*Digital Assignment – 2*

***Question***

*Create a single linked list containing employee information such as ID, Name and Age.*

*Search for an employee, if employee information is found, then delete from the list and display the list.*

***Code***

#include<stdio.h>

#include<stdlib.h>

#include<string.h>

struct emp {

int id;

int age;

char name[30];

struct emp \*next;

};

// Make an single function to handle printing everything in the node

void printn(struct emp \*e) {

printf("\nEmployee Details: ");

printf("\nID: %d",e->id);

printf("\nName: %s",e->name);

printf("\nAge: %d",e->age);

}

struct emp \*ins(struct emp \*front, int id, char name[], int age) {

struct emp \*e;

e = (struct emp\*)malloc(sizeof(struct emp));

if(e==NULL) {

printf("\nCan't add new Employees\n");

exit(2);

}

strcpy(e->name,name);

e->id = id;

e->age = age;

e->next = front;

front = e;

return(front);

}

struct emp \*del(struct emp \*front, int id) {

struct emp \*p; // pointers being introduced

struct emp \*bp;

if(front->id==id) {

p = front;

printn(front);

printf("\nEmployee Found and Record Deleted\n");

front = front->next;

free(p);

return(front);

}

for(p=front->next,bp=front; p!=NULL;p=p->next,bp=bp->next) {

if(p->id==id) {

printn(p);

printf("\nEmployee Found and Record Deleted\n");

bp->next = p->next;

free(p);

return(front);

}

}

printf("\nEmployee ID %d not found \n",id);

return(front);

}

void display(struct emp \*front) {

struct emp \*p;

printf("\nCurrently...");

for(p=front;p!=NULL;p=p->next)

printn(p);

}

void main() {

struct emp \*ll;

char name[30];

int age, id, choice;

ll = NULL;

printf("Single Linked List\n\n");

printf("1. Add new employee\n");

printf("2. Search and Delete\n");

printf("3. Display All\n");

printf("Else: Exit");

do {

printf("\n\nEnter your choice: ");

scanf("%d",&choice);

switch(choice)

{

case 1:

printf("Enter ID: ");

scanf("%d",&id);

printf("Enter Name: ");

fflush(stdin);

gets(name);

printf("Enter Age: ");

scanf("%d",&age);

ll = ins(ll,id,name,age);

break;

case 2:

printf("Enter the ID to be searched and deleted: ");

scanf("%d",&id);

if(ll==NULL) {

printf("No Employees Registered");

break;

}

ll = del(ll,id);

// After deleting a node, the list should be displayed

// Hence removing "break" statement

case 3:

if(ll==NULL) {

printf("No Employees Registered");

break;

}

display(ll);

break;

default:

printf("\nProgram Closed\n\n");

choice=0;

}

} while(choice!=0);

}

***Output***

*Single Linked List*

*1. Add new employee*

*2. Search and Delete*

*3. Display All*

*Else: Exit*

*Enter your choice:* ***3***

*No Employees Registered*

*Enter your choice:* ***1***

*Enter ID:* ***3***

*Enter Name:* ***Ranjith***

*Enter Age:* ***18***

*Enter your choice:* ***1***

*Enter ID:* ***2***

*Enter Name:* ***Samyogita***

*Enter Age:* ***18***

*Enter your choice:* ***1***

*Enter ID:* ***1***

*Enter Name:* ***Allen***

*Enter Age:* ***19***

*Enter your choice:* ***3***

*Currently...*

*Employee Details:*

*ID: 1*

*Name: Allen*

*Age: 19*

*Employee Details:*

*ID: 2*

*Name: Samyogita*

*Age: 18*

*Employee Details:*

*ID: 3*

*Name: Ranjith*

*Age: 18*

*Enter your choice:* ***2***

*Enter the ID to be searched and deleted:* ***4***

*Employee ID 4 not found*

*Currently...*

*Employee Details:*

*ID: 1*

*Name: Allen*

*Age: 19*

*Employee Details:*

*ID: 2*

*Name: Samyogita*

*Age: 18*

*Employee Details:*

*ID: 3*

*Name: Ranjith*

*Age: 18*

*Enter your choice:* ***2***

*Enter the ID to be searched and deleted:* ***3***

*Employee Details:*

*ID: 3*

*Name: Ranjith*

*Age: 18*

*Employee Found and Record Deleted*

*Currently...*

*Employee Details:*

*ID: 1*

*Name: Allen*

*Age: 19*

*Employee Details:*

*ID: 2*

*Name: Samyogita*

*Age: 18*

*Enter your choice:* ***0***

*Program Closed*