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#include<stdio.h>
#include<stdlib.h>
struct node{
    int data;
    struct node *link;
};
struct node* header = NULL;
void display();
void insertAtBeg();
void insertAtEnd();
void insertAtPos();
void deleteBeg();
void deleteEnd();
void deletePos();
int main()
{
    int choice;
    char ch;
    while (1) {
        printf("1.Display\n2.Insert at beginning\n3.insert at
end\n4.insert at specific pos\n5.delelte at
beginning\n6.delete at end\n7.delete at specifc pos\n");
        scanf("%d", &choice);

        switch (choice) {
            case 1:
                display();
                break;
            case 2:
                insertAtBeg();
                break;
            case 3:
                insertAtEnd();
                break;
            case 4:
                insertAtPos();
                break;
            case 5:
                deleteBeg();
                break;
            case 6:
                deleteEnd();
                break;
            case 7:

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        deletePos();
        break;
    default:
        printf("Incorrect Choice\n");
    }
    printf("\nDo you want to continue y/n ");
    scanf(" %ch",&ch);
    if(ch == 'n'){
        break;
    }
}
return 0;
}

void display(){
    struct node*temp;
    if(header==NULL)
        printf("Empty");
    else{
        temp = header;
        while (temp!=NULL)
        {
            printf("%d\t",temp->data);
            temp = temp->link;
        }

    }

}

void insertAtBeg(){
    int data;
    struct node* temp;
    temp = malloc(sizeof(struct node));
    printf("Enter number ");
    scanf("%d",&data);
    temp->data=data;
    temp->link=header;
    header = temp;
}

void insertAtEnd(){
    int data;
    struct node*temp,*ptr;
    temp = malloc(sizeof(struct node));
    printf("Enter the number");
    scanf("%d",&data);

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    temp->link=NULL;
    temp->data= data;
    ptr = header;
    while(ptr->link!=NULL){
        ptr=ptr->link;
    }
    ptr->link=temp;
}

void insertAtPos() {
    struct node *temp, *newnode;
    int pos, data, i = 1;
    newnode = malloc(sizeof(struct node));
    printf("\nEnter position and data ");
    scanf("%d %d", &pos, &data);
    temp = header;
    newnode->data = data;
    newnode->link = 0;
    while (i < pos - 1) {
        temp = temp->link;
        i++;
    }
    newnode->link = temp->link;
    temp->link = newnode;
}

void deleteBeg() {
    struct node* temp;
    if (header == NULL)
        printf("\nEmpty");
    else {
        temp = header;
        header = header->link;
    }
}

void deleteEnd() {
    struct node *temp, *prevnode;
    if (header == NULL)
        printf("\nEmpty");
    else {
        temp = header;
        while (temp->link != 0) {
            prevnode = temp;
            temp = temp->link;
        }
    }
}

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        prevnode->link = 0;
    }
}

void deletePos(){
    struct node *temp, *position;
    int i = 1, pos;
    if (header == NULL)
        printf("\nEmpty");
    else {
        printf("\nEnter pos");
        scanf("%d", &pos);
        position = malloc(sizeof(struct node));
        temp = header;
        while (i < pos - 1) {
            temp = temp->link;
            i++;
        }
        position = temp->link;
        temp->link = position->link;
    }
}

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