2.// deletion of the data from the linkedlist

```
#include <stdio.h>
#include<stdlib.h>
typedef struct Node {
 int data;
 struct Node *next;
}Node;
void InsertAtBeginning( Node **head_ref,int new_data);
void DeleteAtBeginning( Node **head_ref);
void DeleteAtEnd( Node **head_ref);
void Delete( Node **prev_node,int pos);
void PrintList(Node * next);
void InsertAtBeginning( Node **head_ref,int new_data)
{
 Node *new_node=(struct Node*)malloc(sizeof( Node));
 new_node->data=new_data;
 new_node->next=*head_ref;
 *head_ref=new_node;
}
void DeleteAtBeginning( Node **head_ref)
{
 Node *ptr;
if(head_ref == NULL)
{
printf("\nList is empty");
}
```

```
else
{
ptr = *head_ref;
*head_ref = ptr->next;
free(ptr);
printf("\n Node deleted from the beginning ...");
}
}
void DeleteAtEnd(Node **head_ref)
{
 Node *ptr,*ptr1;
if(*head_ref == NULL)
{
printf("\nlist is empty");
}
else if((*head_ref)-> next == NULL)
{
free(*head_ref);
*head_ref= NULL;
printf("\nOnly node of the list deleted ...");
}
else
{
ptr = *head_ref;
while(ptr->next != NULL)
{
```

```
ptr1 = ptr;
ptr = ptr ->next;
}
ptr1->next = NULL;
free(ptr);
printf("\n Deleted Node from the last ...");
}
}
void Delete(Node **head_ref, int pos)
{
 Node *temp = *head_ref, *prev;
 if (temp == NULL)
 {
 printf("\nList is empty");
 return;
 }
 if (pos == 1)
 {
 *head_ref = temp->next;
 free(temp);
 printf("\nDeleted node with position %d", pos);
 return;
 }
 for (int i = 0; temp != NULL && i < pos - 1; i++)
 {
 prev = temp;
```

```
 temp = temp->next;
 }
 if (temp == NULL)
 {
 printf("\nPosition out of range");
 return;
 }
 prev->next = temp->next;
 free(temp);
 printf("\nDeleted node with position %d", pos);
}
void PrintList(Node *node)
{
 while (node!=NULL)
 {
 printf("%d\n",node->data);
 node=node->next;
 }
}
int main()
{
 int ch,new,pos;
 Node* head=NULL;
 while(ch!=6)
 {
 printf("Menu\n");
```

```
printf("1.Create a linked list\n");
printf("2.Delete at beginning\n");
printf("3.Delete at a specific position\n");
printf("4..Delete at end\n");
printf("5..Display linked list\n");
printf("6..Exit\n");
printf("Enter your choice\n");
scanf("%d",&ch);
switch(ch)
{
case 1:
{
printf("Enter the data you want to insert at beginning\n");
scanf("%d",&new);
InsertAtBeginning(&head,new);
break;
}
case 2:
{
DeleteAtBeginning(&head);
break;
}
case 3:
{
printf("Enter the position at which you want to delete \n");
scanf("%d",&pos);
```

```
Delete(&head,pos);
break;
}
case 4:
{
DeleteAtEnd(&head);
break;
}
case 5:
{
printf("Created linked list is:\n");
PrintList(head);
break;
}
case 6:
{
return 0;
break;
}
default:
{
printf("Invalid data!");
break;
}
}
}
```

```
return 0;
}
```

output:

```
Menu
1.Create a linked list
2.Delete at beginning
3.Delete at a specific position
4..Delete at end
5..Display linked list
6..Exit
Enter your choice
1
Enter the data you want to insert at beginning
20
Menu
1.Create a linked list
2.Delete at beginning
3.Delete at a specific position
4..Delete at end
5..Display linked list
6..Exit
Enter your choice
1
Enter the data you want to insert at beginning
21
Menu
```

1.Create a linked list

2.Delete at beginning

3.Delete at a specific position

13

4..Delete at end

5..Display linked list

6..Exit

Enter your choice

1

Enter the data you want to insert at beginning

22

Menu

1.Create a linked list

2.Delete at beginning

3.Delete at a specific position

4..Delete at end

5..Display linked list

6..Exit

Enter your choice

5

Created linked list is:

22

21

20

Menu

1.Create a linked list

2.Delete at beginning

3.Delete at a specific position

4..Delete at end

5..Display linked list

14

6..Exit

Enter your choice

4

Deleted Node from the last ...Menu

1.Create a linked list

2.Delete at beginning

3.Delete at a specific position

4..Delete at end

5..Display linked list

6..Exit

Enter your choice

5

Created linked list is:

22

21

Menu

1.Create a linked list

2.Delete at beginning

3.Delete at a specific position

4..Delete at end

5..Display linked list

6..Exit

Enter your choice

1

Enter the data you want to insert at beginning

5

Menu

1.Create a linked list

2.Delete at beginning

3.Delete at a specific position

4..Delete at end

5..Display linked list

6..Exit

Enter your choice

1

Enter the data you want to insert at beginning

45

Menu

1.Create a linked list

2.Delete at beginning

3.Delete at a specific position

4..Delete at end

5..Display linked list

6..Exit

Enter your choice

4

Deleted Node from the last ...Menu

1.Create a linked list

2.Delete at beginning

3.Delete at a specific position

4..Delete at end

5..Display linked list

6..Exit

Enter your choice

5

Created linked list is:

45

5

22

Menu

1.Create a linked list

2.Delete at beginning

3.Delete at a specific position

4..Delete at end

5..Display linked list

6..Exit

Enter your choice

6

Process returned 0 (0x0) execution time : 208.114 s

Press any key to continue.

1