

Exercises book

Review Questions

8.9

Is fruit instanceof Orange true? false

Is fruit instanceof Apple true? true

Is fruit instanceof GoldDelicious true? true

Is fruit instanceof Macintosh true? false

Is orange instanceof Orange true? true

Is orange instanceof Fruit true? true

Is orange instanceof Apple true? false

Suppose the method makeApple is defined in the Apple class. Can fruit invoke this method? Yes

Can orange invoke this method? No

Suppose the method makeOrangeJuice is defined in the Orange class. Can orange invoke this method? Yes.

Can fruit invoke this method? No.

Extra exercise

You can find the complete source code of this exercise on your CD-ROM. Disadvantages of inheritance is that some of the methods that are inherited from the superclass might not make much sense in the subclass anymore. For instance `getNumberOfRows()`, `getNumberOfColumns()`. Another problem is that sometimes you might want to give a certain method a different return type, which is not possible (without giving the method a different name). Example: the method `getValues()` returns a two-dimensional array of double values, but for a vector you might want a one-dimensional array.

Using aggregation you can solve these problems, but a disadvantage of aggregation is that you might have to rewrite a lot of methods that already exist in Matrix. On the CD-ROM you can also find a Vector implementation using aggregation.