

5) Singly Linked List Program

```
#include <stdio.h>
#include <string.h>
#include <stdlib.h>
void create();
void del(char*);
void display();
void inserthead();
struct node {
    char name[20];
    char id[10];
    int sex;
    struct node *next;
};
struct node *head = NULL;

void main() {
    int c;
    char ele[10];
    do {
        printf("Enter choice : 1. Create 2. Display 3. Delete 4. Insert in the Beginning 5. Exit\n");
        scanf("%d", &c);
        switch(c) {
            case 1: create(); break;
            case 2: display(); break;
            case 3: printf("Enter the element id to be deleted\n");
                    scanf("%s", ele);
                    del(ele); break;
```



```
case 4: inserthead(); break;
```

```
case 5: exit(0); break;
```

```
}
```

```
} while(1);
```

```
}
```

```
void create() {
```

```
    struct node *newnode, *temp;
```

```
    char n[20], id1[10];
```

```
    int s;
```

```
    newnode = (struct node *) malloc(sizeof(struct node));
```

```
    printf("Enter the Name, USN, Semester: \n");
```

```
    scanf("%s", n);
```

```
    scanf("%s", id1);
```

```
    scanf("%d", &s);
```

```
    strcpy(newnode->name, n);
```

```
    strcpy(newnode->id, id1);
```

```
    newnode->sem = s;
```

```
    if (head == NULL) {
```

```
        newnode->next = NULL;
```

```
        head = newnode;
```

```
        printf("Node is created \n");
```

```
    } else {
```

```
        temp = head;
```

```
        while (temp->next != NULL)
```

```
            temp = temp->next;
```

```
        temp->next = newnode;
```

```
        newnode->next = NULL;
```

```
        printf("Node created \n");
```

```
    }
```

```
}
```

```
void display
```

```
{
```



```
struct node *ptr = NULL ;
ptr = head ;
if (ptr == NULL)
printf ("No element to print \n");
else {
while (ptr != NULL) {
puts (ptr -> name) ;
puts (ptr -> id) ;
printf (" %d \n", ptr -> sen) ;
ptr = ptr -> next ;
}
}

void del (char id1 [10]) {
struct node *temp, *del = NULL ;
if (head == NULL)
printf ("Empty list. \n") ; return ;
temp = head ;
if (strcmp (head -> id, id1) == 0)
head = head -> next ; return ;
while (temp -> next != NULL) {
if ((temp -> next -> id, id1) == 0) {
del = temp -> next ;
else
temp -> next = del -> next ;
}
else
temp = temp -> next ;
}
if (del == NULL)
printf ("Element not found \n") ; return ;
}
```



```
void inserthead() {  
    struct node *newnode;  
    char n[20], id[10];  
    int s;  
    printf("Enter the elements : Name, USN and Sem (n)");  
    scanf("%s", n);  
    scanf("%s", id);  
    scanf("%d", &s);  
    newnode = (struct node*) malloc(sizeof(struct node));  
    strcpy(newnode->name, n);  
    strcpy(newnode->id, id);  
    scanf("%d", &s);  
    newnode->next = head;  
    head = newnode;  
}
```