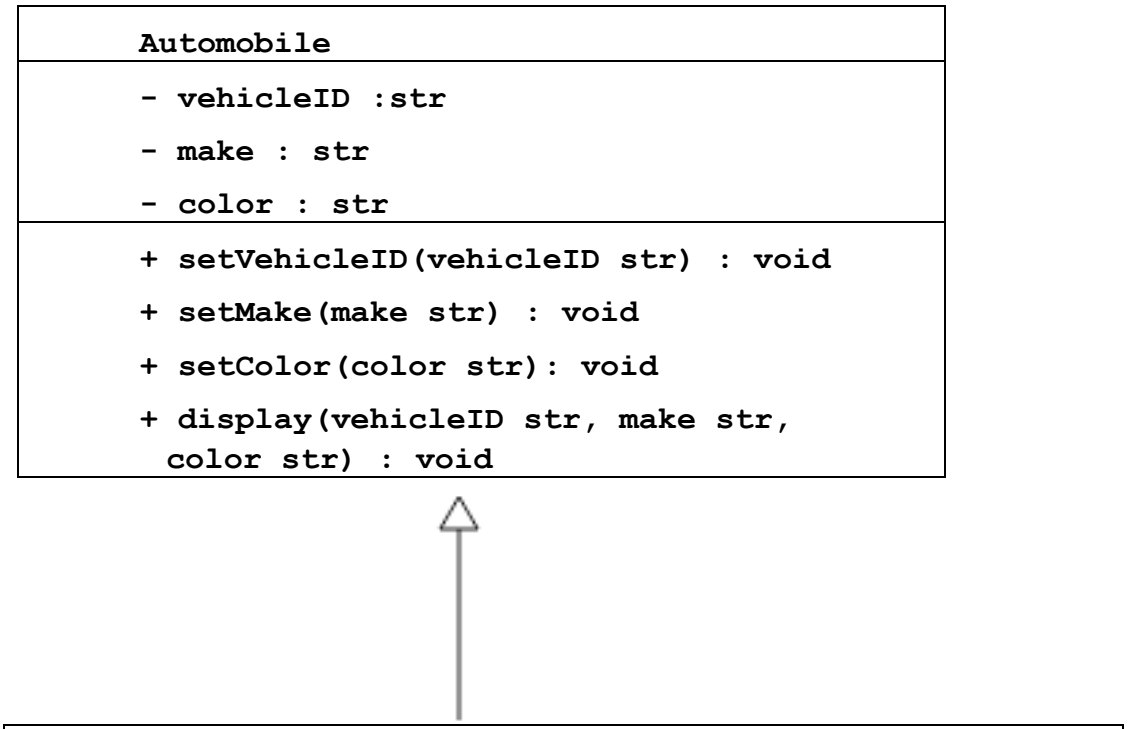
An Object-Oriented Approach to Programming Logic and Design, 4rd Edition

Chapter 8 (1-4 Assigned)

Exercises

1. a. In the Exercises in Chapter 7, you designed a class named `Automobile` that holds a vehicle identification number, make, model, and color of an automobile. Design a class named `Convertible` that is a child class of `Automobile`. Include a new data field that holds a value indicating whether the top is currently up, and include get and set methods for the new field.



2. a. In the Exercises in Chapter 7, you designed a class named `CheckingAccount` that holds a checking account number, name of account holder, and balance. Design a class named `InterestBearingCheckingAccount` that descends from `CheckingAccount` and includes a field that holds an annual interest rate. The `InterestBearingCheckingAccount` class contains a method that sets the new field value and a method that overrides the display method in the

`CheckingAccount` class.

3. a. In the Exercises in Chapter 7, you designed a class named `StockTransaction` that holds a stock symbol, stock name, number of shares bought or sold, and price per share. Design a class named `FeeBearingStockTransaction` that descends from `StockTransaction` and includes fields that hold the commission rate charged for the transaction and the dollar amount of the fee. The `FeeBearingStockTransaction` class contains a method that sets the commission rate and computes the fee by multiplying the rate by transaction price, which is the number of shares times the price per share. The class also contains get methods for each field.

4. a. Design a class named `Player` that holds a player number and name for a sports team participant. Include methods to get and set the values for each data field.
b. Design two classes named Baseball Player and Basketball Player that are child classes of Player. Include a new data field in each class for the player's position. Include an additional field in the Baseball Player class for batting average. Include a new field in the Basketball Player class for free-throw percentage. Add appropriate methods in the child classes to get and set the new fields.