Active Record Pattern

* The Problem: Database access is repetitive
* The active-record pattern is a simple data-access method that maps a database table or view into an object. The fields map one to one, usually without modification.
* Active record maps database records into individual object.
* The objects is responsible for create, read, delete & update for underlying database entry.
* Database field transient to object properties vice-versa with any manipulation.
* This actually powered by ORM (Object Relational Mapper)

Drawbacks

* Objects are tightly coupled to the database schema
* The individual object properties one to one map with the database schema so the database or objects need to change the other one also.
* Objects are tightly coupled to the database itself
* It’s hard to test the database because it’s actually use the database itself.

Singleton

* Problem: Shared/limited resources
* There is a single resource that shared all of the components in the application example common one is database connection
* If we open and close database connection in each and every request in each and every page this will lock the database and kill the database

Singleton Pattern

* The singleton pattern restricts a given object to having one single, global instance across the entire application.

Drawbacks

* Glorified Globals
* It sounds like global variable unfortunately most people treated such.
* In C++ it leaks memory
* But in PHP it does not matter because objects memory deallocated after page execution but its give performance problem.

Factory Pattern

* The Problem: Various implementations
* We want to get the connection regardless whether MySql, Oracle, Sequel Server in the same way and in the same thing do with that.
* Allows us to create an object without needing direct access to the creation logic
* This is useful in standardizing interfaces

Drawbacks

* Refactoring to use this can be painful
* Subclasses may have a lot of boilerplate

Mock Objects

* The Problem: Side effects
* Mock objects are simulated objects that mimic the behavior of real objects in controlled and specified ways.