**12. Identify how OOD principles violations impact the quality of code.**

1. Don’t Repeat Yourself (DRY) principle.

2. Keep It Simple and Stupid (KISS) principle.

3. The Single Responsibility principle (SRP).

4. The Open Closed Principle (OCP).

5. Liskov Substitution Principle (LSP).

6. The Interface Segregation Principle (ISP).

7. The Dependency Inversion Principle (DIP).

1. **The Single Responsibility Principle (SRP).**

SRP states that there should never be two functionalities in one class. Sometimes, it’s paraphrased as:

“A class should only have one, and only one, reason to be changed.”

Where a “reason to be changed” is the responsibility of the class. If there is more than one responsibility, there are more reasons to change that class at some point.

This principle makes it easier to deal with bugs, to implement changes without confusing co-dependencies, and to inherit from a class without having to implement or inherit methods your class doesn’t need.

1. **The Open Closed Principle**

The OCP states that classes or object and methods should be open for extension, but closed for modifications.

What this mean in essence is that you should design your classes and modules with possible future updates in mind, so they should have a generic design that you won’t need to change the class itself in order to extend their behavior.

This principle is important in order to ensure backwords compatibility and prevent regressions – a bug which happens when your programs features or efficiency breaks after an update.

1. **The Interface Segregation Principle (ISP)**

The ISP states that the client should never be forced to depend on an interface they aren’t using in its entirety. This means that an interface should have a minimum set of methods necessary for the functionality it ensures, and should be limited to only one functionality.

For example, a pizza interface shouldn’t be required to implemented an addpepperoni() method, because this doesn’t have to be available for every type of pizza. For the sake of this tutorial, let’s assume that all pizza have a sauce and need to be baked and there’s not a single exception.