Design Principles

Design Principles are general guidelines that help form a good software design. We use design principles to avoid bad design. Bad design include-

* Rigidity- hard to change the code (not flexible)
* Fragility- changes made can break the code (weak)
* Immobility- cannot reuse the code and cannot be separated from the app

Good design include-

* High Cohesion

Cohesion is the degree to which the elements inside a module belong together.

Thus, if the module has only related elements it is called high cohesion. Which ensures that the code inside the module is all dependent in same module.

* Low Coupling

Coupling is the degree of interdependence between software modules.

Thus, if modules are less interdependent on other modules it is called low coupling. Which ensures that the code outside the module isn’t dependent on another module.

SOLID Design Principles

SOLID Design Principles represent five Design Principles used to make software designs more understandable, flexible, and maintainable. The Five SOLID Design Principles are as follows:

* S- Single Responsibility Principle (SRP)

Each module/ class should have a single responsibility.

* O- Open-Closed Principle (OSP)

Module/ class should be open for extension but closed for modification.

* L- Liskov Substitution Principle (LSP)

Derived class should be substituted instead of parent class by maintaining the parent code.

* I- Interface Segregation Principle (ISP)

Clients should not be forced to be dependent on methods they don’t use.

* D- Dependency Inversion Principle (DIP)

High level module/ class should noy be dependent on low level module/ class.

DRY Design Principles

Abbreviates to Don’t Repeat Yourself

Each small piece of code occurs exactly one time in the system, making the code scalable, reuseable and maintainable.

KISS Design Principles

Abbreviates to Keep It Simple Stupid

Keeping code simple instead of complicated, each method should solve one issue rather than having multiple cases.

YAGNI Design Principles

Abbreviates to You Aren’t Gonna Need It

Add code that you need them for the present, do not assume the future issue and add the code.