University of Regina

Software Systems Engineering

Winter term, February 2018 ENSE-350

Lab# 01

Implement the following.

1. The Euclidean algorithm. A recursive method that computes the gcd of two numbers a and b using the Euclidean algorithm: $\gcd(a,b) = \gcd(b, rem(a,b))$.
2. The Pulverizer or the Extended Euclidean algorithm. This method should ask the user for two integers (a and b) and compute the values of s , t and $\gcd(a,b)$ in the following equation: $\gcd(a,b) = sa + tb$
3. An algorithm that accepts the numerator and denominator of a fraction as input and produces as output the numerator and denominator of that fraction written in lowest terms.

Notes:

a) Your application should NOT be using any built in libraries.
b) Use may use the (%) operator to compute the remainder.
c) The algorithm in Question-3 may call the Euclidean algorithm if required.