

Observer Pattern:- (Behavioral)

Context:

Defines a one-to-many dependency between objects so that when one object changes state, all its dependents are notified and updated automatically.

Problem:

Memory management, needs a built-in garbage collection language.

Forces:

To write a more complicated code that would clear memory automatically.

Solutions:

to use programming languages with built-in garbage collection or reference counting mechanisms.

Example:

In our example, we use observer pattern in almost all the update functions in our system such as `update_course_materials...`