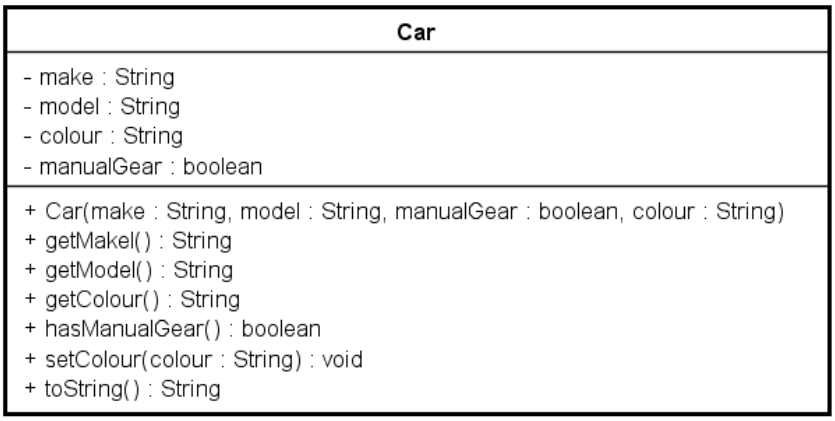
Exercise: Car, version 1

Create a new module in IntelliJ and name it `Car_v1`.



Add a new class called `Car` representing a car with make, model, colour and a flag representing is it has manual gear or not. See class diagram for variable types.

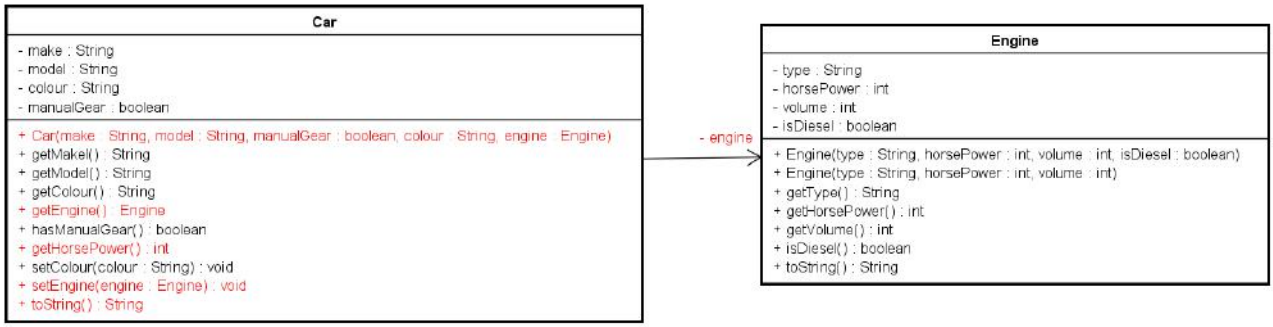
a) Add a constructor with parameters for all instance variables.
b) Add getters for all instance variables.
c) Add setter for colour
d) Add a method `toString` returning a string with the values for all instance variables

Implement a test class with a main method for your class `Car` (name the class `CarTest`).

Exercise: Car, version 2

Create a Module in IntelliJ named `Car_v2` and copy into the src folder for this module, the `Car` and `CarTest` classes from a previous exercise (from Module `Car_v1`). Copy also class `Engine` (from Module `Engine_v1`) into the Module such that you now have classes `Engine`, `Car` and `CarTest`.

Study the class diagram below



Modify class `Car` such that it exactly represents the class diagram above, i.e.

e) Add an extra instance variable `engine` of type `Engine`.
f) Modify the constructor, such that it takes one more parameter (for the engine). Add one more statement in the body of the constructor, because the purpose for the constructor is to initialise all instance variables.
g) Add a getter for the engine (`getEngine`).

h) Add setter for the engine (`setEngine`).
i) Modify the method `toString` such that the string being returned also contain information of the engine. *Hint: You already have a `toString` method in `Engine` returning the information.*
j) Add one more method, `getHorsePower`, returning the horsepower. *Note that you do not have direct access to the horsepower but only to the engine (instance variable) on which you have to call a method to get the horsepower.*

Modify the `main` method in test class (`CarTest`) such that you test the constructor, the getter and setter for engine, the `getHorsePower` and the `toString` method.
Note that you have to create an `Engine` object before you create a `Car` object (copy the lines from your `EngineTest` you made in project `Engine_v1`)