Abstraction

Abstraction in programming is representing complex ideas in a simplified way by identifying and separating the essential characteristics of an object or system, leaving aside unnecessary details. This ability allows programmers to focus on relevant aspects of the problem, developing more efficient and scalable solutions. In addition, hiding complexity behind simpler interfaces results in code that is more maintainable and easier to understand. The additional advantage of abstraction is that it facilitates the creation of reusable software components in different contexts, making code modification and understanding easier.

Este principio fue utilizado en mi proyecto, porque la idea de llevar el registro de los comentarios o lista de comentarios por cada video, se hacia compleja. Por lo tanto a través de la Abstracción pensé en soluciones simplificadas que puedan ayudarme a que el programa cumpla su objetivo. Lo que hice fue centrarme en lo que debía de tener cada video y como debía de mostrarse, así que hice una clase llamada Video, Comentarios, etc. Esto me ayudó a separar los detalles necesarios de los innecesarios.

Encapsulation

Encapsulation in programming is based on the principle of Abstraction and consists of hiding the internal details of a class, allowing access to data and behaviors only through public methods. This provides a safe and standardized way of interacting with the data and ensures that any problem or change in the implementation affects only the code that has access to the class, avoiding external modifications through private methods.

Este otro principio fue usado en todo Foundation 4. Este programa tiene algunos métodos que no deben ser visibles con el resto del programa, como lo

Inheritance

Inheritance in programming is the ability of a more specific class, called a "Derived Class", to inherit attributes and methods from another more general class, known as a "Base Class". This is based on an "Is a" relationship, where a Derived Class is a type of the Base Class. For example, a "Dolphin" is a "Mammal". Inheritance allows us to create new classes from a base class, which facilitates code reuse and generates a hierarchy in the application. This allows us to inherit components from a base class to other classes, and the base class can add, use, or redefine the inherited methods, which provides an additional benefit in code reuse and flexibility.

Polymorphism

Polymorphism, a key concept in object-oriented programming, derives from the Greek words "poly" (many) and "morph" (forms), signifying the quality of having multiple forms. It enables an object or line of code to exhibit different behaviors based on the context in which it is utilized. For effective application, polymorphism relies on the principles of abstraction, encapsulation, and inheritance. Derived classes can inherit attributes and methods from their superclass, and polymorphism permits them to override or modify the behavior of inherited methods, a process known as method overriding.