Experiment Name / No.: 9

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POLYNOMIAL USING LINKED LIST

AIM

write a menu driven C program to represent polynomials using linked list and perform polynomial addition and multiplication.

ALGORITHM

→ poly-add (node* P1, node *P2) function
start
Repeat while (P1 ≠ NULL and P2 ≠ NULL)
2.1 if (P1 → expo > P2 → expo)
2.1.1 start3 = insert (start3, P1 → coeff, P1 → expo)
2.1.2 P1 = P1 → Link
2.2 else if (P2 → expo > P1 → expo)
2.2.1 start3 = insert (start3, P2 → coeff, P2 → expo)
2.2.2 P2 = P2 → Link
2.3 else if (P2 → exp = P1 → expo)
2.3.1 start3 = insert (start3, P1 → coeff + P2 → coeff, P1 → expo)
2.3.2 P1 = P1 → link
2.3.3 P2 = P2 → link
2.4 Repeat while P1 ≠ NULL
2.4.1 start3 = insert (start3, P1 → coeff, P1 → expo)
2.4.2 P1 = P1 → link

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2.5 Repeat while P2 ≠ NULL

2.5.1 start3 = insert (start3, p2 -> coeff, p2 -> expo).

2.5.2 P2 ⇒ P2 -> link.

3. Display the added polynomial.

4 stop.

-> poly-multi(node *p1, node *p2) function

1 start

2 *p2_beg = P2.

3 if P1 = NULL or P2 = NULL

3.1 Display, multiplied polynomial is zero polynomial

4. Repeat while P1 ≠ NULL

4.1 P2 = P2_beg

4.2 Repeat while P2 ≠ NULL

4.2.1 start3 = insert_s(start3, P1 -> coeff * P2 -> coeff
, P1 -> expo + P2 -> expo);

4.2.2 P2 = P2 -> link

4.3 P1 = P1 -> link

5 display the multiplied polynomial.

6. stop

CONCLUSION

The program has been executed correctly and output has been verified

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