Application of linked lists

Stacks and Queues ,
Polynomial handling

Inserting an element in a sorted linked list.

Let the data be sorted and put in a singly linked linear list which is being pointed by address “head “.
Let the new data to be entered be “d”.
Use malloc get a node with address “pNew”.
Suppose we want to write a code to enter data “d” into the node and insert it into its proper place in the list.

```
typedef struct node {
      int data;
      struct node  *next;
   };

struct node* pNew = (struct node*)
(malloc(sizeof(struct node)));

pNew -> data = d;
pNew ->next = NULL;
pCur = head ;
```

/* check if data is smaller than smallest item on the list*/

```
if (pNew -> data  <   pCur -> data )
 {
       pNew ->next = pCur ;
       head = pNew;
  }
```

/* now examine the remaining list */

```
p = pCur -> next ;

while(p!=NULL ||p->data <  pNew->data )
 {
        pCur = pCur -> next ;
       p = p -> next ;
 }

pNew -> next = pCur -> next;
pCur -> next = pNew ;
```