This program was written in C++ using CLion IDE and vim on Ubuntu 15.10. It contains two classes, FuelGauge and Odometer. The FuelGauge class has an int field - fuel, and a const static int field - maxCapacity. The incrementFuel and decrementFuel methods will add/subtract 1 to fuel, respectively, and increment will add until the tank is at max capacity, while decrement will subtract until the tank is empty.

The Odometer class has an int mileage field, and two const static int fields, maxMileage and mpg. It has two methods, incrementMileage which accepts a FuelGauge object as a parameter and passes by reference to allow the FuelGauge to change. When the mileage of the Odometer exceeds 999,999 it resets to 0, and when the mileage modulo mpg is equal to 0, the fuel is decrement by one. Odometer also has an accessor for mileage called getMileage.

The simulation is main.cpp creates both a FuelGauge and Odometer object, fills up the FuelGauge to maximum capacity, and passes it to the Odometer method incrementMileage. It will continue to increment mileage and decrease fuel accordingly until the FuelGauge is empty.