

# Polynomial Linked List

```
#include <stdio.h>
#include <stdlib.h>
#include <math.h>

struct Node
{
    int coeff;
    int exp;
    struct Node *next;
}*poly=NULL;

void create()
{
    struct Node *t,*last=NULL;
    int num,i;

    printf("Enter number of terms");
    scanf("%d",&num);
    printf("Enter each term with coeff and exp\n");

    for(i=0;i<num;i++)
    {
        t=(struct Node *)malloc(sizeof(struct Node));
        scanf("%d%d",&t->coeff,&t->exp);
        t->next=NULL;
        if(poly==NULL)
        {
            poly=last=t;
        }
        else
        {
            last->next=t;
            last=t;
        }
    }
}
```

```
void Display(struct Node *p)
{
    while(p)
    {
        printf("%dx%d +", p->coeff, p->exp);
        p=p->next;
    }
    printf("\n");
}
```

```
long Eval(struct Node *p, int x)
{
    long val=0;

    while(p)
    {
        val+=p->coeff*pow(x, p->exp);
        p=p->next;
    }
    return val;
}
```

```
int main()
{
    create();
    Display(poly);
    printf("%ld\n", Eval(poly, 1));

    return 0;
}
```