Association and Inheritance

Case Study

Fire Department has hired you to make a training and simulation system for them.

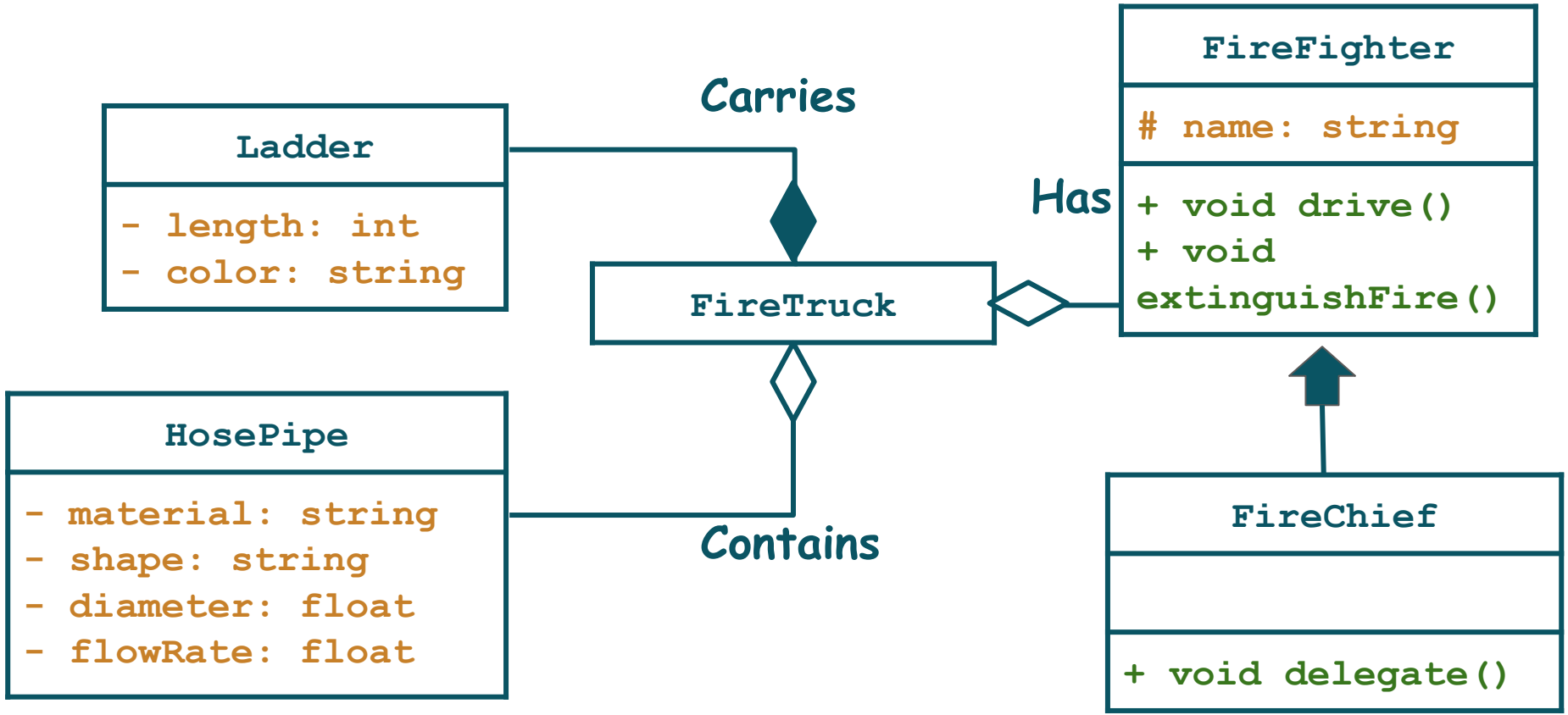
In this system they have Fire Trucks. Where each Fire Truck contains a Ladder and a Hose Pipe.Hose pipes are detachable from the truck. Hose pipes are either made of synthetic rubber or soft plastic and they can be either be cylindrical or circular in shape. They have specific diameter and water flow rate.

Ladder has a specific length and colour and they are built right into the truck (i.e., they cannot be separated from the truck).

Each FireTruck has a Firefighter as its Driver. FireFighter has a name. He can drive the fire truck and can extinguish fire as well.

They have a Fire Chief as well. The fire chief is just another firefighter. He can drive a truck. He can put out fires. But he can also delegate responsibility for putting out a fire to another firefighter.

Domain Model



Association: Aggregation & Composition

- Aggregation and Composition are "belongs-to" type of relationship.
- it a "has-a" relationship.

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For Example, in the Previous Example, FireTruck has a

- Ladder,
- HosePipe,
- and a Driver.

Inheritance

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For Example, in the previous Example, FireChief is a FireFighter.

Example

A vehicle has an Engine.
Car is a Vehicle.
Bike is a Vehicle.