ELEC 2543 Object-Oriented Programming and Data Structures

Programming Exercise 3

Topics: Creating objects, Aliases

Released: Feb 7, 2025 (Friday)

Due: 9:30am, Feb 17, 2025 (Monday)

Overview: In this exercise, given a class definition but not the class codes, you have to develop the fragment of codes that produces the required output. You have to use VPL for this programming exercise. **Please note that some functions may not work if you use VPL outside campus.**

Suppose you are given a class called Fraction2 that has all the features of class Fraction in Lab 2 with the following additional functions.

1. public void square()

This method squares the fraction. The numerator and denominator of the object are permanently changed to the square of the original fraction.

1. public Fraction2 copy()

This method creates a copy of the fraction. That is, a new Fraction2 object is created with the same values as the nominator and the denominator of the calling object. This new object is returned to users. The original object is not changed.

1. public Fraction2 inverse()

This method creates a new Fraction2 object that is the inverse of the calling object. The new object is returned to users. The original object is not changed.

Download TestAlias.java. You have to put in appropriate statements just before the println statements to produce the output below.

Case 1: f1 = 4/9; f2 = 4/9; f3 = 1/3

Case 2: f1 = 4/9; f2 = 1/9; f3 = 1/3

Case 3: f1 = 2/3; f2 = 3/2; f3 = 9/4

You cannot use new statement. You should also try to create as few Fraction2 objects as possible.