Software Design 1

Season 2024 - 1

Workcshop No 2.

Andrés Felipe Vanegas Bogotá (20212020118)

General description:

The provided code implements a vehicle catalog system using object-oriented programming in Python and implements diferents creational pattern. Allows the creation of different types of vehicles, such as cars, trucks, yachts and motorcycles, each with their own specific characteristics.

In the first part of this workshop our code structure looked like this:

Code Structure:
The code consists of several classes.

> **Engine:** Represents the engine of a vehicle with attributes such as name, type, power and weight.
> **Vehicle:** Represents a generic vehicle with common attributes such as engine, chassis, model, gas mileage, and year. It also contains a method to display vehicle information.
>
> **Vehicle derived classes:**
> Automobile: Represents a car.
> Truck: Represents a truck.
> Yacht: Represents a yacht.
> Motorcycle: Represents a motorcycle.

Now this Python code implements the Singleton pattern for the catalog, where only one instance of the catalog is created and used throughout the program. Additionally, it includes the definition of vehicle classes and an Abstract Factory pattern for creating different types of motors. The Abstract Factory pattern is applied in the MotorFactory hierarchy to provide a way to create families of related objects without specifying their concrete classes.

Old Uml: