COMPUTER SCIENCE

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6.2 Race Horse

Inheritance - Rules to Remember

1. **A subclass can add new private instance variables.**
2. **A subclass can add new public or private methods.**
3. **A subclass can override (redefine) inherited methods.**
4. **A subclass must define its own constructors.**
5. **A subclass cannot access the private members of its superclass.**

Description

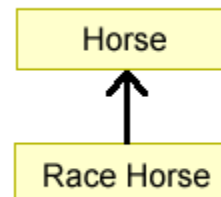A **Horse** class is defined with the following attributes and behaviors:

Attributes (instance variables)

- name - the name of the horse
- owner - the owner of the horse
- value - how much the horse is worth

Behaviors (methods)

- toString - returns a string representation of the values stored in a horse object's instance variables.

Define a **RaceHorse** class with all of the attributes of the *Horse* class but with an additional attribute for the number of races a horse has won. Since a race horse **is-a** a type of horse this relationship can be represented in Java using **inheritance**. The diagram below illustrates this relationship

Source Code

Open and copy the following workspace to your home directory: Horse

Modifications

Make the following additions and modifications to the *RaceHorse* class:

1. A subclass can add new private instance variables.

- Add an instance variable of type *int* named **numRacesWon**