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#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");
    }
}

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}

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 == 0)
    {
        *head_ref = temp->next;
    }
}

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    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);
            }
        }
    }
}

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    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;
}

```

```
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
12
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
5
Created linked list is:
45
5
12
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
```

```
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
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
2

  Node deleted from the beginning ...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:
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
6
```