

CS250 Intro to CSII Classes 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 each integers and q is not equal to 0.

In your CS250InClass Solution, create a new project called Rational. Then do the following:

- 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 ($p = 4, q = 1$).
- 4) Add a public print function 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) In the driver, create Rational objects to represent $2/3$ and $4/5$ and then print out each object.
- 8) Add a function **equals** to class Rational that returns true if both Rational objects are equal; otherwise, false is returned. Test your method.
- 9) Add a function **multiply** to class Rational that multiplies two Rational objects and returns a Rational object.