

CS250 Intro to CSII  
ClassesI Lab

Problem: A rational number is defined to be any number that can be expressed in the form  $p/q$  where  $p$  and  $q$  are two integers and  $q$  is not equal to 0.

- 1) Create a class called Rational with two private members representing  $p$  and  $q$  in the above definition of a rational number. Further, create a constructor with default values of 0 and 1 for  $p$  and  $q$  respectively. The class Rational is to be created in a header file named Rational.h.
- 2) Implement the constructor for the class Rational in a file named Rational.cpp.
- 3) Write a driver in RationalDriver.cpp that creates two Rational objects where one is created using the default constructor and the other creates a Rational object representing the rational number 4.
- 4) Add a public print method to Rational that will print a Rational object in the form  $p/q$ . The print method is to accept an ostream object. Print both rational numbers to the screen.
- 5) Write 2 accessors for getting the numerator and denominator.
- 6) Write 2 mutators for setting the numerator and denominator.
- 7) Set each Rational object to  $2/3$  and  $4/5$  and then print out each object.
- 8) Write a method bIsEqual that returns true if both Rational objects are equal; otherwise, false is returned. Test your method.
- 9) Write a method multiply that multiplies two Rational objects and returns a Rational object. Test your method.