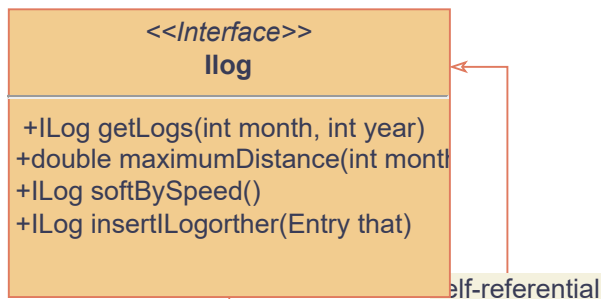


A phone directory combines names with phone numbers. Develop a data definition for phone records and directories.
Develop the methods:

whoseNumber, which determines the name that goes with some given phone number and phone directory.

phoneNumber, which determines the phone number that goes with some given name and phone directory



5.5.1 Suppose the requirements for the program that tracks a runner's log includes this request: ... The runner wants to know the total distance run in a given month...

Design the method that computes this number

5.5.2 Suppose the requirements for the program that tracks a runner's log includes this request: ... A runner wishes to know the maximum distance ever run ...

Design the method that computes this number. Assume that the method produces 0 if the log is empty.

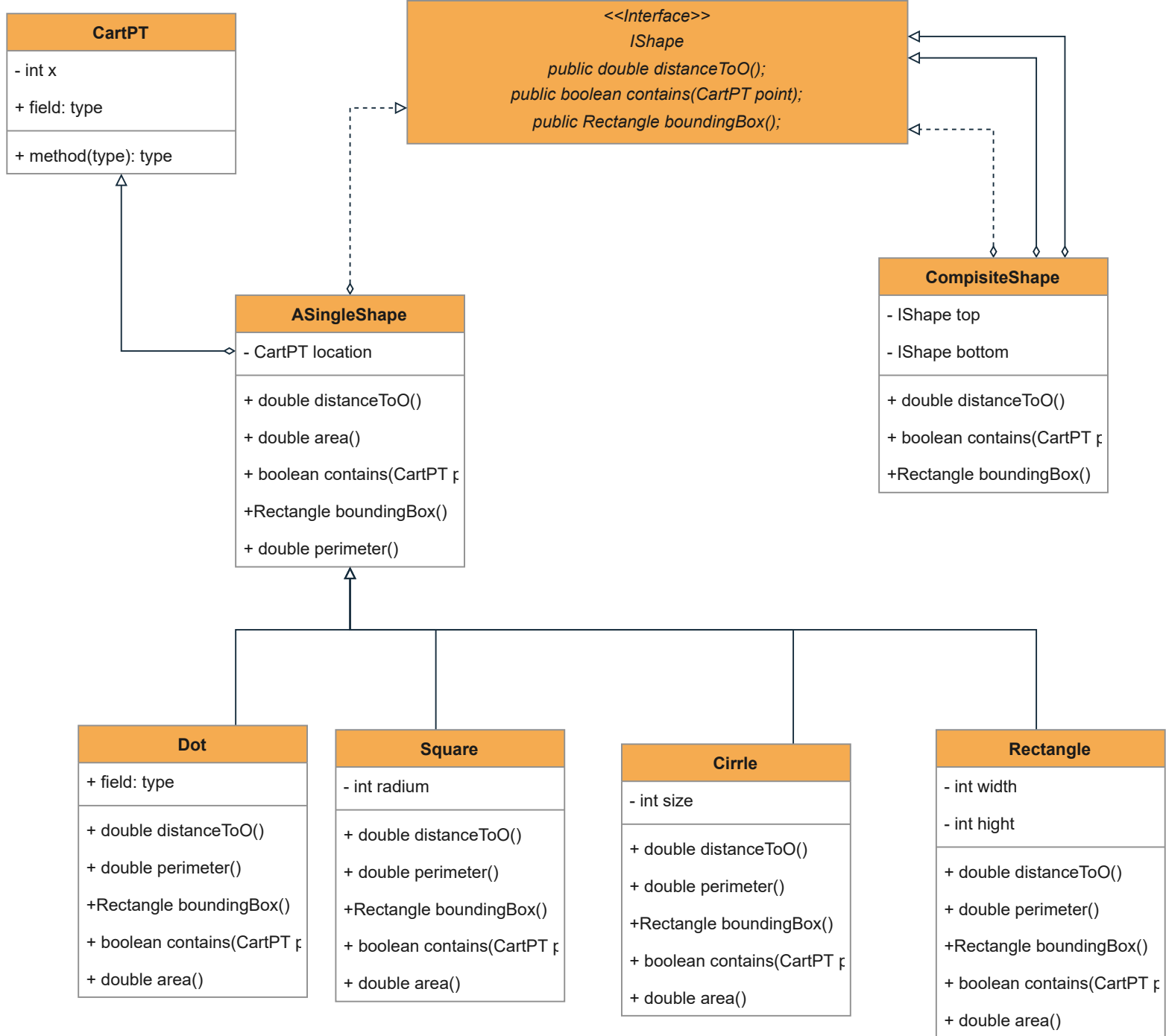
Exercise 5.5 (cont)

5.5.3 Suppose the requirements for the program that tracks a runner's log includes this request:

... The runner would like to see the log with entries ordered according to the pace computed in minutes per mile in each run, from the fastest to the slowest ...

Design this sorting method.

Hint: Don't forget to design methods for auxiliary tasks.



Develop a drawing program that deals with at least three kinds of shapes: dots, squares, and circles. ...In addition, the program should also deal with overlaying shapes on each other. In the following figure, for example, we have superimposed a circle on the right side of a square:

We could now also superimpose(thêm vào) this compounded shape on another shape and so on. The user wishes to know how close a combination of shapes is to the origin ... Add a method that determines whether some point in the Cartesian space falls within the boundaries of some shape. ... A graphics program must compute the bounding box for a shape. ...