1. **Identify the superclass and subclass in each of the following pairs of classes.  
   Use the substitution principle, described in chapter 9, section 9.1 of the course textbook, to check your answers.**
2. **Employee, Manager**

Superclass: Employee

Subclass: Manager

1. **GraduateStudent, Student**

Superclass: Student

Subclass: GraduateStudent

1. **Person, Student**

Superclass: Person

Subclass: Student

1. **Employee, Professor**

Superclass: Employee

Subclass: Professor

1. **BankAccount, CheckingAccount**

Superclass: BankAccount

Subclass: CheckingAccount

1. **Vehicle, Car**

Superclass: Vehicle

Subclass: Car

1. **Vehicle, Minivan**

Superclass: Vehicle

Subclass: Minivan

1. **Car, Minivan**

Superclass: Car

Subclass: Minivan

1. **Truck, Vehicle**

Superclass: Vehicle

Subclass: Truck

1. **Consider a program for managing inventory in a small appliance store. Why isn’t it useful to have a superclass SmallAppliance and subclasses Toaster, CarVacuum, TravelIron, and so on?  
   *HINT: review Programming Tip 1 in section 9.1 of the course textbook*.**

In this scenario, the superclass SmallAppliance would not be necessary since the program is for the inventory in a small appliance store. In other words, since there will only be small appliances, the superclass SmallAppliance is not needed. However, if there were different kinds of appliances in the store, such as medium or large, then it would make more sense to have a superclass and subclasses.