

CS101: Quiz #9, April 15, 2009

SOLUTION

1. Use the `RationalNumber` class which we discussed in class and in the book, to write a driver class which allows the user to enter many rational numbers (numerator first, then denominator), until the end of file marker `CONTROL<D>`. Compute the sum of all these entered as a rational number. Print this sum, in rational number format, to the screen.

Solution:

```
import java.util.Scanner;
public class SumRational{
    public static void main (String[] args){
        Scanner scan = new Scanner (System.in);
        RationalNumber sum = new RationalNumber (0,1);
        System.out.print("Enter rational numbers, as pairs of"
            + " integers with numerator first, denominator second,"
            + " and end with two <CONTROL>D's: ");
        while (scan.hasNext()){
            int numer, denom;
            numer = scan.nextInt();
            denom = scan.nextInt();
            RationalNumber x = new RationalNumber (numer, denom);
            sum = sum.add(x);
        }
        System.out.println("The sum is " + sum);
    }
}
```

Here is a list of the public methods of the `RationalNumber` class (these are the same as those discussed in class):

```
RationalNumber (int n, int d)
    // constructor with numerator n, denominator d
double decimal()
RationalNumber add (RationalNumber x)
    // returns the sum of this and x
RationalNumber subtract (RationalNumber x)
RationalNumber reciprocal()
RationalNumber multiply (RationalNumber x)
RationalNumber divide (RationalNumber x)
int getNumerator()
int getDenominator()
boolean isLike (RationalNumber x)
    // is true if this and x are same rational number
String toString()
```