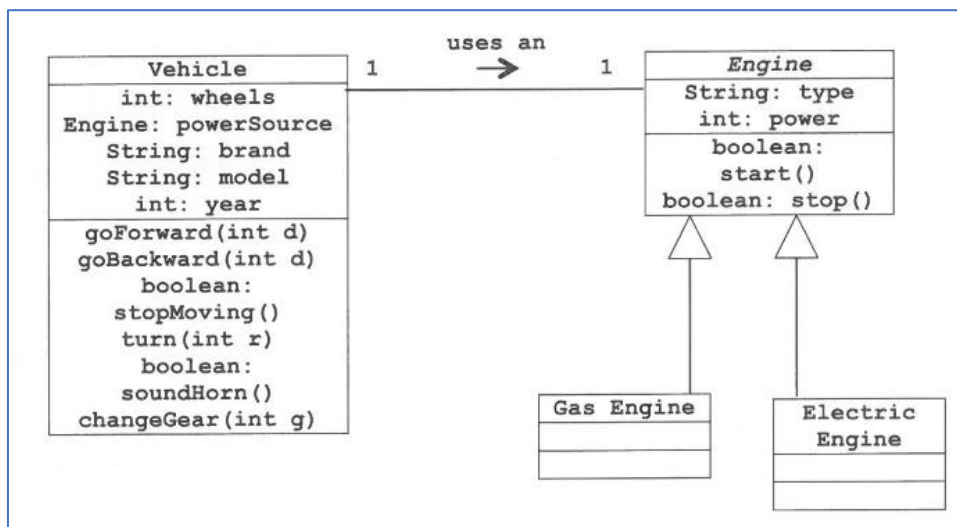


Year 13 SL/HL

Homework 1: Classes and Objects

- 1) Question about classes and objects – (D.1.1 to D.1.6 in the book)
- a) A class is divided into two sections. Which are they? [1]
 - b) What is the difference between a Class and an Object? [2]
 - c) Why do we create Abstract Classes? [2]
 - d) What is UML? [1]
 - e) Describe that the following class diagram is showing. [3]



- f) State two different multiplicities. [1]
 - g) What do we mean by Decomposition (we also call it Modularisation)? [1]
 - h) As regards to classes what do we mean by:
 - i) Association [1]
 - ii) Dependency [1]
 - iii) Aggregation [1]
 - iv) Inheritance [2]
- 2) Create the following program in Java.
- a) Create a class called `Trip`. The attributes are 'from', 'to', and 'placeOfStay'. The attribute 'from' is an integer, for example, 120520. This represents the date 12th May 2020. Same goes for the attribute 'to'. The third attribute, 'placeOfStay' is a string and it indicates the location of the holiday.
 - b) In the class `Trip` write the setters and getters. Make the setter for 'to' check that its number is greater than the number for 'from'.
 - c) Write a class called `TripsProgram`. In it define an array of type `Trip[]`.
 - d) In `TripsProgram` write methods to do the following:
 - i) Enter all trips
 - ii) View all trips

- iii) View all trips to a particular place
- iv) Modify a trip
- v) menu
- e) Make the program loop and present a menu of all the above options and when the user chooses option 5 the program stops.