Programming and Data Structures Lab (CS2710)
Lab Assignment-04: *Linked List*

Date: 29/8/16

1. Download resources from moodle and implement functions declared in **"List.h"** in "List.c". If everything implemented correctly, exectuting "./run" must pass every line of output.
2.

   Implement Polynomial (of a single variable) ADT using: Linked List
   Representation: To keep Coefficient and Exponent – (a) Use structures as a node of the list
   Operations over the polynomials:
   1) Print a polynomial (As explained below)
   2) Degree of a polynomial,
   3) Add two polynomials,
   4) Subtract two polynomials,
   5) Multiply two polynomials,
   6) Evaluate a polynomial (when user inputs a value of polynomial variable)

Write separate functions for each operation. Assuming the numbering in problem statement to be options for the operation, upon execution, user must be prompted to enter the option number(-1 to terminate) followed by desired input for that particular operation.

Explanation:
> **Option 1 & 2:**
> > t (number of terms in the polynomial)
> > **t** space separated integers in increasing order denoting the exponents
> > **t** space separated integers denoting the coefficients of the respective exponents
>
> **Option 3 & 4 & 5:**
> > t1 (number of terms in the first polynomial)
> > **t1** space separated integers in ascending order denoting the exponents
> > **t1** space separated integers denoting the coefficients of the respective exponents
> > t2 (number of terms in the polynomial)
> > **t2** space separated integers in increasing order denoting the exponents
> > **t2** space separated integers denoting the coefficients of the respective exponents
>
> **Option 6:** first three lines same as for **option 1 & 2**
> > **k** value of the variable polymoial will be evaluate at

Expected output:
> **option 1:** for a 4 degree polynomial – $a_0+a_1x+a_2x^\wedge2+a_3x^\wedge3+a_4x^\wedge4$
> where a0,a1.... are coefficients.
>
> **option 2:** a single integer, i.e. degree of the polynomial
> **option 3 & 4 & 5**: resulting Polynomial in the same format as in **option 1**
> **option 6:** value of the polynomial at variable= k

Note: You will require the list implementation in q1 to complete q2