Lab 2 Programming Assignments

Problem 1: Write a python program to implement the **Fraction** class. Define appropriate constructors. Define the following methods in the Fraction class:

i. *inverse(self):* returns the inverse of the fraction *self*.
ii. *add(self,f):* adds fraction *f* to the fraction *self* and returns the result.
iii. *subtract(self,f):* subtracts fraction *f* from the fraction *self* and returns the result.
iv. *multiply(self,f):* multiplies fraction *f* to the fraction *self* and returns the result.
v. *divide(self,f):* divides fraction *f* from the fraction *self* and returns the result.
vi. *__str__ (self):* returns a string representation of the fraction *self*. (Ensure this works by printing the fraction to the console).

Problem 2: Implementing Singly Linked List in Python. Define python classes **LinkedList** and **ListNode** to implement Singly Linked Lists. Define appropriate constructors. Write methods to insert, search and delete elements in the list. You should also write helper methods like length, isEmpty and __str__. (Do **NOT** use Python's inbuilt **List** data structure for this assignment)