

ASSIGNMENT 5

1) Design, Develop and Implement a Program in C for the following operations on Singly Circular Linked List (SCLL) with header nodes.

- a. Represent and Evaluate a Polynomial $P(x,y,z) = 6x^2y^2z - 4yz^5 + 3x^3yz + 2xy^5z - 2xyz^3$
- b. Find the sum of two polynomials POLY1 (x,y,z) and POLY2 (x,y,z) and store the result in POLYSUM (x,y,z)

2) Design, Develop and Implement a Program in C for the following operations on Singly Linked List: i) Adding two polynomials using Linked List

Given two polynomial numbers represented by a linked list. Write a function that add these lists means add the coefficients who have same variable powers.

Example:

Input:

1st number = $5x^2 + 4x^1 + 2x^0$

2nd number = $5x^1 + 5x^0$

Output:

$5x^2 + 9x^1 + 7x^0$

3) Write a function to get the intersection point of two Linked Lists.

Considering the example given above, start traversing the two linked lists with two pointers **curr1** and **curr2** pointing to the heads of the given linked lists respectively.

1. If **curr1** != **null** then update it to point to the next node, else it is updated to point to the first node of the second list.
2. If **curr2** != **null** then update it to point to the next node, else it is updated to point to the first node of the first list.
3. Repeat the above steps while **curr1** is not equal to **curr2**.