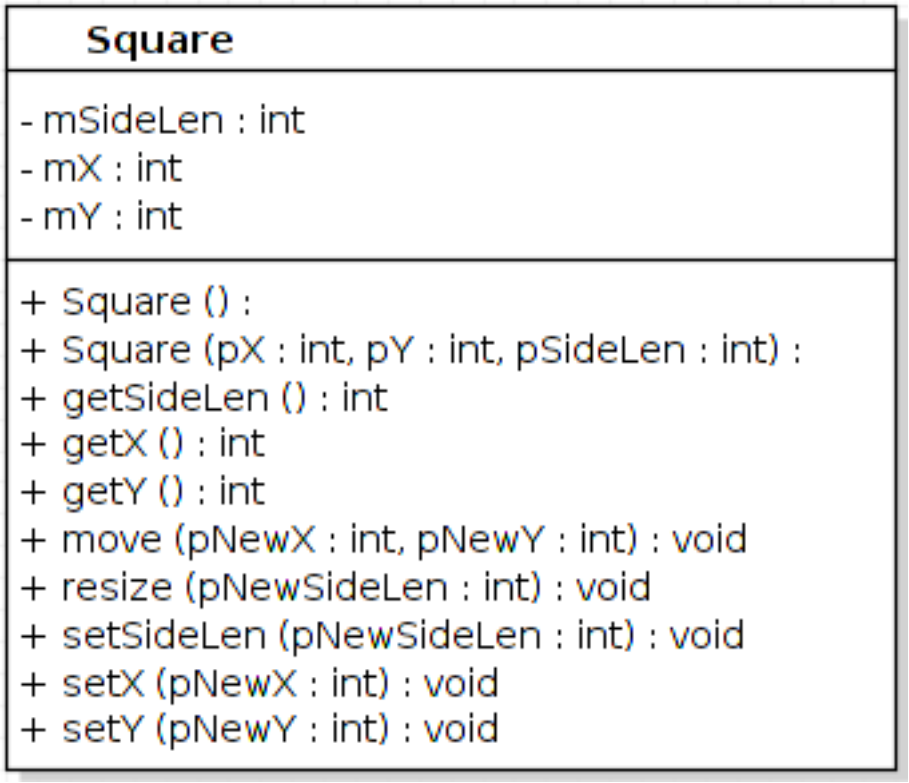
15. Inheritance :: Revising the Design of the *Square* Class (continued)



Employing what we have learned about inheritance, we can now redesign the *Square* class to take advantage of the existing *Rectangle* class. Since a *Square* **is a** *Rectangle* we know that if we make *Square* a subclass of *Rectangle* that *Square* will inherit all of the instance variables of *Rectangle*: *mX*, *mY*, *mWidth*, and *mHeight*. *Square* will also be able to call any of the **public** or **protected** methods of *Rectangle* (which is all of them).

15. Inheritance :: Revising the Design of the *Square* Class (continued)

Since *Rectangle* declares *mX* and *mY* and provides accessor/mutator methods *getX*(), *getY*(), *setX*(), and *setY*(), I hope you see that that there is no reason for *Square* to duplicate those variables and methods. There is also no reason to duplicate the *move*() method because moving a *Square* is identical to moving a *Rectangle*. Furthermore, *Square* will inherit *mWidth* and *mHeight* so rather than having *Square* declare a new instance variable to represent the side length, we can simply reuse *mWidth* and *mHeight*, i.e., a *Square* is a *Rectangle* for which *mWidth* always equals *mHeight*.