**Observer Pattern :**

Suppose we have a weather station that records the temperature.So there is a weather station with sensors that's going to record temperature.And there are going to be multiple devices where we want to show the latest temperature.So all these devices, they are kind of going to observe what temperature is going to be on the weather station. Suppose it is recording 26.So every device will show 26 2626.But suppose as the sun rises the temperature is going to increase.So we need a mechanism to notify that these devices that you should now display 27. So it's kind of a problem statement.

So now without using the observer pattern, what we have and what we can do in code, the weather station would have to explicitly inform each devices. So you have to say okay fine go and update this device as soon as the temperature changes, you have to explicitly inform each device about the temperature change, which results in a tight coupling between the station and the devices.

**Benefits :**

Loose coupling:- We are storing the reference of the type on display device.

Scalability:- new observers can be easily added without changing the subject.

flexibility:- We can dynamically add or remove observers on the runtime.

**Use cases:**

**1) Event listeners.**

We use observer pattern for handling button clicks.Now button is an observer sorry button is a subject.And there must be elements which are observing that okay something has to change on a button click or input changes.

**2) Stock price:**

monitoring Stock price will have a data source.And there will be a lot of guys or multiple subscribers where the updated price can be shown.

**3) News publishing systems:**

whenever a news articles are published(subject), the subscribers(users) are notified whenever a new article is available, and social media notifications logging systems are some more applications where observer pattern can be used.

**4) Social media notification:**

User can be subscribe to update from the specific account, and when the accout posts(subject). All the follower(observers)are notified.

**5) Logging System:**

Different logging handlers can observe event and log them as a needed, such as to the console,file,remote server.



