Chapter 9 Review Exercise Solutions

R9.1

a)
Superclass: `Employee`
Subclass: `Manager`
b)
Superclass: `Student`
Subclass: `GraduateStudent`
c)
Superclass: `Person`
Subclass: `Student`
d)
Superclass: `Employee`
Subclass: `Professor`
e)
Superclass: `BankAccount`
Subclass: `CheckingAccount`
f)
Superclass: `Vehicle`
Subclass: `Car`
g)
Superclass: `Vehicle`
Subclass: `Minivan`
h)
Superclass: `Car`
Subclass: `Minivan`
i)
Superclass: `Vehicle`
Subclass: `Truck`

R9.2

Because in terms of inventory, toasters, car vacuums, and travel irons all behave the same. There are a certain number of them and they cost a certain amount.

R9.3

`ChoiceQuestion` inherits the following methods from its superclass:
- `setText`
- `setAnswer`
- `checkAnswer`

It overrides the following method:
- `display`

And it adds the following methods:
- `addChoice`

R9.4

`SavingsAccount` inherits the following methods from its superclass:
- `deposit`
- `getBalance`

It overrides the following methods:
- `withdraw`
- `monthEnd`

It adds the following method:
- `setInterestRate`

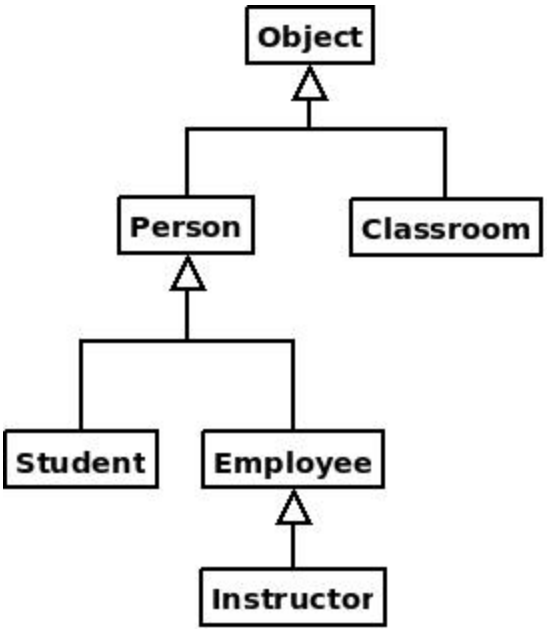
R9.5

`CheckingAccount` has a single instance variable:
- `private int withdrawals;`

R9.6

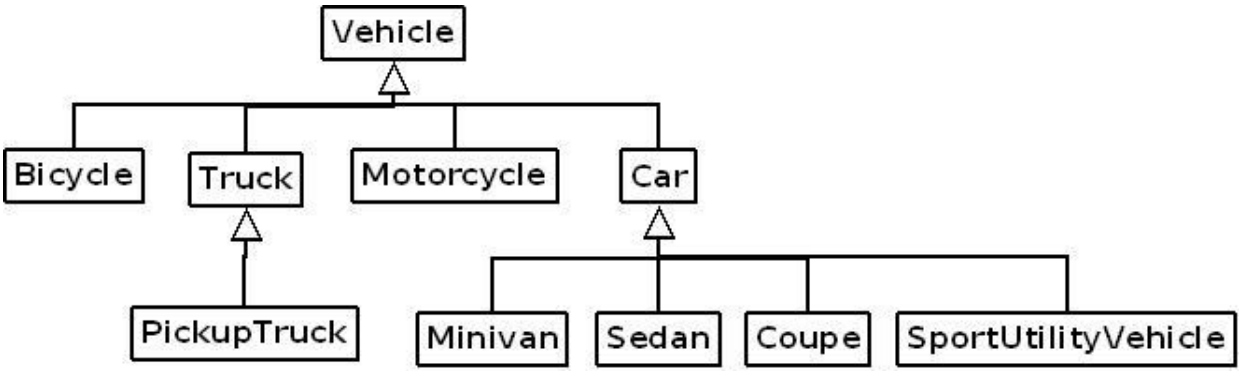
a) legal
b) not legal
c) not legal
d) legal

R9.7



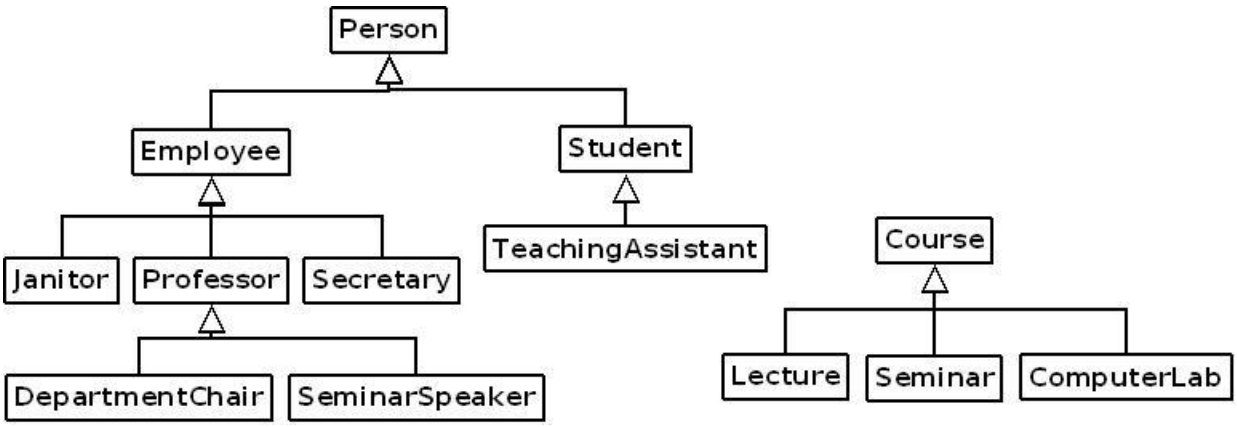
R9.8

Answers may vary depending on one's definition of a pickup truck (is it a car or truck?) and motorcycle (is it a bicycle with an engine?).



R9.9

Answers may vary depending on one's definition of a seminar speaker.



R9.10

The `(BankAccount) x` cast is casting the variable type of the object without changing its value whereas the `(int) x` cast can actually change the underlying primitive value.

R9.11

a) true
b) true
c) false
d) true
e) true
f) false

R9.12

(a) and (c) require a cast.

R9.13

None of these casts will throw an exception.

R9.14

a, c, and f are legal assignment statements, although f will throw a runtime error.

