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1  #include <stdio.h>
2  #include <stdlib.h>
3  #include <string.h>
4  struct node
5  {
6      int sem;
7      char name[50];
8      char usn[50];
9      struct node *next;
10 };
11 struct node *head= NULL;
12 int c=0;
13 void Insertbegining()
14 {
15     struct node *newnode;
16     int s;
17     char a[50],b[50];
18     printf("Enter your name : ");
19     scanf("%s",a);
20     printf("Enter your usn : ");
21     scanf("%s",b);
22     printf("Enter your semester : ");
23     scanf("%d",&s);
24
25     newnode=(struct node*)malloc(sizeof(struct node));
26     newnode->sem =s;
27     strcpy(newnode->name,a);
28     strcpy(newnode->usn,b);
29
30     newnode->next=head;
31     head=newnode;
32     c++;
33     printf("Node created\n");
34 }
35 void Insertany(int p)
36 {
37     struct node *newnode;

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struct node *newnode;
int s;
char a[30],b[30];
printf("Enter your name : ");
scanf("%s",a);
printf("Enter your usn : ");
scanf("%s",b);
printf("Enter your semester : ");
scanf("%d",&s);

newnode=(struct node*)malloc(sizeof(struct node));
newnode->sem =s;
strcpy(newnode->name,a);
strcpy(newnode->usn,b);
if(p==1)
{
    printf("Node of linked list is inserted in the first position\n");
    newnode->next=head;
    head=newnode;
    c++;
}
else if(head==NULL && p>1)
{
    printf("the list is empty and node cannot be created\n");
    return;
}
else if(p>(c+1))
{
    printf("Not possible since number of nodes existing in the list is insufficient\n");
    return;
}
else
{

```



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69 {
70     struct node *temp1;
71     struct node *temp2;
72     int count=1;
73     temp1=head;
74     while(count<(p-1))
75     {
76         temp1= temp1->next;
77         count++;
78     }
79     temp2= temp1->next;
80     temp1->next=newnode;
81     newnode->next=temp2;
82     c++;
83     printf("Node inserted at %d position in linked list\n",p);
84 }
85 }
86
87 void Insertend()
88 {
89     struct node *newnode;
90     struct node *temp;
91     int s;
92     char n[30],u[30];
93     printf("Enter your name : ");
94     scanf("%s",n);
95     printf("Enter your semester : ");
96     scanf("%d",&s);
97     printf("Enter your usn : ");
98     scanf("%s",u);
99     newnode=(struct node*)malloc(sizeof(struct node));
100     newnode->sem =s;
101     strcpy(newnode->name,n);
102     strcpy(newnode->usn,u);
103     if (head==NULL)
104     {

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104- {
105     newnode->next=NULL;
106     head=newnode;
107     printf("first node of linked list created\n");
108     c++;
109 }
110 else
111 {
112     temp=head;
113     while(temp->next!=NULL)
114     {
115         temp=temp->next;
116     }
117     temp->next=newnode;
118     newnode->next=NULL;
119     c++;
120     printf("Node created\n");
121 }
122 }
123 void display()
124 {
125     struct node *ptr;
126     ptr=head;
127     int i=1;
128
129     if(ptr==NULL)
130     {
131         printf("Linked list is empty!\n");
132     }
133     else
134     {
135         while(ptr!= NULL)
136         {
137             printf("----NODE %d----\n",i);
138             printf("Name: %s\n",ptr->name);
139             printf("USN: %s\n",ptr->usn);

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41     printf("\n");
42     l++;
43     ptr=ptr->next;
44 }
45 }
46 }
47 }
48 }
49 }
50 }
51 int main()
52 {
53     int choice,pos;
54     do
55     {
56         printf("\n1. Insert node at beginning of the list\n2. Insert node anywhere in the list\n3. Insert at the end of list\n4. Display list\n5. Exit\n");
57         printf("\nEnter your choice : ");
58         scanf("%d",&choice);
59         if(choice==5)
60             break;
61         switch(choice)
62         {
63             case 1:
64                 Insertbegining();
65                 break;
66             case 2:
67                 printf("Enter in which position of the list you want to enter your node\n");
68                 scanf("%d",&pos);
69                 Insertany(pos);
70                 break;
71             case 3:
72                 Insertend();
73             case 4:
74                 Displaylist();
75             case 5:
76                 break;
77         }
78     } while(choice!=5);
79 }

```

```

int choice,pos;
do
{
    printf("\n1. Insert node at beginning of the list\n2. Insert node anywhere in the list\n3. Insert at the end of list\n4. Display list\n5. Exit\n");
    printf("\nEnter your choice : ");
    scanf("%d",&choice);
    if(choice==5)
        break;
    switch(choice)
    {
        case 1:
            Insertbegining();
            break;


        case 2:
            printf("Enter in which position of the list you want to enter your node\n");
            scanf("%d",&pos);
            Insertany(pos);
            break;

        case 3:
            Insertend();
            break;

        case 4:
            display();
            break;

        default:
            printf("Wrong choice!\n");
            break;
    }
}while(choice!=5);
return 0;
}

```


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1. Insert node at beginning of the list
 2. Insert node anywhere in the list
 3. Insert at the end of list
 4. Display list
 5. Exit

Enter your choice : 1

Enter your name : rahul

Enter your usn : 12345

Enter your semester : 3

Node created

1. Insert node at beginning of the list
2. Insert node anywhere in the list
3. Insert at the end of list
4. Display list
5. Exit

Enter your choice : 2

Enter in which position of the list you want to enter your node

2

Enter your name : rakesh

Enter your usn : 67894

Enter your semester : 3

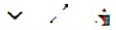
Node inserted at 2 position in linked list

1. Insert node at beginning of the list
2. Insert node anywhere in the list
3. Insert at the end of list
4. Display list
5. Exit

Enter your choice : 3

Enter your name : ramesh

Enter your semester : 3

- 
1. Insert node at beginning of the list
 2. Insert node anywhere in the list
 3. Insert at the end of list
 4. Display list
 5. Exit

Enter your choice : 3
Enter your name : ramesh
Enter your semester : 3
Enter your usn : 45678
Node created

1. Insert node at beginning of the list
2. Insert node anywhere in the list
3. Insert at the end of list
4. Display list
5. Exit

Enter your choice : 4
----NODE 1----
Name: rahul
USN: 12345
Sem: 3

----NODE 2----
Name: rakesh
USN: 67894
Sem: 3

----NODE 3----
Name: ramesh
USN: 45678
Sem: 3