```
/***************************************************************************


                    Online C Compiler.

            Code, Compile, Run and Debug C program online.
Write your code in this editor and press "Run" button to compile and execute it.


***************************************************************************/


#include <stdio.h>
#include <stdlib.h>
struct abc
{
    int data;
    struct abc *next;
    struct abc *prv;
};
int main()
{
    int ch,n,pos;
    printf("Enter choice:\n");
    printf("1.create 2.insert at start 3,insert at middle 4.insert at end 5.delete at start\n6.delete
at middle 7.delete at ending 8.display\n ");
    scanf("%d",&ch);
    struct abc *head,*new,*temp;
    head = (struct abc*)malloc(sizeof(struct abc));
    printf("Enter number of nodes:\n");
    scanf("%d",&n);
    printf("Enter data:\n");
    scanf("%d",&head->data);
    head->next = NULL;
    head->prv = NULL;


    temp = head;
```

```c
for(int i=0;i<n-1;i++)
{
   new = (struct abc *)malloc(sizeof(struct abc));
   scanf("%d",&new->data);
   new->prv = NULL;
   new->next =NULL;
   new->prv = temp;
   temp->next = new;
   temp = temp->next;
}
temp = head;
while(temp!=NULL)
{
  printf("%d ",temp->data);
  temp = temp->next;
}


new = (struct abc*)malloc(sizeof(struct abc));
printf("Enter data to insert at initial:\n");
scanf("%d",&new->data);
new->next = NULL;
new->prv = NULL;
new->next = head;
head->prv = new;
head = new;
temp =head;
while(temp!=NULL)
{

  printf("%d ",temp->data);
  temp = temp->next;
}
```

```c
new = (struct abc*)malloc(sizeof(struct abc));
printf("Enter data:\n");
scanf("%d",&new->data);
new->next = NULL;
new->prv = NULL;
printf("Enter position\n");
scanf("%d",&pos);
int i=1;

struct abc *p =head;
 temp = head;
while(i!=pos)
{
    p = temp;
    temp = temp->next;
    i++;
}
new->prv = p;
new->next = temp;
temp->prv = new;
p->next = new;

printf("After inserting at %d \n",pos);
temp = head;
while(temp!=NULL)
{

  printf("%d ",temp->data);
  temp = temp->next;
}
```

```c
new = (struct abc *)malloc(sizeof(struct abc));
printf("Enter data to insert at end:\n");
scanf("%d",&new->data);
new->next = NULL;
new->prv = NULL;
temp = head;
//struct abc *p;
while(temp->next != NULL)
{
   temp = temp->next;
}
temp->next = new;
new->prv = temp;
printf("After inserting at end \n");
temp = head;
while(temp!=NULL)
{
  printf("%d ",temp->data);
  temp = temp->next;
}


printf("Deleting 1st element:\n");
//struct abc *temp;
temp = head;
head = head->next;
free(temp);
printf("After deleting at start \n");
temp = head;
while(temp!=NULL)
{
  printf("%d ",temp->data);
```

```c
    temp = temp->next;
  }

  printf("Enter position\n");
  scanf("%d",&pos);
  printf("Deleting element at %d\n",pos);
  //struct abc *p;
  temp = head;
   i=0;
  while(i!=pos)
  {
    p = temp;
    temp = temp->next;
    i++;
  }
  p->next = temp->next;
  temp->next->prv = p;
  free(temp);
  printf("After deleting at %d \n",pos);
  temp = head;
  while(temp!=NULL)
  {
    printf("%d ",temp->data);
    temp = temp->next;
  }

  printf("For deletion at end:\n");
  temp = head;
  //struct abc *p;
  while(temp->next!=NULL)
  {
    p = temp;
```

```c
      temp = temp->next;
   }
   p->next=NULL;
   free(temp);
   printf("After deleting at end \n");
   temp = head;
   while(temp!=NULL)
   {
     printf("%d ",temp->data);
     temp = temp->next;
   }
   return 0;
}
```