```c
#include <stdio.h>
#include <stdlib.h>
#include <string.h>
struct node
{
    int sem;
    char name[50];
    char usn[50];
    struct node *next;
};
struct node *head= NULL;
int c=0;
void Insertbegining()
{
    struct node *newnode;
    int s;
    char a[50],b[50];
    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);

    newnode->next=head;
    head=newnode;
    c++;
    printf("Node created\n");
}
void Insertany(int p)
{
    struct node *newnode;
```

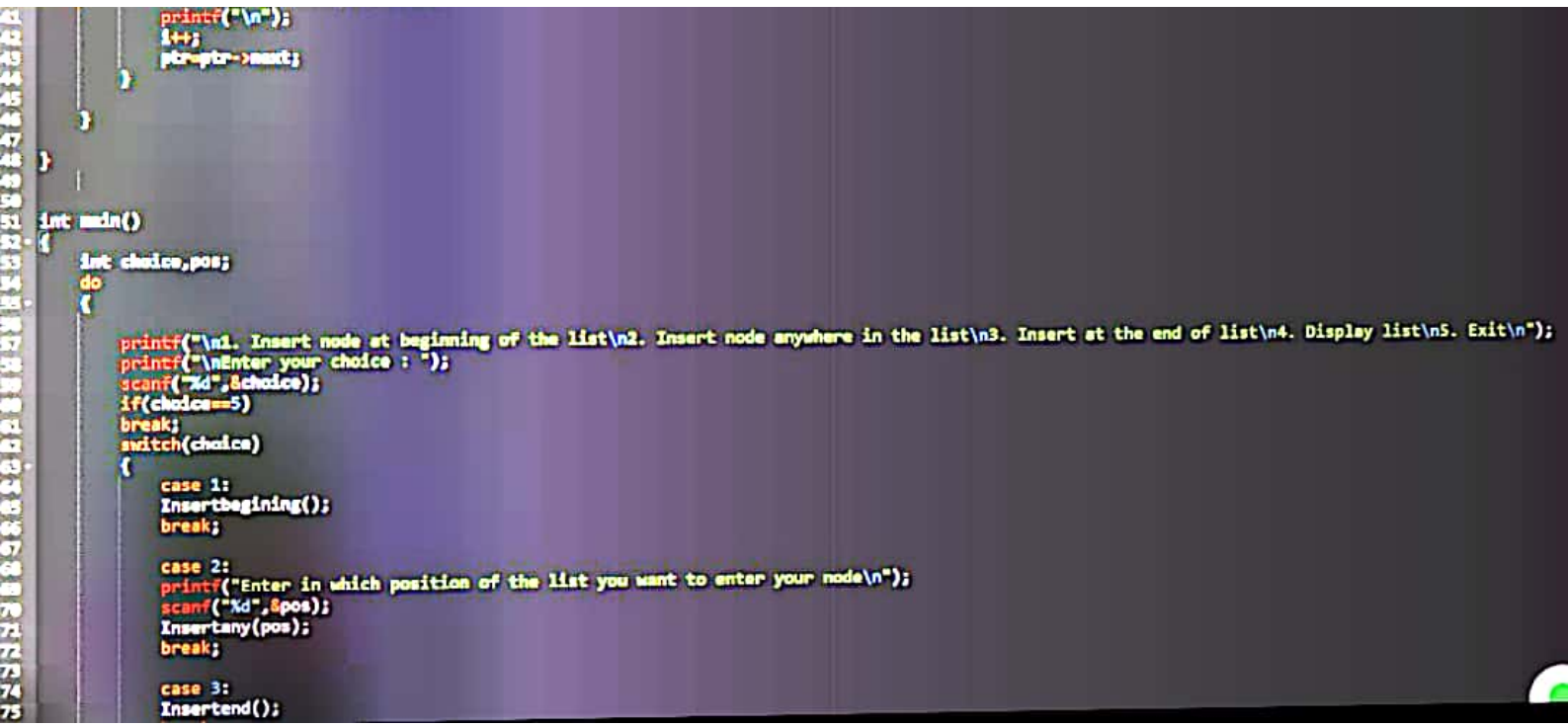
```
{
    struct node *newnode;
    int s;
    char a[30],b[30];
    printf("Enter your name  : ");
    scanf("%s",a);
    printf("Enter your usn  : ");
    scanf("%s",b);
    printf("Enter your semester  : ");
    scanf("%d",&s);

    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
    {
```

```
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));
00      newnode->sem =s;
01      strcpy(newnode->name,n);
02      strcpy(newnode->usn,u);
03      if (head==NULL)
04      {
```

```
    {
      newnode->next=NULL;
      head=newnode;
      printf("first node of linked list created\n");
      c++;
    }
    else
    {
       temp=head;
       while(temp->next!=NULL)
       {
           temp=temp->next;
       }
       temp->next=newnode;
       newnode->next=NULL;
       c++;
       printf("Node created\n");
    }
}
void display()
{
    struct node *ptr;
    ptr=head;
    int i=1;

    if(ptr==NULL)
    {
        printf("Linked list is empty!\n");
    }
    else
    {
        while(ptr!= NULL)
        {
            printf("----NODE %d----\n",i);
            printf("Name: %s\n",ptr->name);
            printf("USN: %s\n",ptr->usn);
```



```
            printf("\n");
            i++;
            ptr=ptr->next;
        }
    }
}

int main()
{
    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();
```

```
    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;
}
```

```
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
```