method in each subject.

### Example

In the example, we create 1 Subject that monitors 2 numbers.

We add in 5 observers to start with and we can see each observer being updated when we change the subjects data.

We then remove a couple of the observers from the Subject notifications and prove it works.