SKILL DEVELOPMENT LAB-II(2018-19)

Assignment 8 :

Aim :

Department maintains a student info. The file contains roll no. , name , division and address. Allow user to add , delete info. Of student. Display info. Of a particular employee. If record of student does not exist in an appropriate message is diaplayed. If it is , then the system displays the student details. Use sequential file to maintain the data.

Objective :

We have to implement this using sequential file organization.

Theory : File is a collection of records related to each other. The file size is limited by the size of memory and storage medium.

File organization ensures that records are available for processing. It is used to determine an efficient file organization for each base relation.

Sequential access file organization:

- Storing and sorting in contiguous block within files on tape or disk is called as **sequential access file organization**.
- In sequential access file organization, all records are stored in a sequential order. The records are arranged in the ascending or descending order of a key field.
- Sequential file search starts from the beginning of the file and the records can be added at the end of the file.
- In sequential file, it is not possible to add a record in the middle of the file without rewriting the file.

Advantages of sequential file :

- It is simple to program and easy to design.
- Sequential file is best use if storage space

Program :

Output :

```
#include<iostream>
#include<fstream>
#include<conio.h>
using namespace std;
int pass;
struct student
{
string name, dept,dsg;
long long int id, cell;
};


class llist
{
public: struct student s,s1;llist *address;
};
llist *start=NULL, *start1=NULL;
//Accept a element
void accept()
{
llist *nnode,*temp;
nnode=new(llist);
cout<<"\nEnter name:";
cin>>nnode->s.name;
cout<<"\nEnter dept:";
```

```
cin>>nnode->s.dept;

cout<<"\nEnter id:";

cin>>nnode->s.id;

cout<<"\nEnter cell number:";

cin>>nnode->s.cell;

cout<<"\nEnter designation:";

cin>>nnode->s.dsg;

temp=start;

if(temp==NULL){start=nnode;nnode->address=NULL;}

else{

while(temp->address!=NULL)

{

temp=temp->address;

}

temp->address=nnode;

nnode->address=NULL;

}

}


//Display the elements

void display()

{

   llist *temp;

   temp=start;

   while(temp!=NULL)
```

```
 {
   cout<<"\nName is "<<temp->s.name;
   cout<<"\ndept is "<<temp->s.dept;
   cout<<"\nid is "<<temp->s.id;
   cout<<"\nCell number is "<<temp->s.cell;
   cout<<"\ndesignation is "<<temp->s.dsg;
   temp=temp->address;
 }
}
//Insert begin
void insert_begin()
{
llist *nnode,*temp;
nnode=new(llist);
cout<<"\nEnter name:";
cin>>nnode->s.name;
cout<<"\nEnter dept:";
cin>>nnode->s.dept;
cout<<"\nEnter id:";
cin>>nnode->s.id;
cout<<"\nEnter cell number:";
cin>>nnode->s.cell;
cout<<"\nEnter designation number:";
cin>>nnode->s.dsg;
temp=start;
```

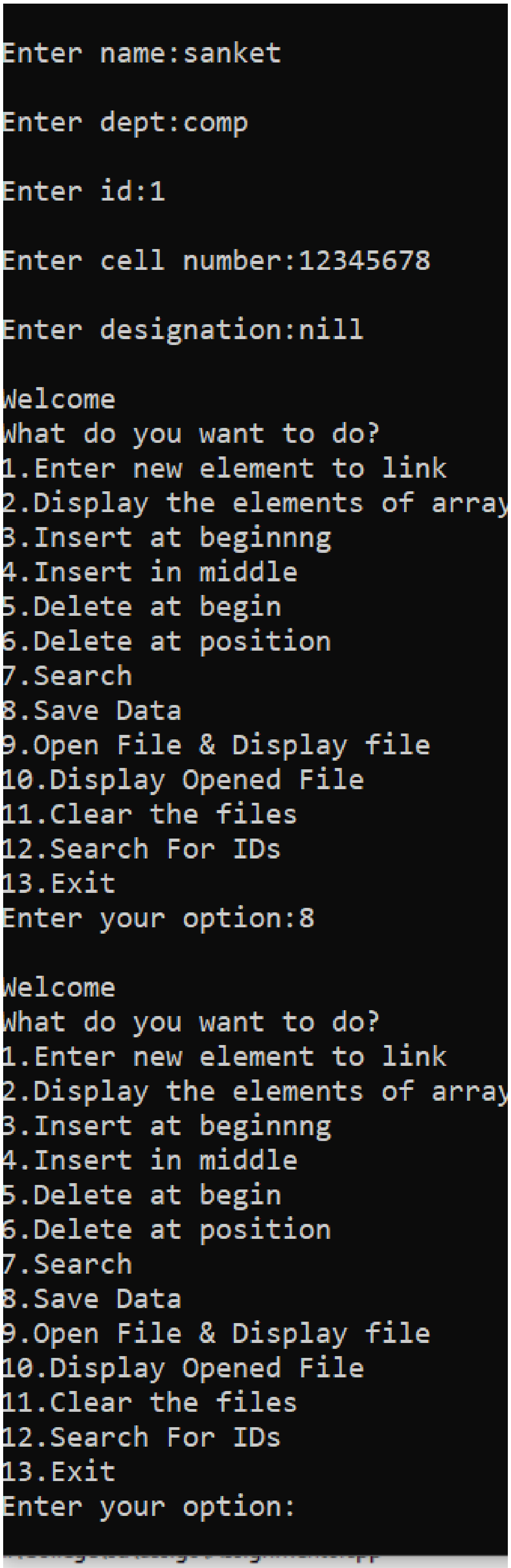
```
nnode->address=temp;

start=nnode;

}

//Insert middle

void insert_mid()

{

llist *nnode,*temp,*prev;

nnode=new(llist);

int i,p;

cout<<"\nEnter name:";

cin>>nnode->s.name;

cout<<"\nEnter dept:";

cin>>nnode->s.dept;

cout<<"\nEnter id:";

cin>>nnode->s.id;

cout<<"\nEnter cell number:";

cin>>nnode->s.cell;

cout<<"\nEnter designation:";

cin>>nnode->s.dsg;

cout<<"\nEnter position:";

cin>>p;

temp=start;

for(i=0;i<p-1;i++)

{

prev=temp;
```

```
{

temp=temp->address;

}

prev->address=nnode;

nnode->address=temp;

}


//Delete begin

void del_begin()

{

llist *temp;

temp=start;

start=temp->address;

temp->address=NULL;

delete(temp);

}

//Delete at position

void del_mid()

{

llist *temp,*prev;

int i,p;

cout<<"\nEnter position:";

cin>>p;

temp=start;

for(i=0;i<p-1;i++)

{
```

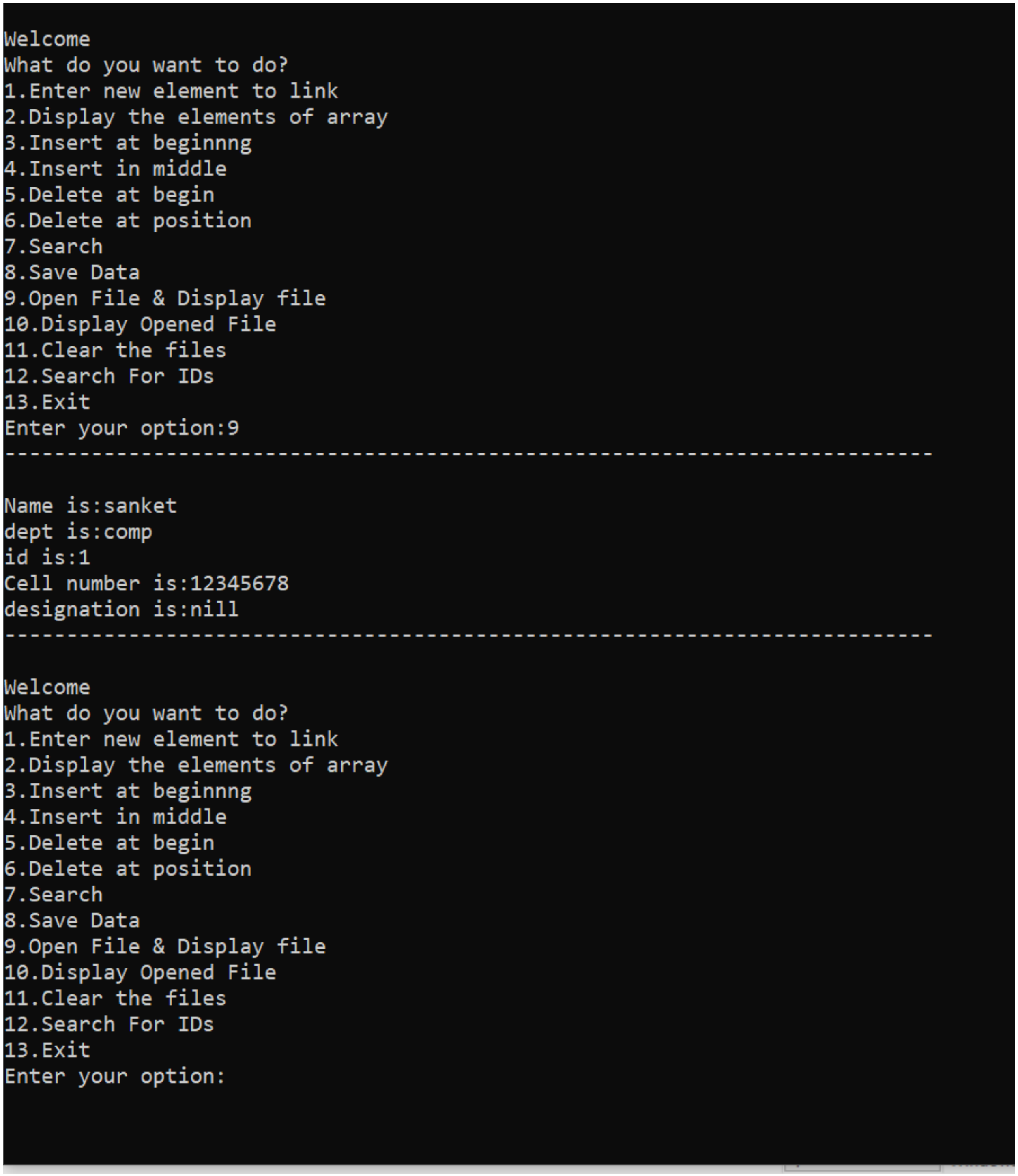
```
prev=temp;

temp=temp->address;

}

prev->address=temp->address;

delete(temp);

}


//Search node

void search()

{

int i,j;

llist *temp;

cout<<"\nEnter id to be found:";

cin>>j;

temp=start;

i=1;

//cout<<j<<" "<<temp<<" "<<i;

while(temp->address!=NULL)

{

if(temp->s.id==j){break;}

else{i++;temp=temp->address;}

}

cout<<"Position is:"<<i;

}
```

```
void save()
{
   int m=0;
   llist *temp;
   temp=start;
   ofstream file1,file2,file3,file4,file5;
   file1.open("names.txt",ios_base::app);
   file2.open("dept.txt",ios_base::app);
   file3.open("id.txt",ios_base::app);
   file4.open("dsg.txt",ios_base::app);
   file5.open("cell.txt",ios_base::app);
   while(m<5)
   {
     switch(m)
   {
   case 0:while(temp!=NULL){file1<<temp->s.name<<endl;temp=temp->address;};break;
   case 1:while(temp!=NULL){file2<<temp->s.dept<<endl;temp=temp->address;};break;
   case 2:while(temp!=NULL){file3<<temp->s.id<<endl;temp=temp->address;};break;
   case 3:while(temp!=NULL){file4<<temp->s.dsg<<endl;temp=temp->address;};break;
   case 4:while(temp!=NULL){file5<<temp->s.cell<<endl;temp=temp->address;};break;
   }
   m++;
   temp=start;
   }
   file1.close();

   file2.close();

   file3.close();

   file4.close();

   file5.close();

}



void displayfile()

{

   llist *temp;

temp=start1;


while(temp->address!=NULL)

{

cout<<"-------------------------------------------------------------------------\n";

cout<<"\nName is:"<<temp->s1.name;

cout<<"\ndept is:"<<temp->s1.dept;

cout<<"\nid is:"<<temp->s1.id;

cout<<"\nCell number is:"<<temp->s1.cell;

cout<<"\ndesignation is:"<<temp->s1.dsg;

cout<<"\n-------------------------------------------------------------------------\n";

temp=temp->address;

}

}
```

```
void open()

{

    llist *temp,*nnode,*next;

    if(start1!=NULL){temp=start1->address;while(temp!=NULL){next=temp->address;delete(temp);temp=next;}start1=NULL;}

    ifstream file1,file2,file3,file4,file5;

    file1.open("names.txt");

    file2.open("dept.txt");

    file3.open("id.txt");

    file4.open("dsg.txt");

    file5.open("cell.txt");

    while(!file3.eof())

    {

        temp=start1;

        nnode=new(llist);

        if(temp==NULL){start1=nnode;nnode->address=NULL;}

        else{while(temp->address!=NULL){temp=temp->address;}temp->address=nnode;nnode->address=NULL;}

        getline(file1,nnode->s1.name);

        getline(file2,nnode->s1.dept);

        getline(file4,nnode->s1.dsg);

        file3>>nnode->s1.id;

        file5>>nnode->s1.cell;


    }
    file1.close();

    file2.close();

    file3.close();

    file4.close();

    file5.close();

    displayfile();

}


void del()

{

    ofstream file1,file2,file3,file4,file5;

    file1.open("names.txt",ios_base::trunc);

    file2.open("dept.txt",ios_base::trunc);

    file3.open("id.txt",ios_base::trunc);

    file4.open("dsg.txt",ios_base::trunc);

    file5.open("cell.txt",ios_base::trunc);

    file1.close();

    file2.close();

    file3.close();

    file4.close();

    file5.close();

}


void search1()

{
   int a,i=1,m,l=0;

   cout<<"\nEnter the id to be searched:";

   cin>>a;

   ifstream file;

   file.open("id.txt");

   while(!file.eof()){file>>m;if(m==a){cout<<"\nRecord found at:"<<i;l=1;break;} else{i++;}}

   if(l==0){cout<<"\nRecord not found!";}

   file.close();


}


//Main Function

int main()

{

int i,flag=0;

while(flag==0)

{cout<<"\nWelcome"<<"\nWhat do you want to do?"<<"\n1.Enter new element to link\n"<<"2.Display the elements of array"<<"\n3.Insert at beginnng\n"

<<"4.Insert in middle\n"<<"5.Delete at begin\n"<<"6.Delete at position"<<"\n7.Search\n"<<"8.Save Data"<<"\n9.Open File & Display file\n"<<"10.Display Opened File"

<<"\n11.Clear the files"<<"\n12.Search For IDs"<<"\n13.Exit"<<"\nEnter your option:";

cin>>i;

switch(i)

{

case 1:accept();break;

case 2:display();break;
case 3:insert_begin();break;

case 4:insert_mid();break;

case 5:del_begin();break;

case 6:del_mid();break;

case 7:search();break;

case 8:save();break;

case 9:open();break;

case 10:displayfile();break;

case 11:del();break;

case 12:search1();break;

case 13:flag=1;

}

}

return 0;

}
```



```
Enter name:sanket

Enter dept:comp

Enter id:1

Enter cell number:12345678

Enter designation:nill

Welcome
What do you want to do?
1.Enter new element to link
2.Display the elements of array
3.Insert at beginnng
4.Insert in middle
5.Delete at begin
6.Delete at position
7.Search
8.Save Data
9.Open File & Display file
10.Display Opened File
11.Clear the files
12.Search For IDs
13.Exit
Enter your option:8

Welcome
What do you want to do?
1.Enter new element to link
2.Display the elements of array
3.Insert at beginnng
4.Insert in middle
5.Delete at begin
6.Delete at position
7.Search
8.Save Data
9.Open File & Display file
10.Display Opened File
11.Clear the files
12.Search For IDs
13.Exit
Enter your option:
```



```
Welcome
What do you want to do?
1.Enter new element to link
2.Display the elements of array
3.Insert at beginnng
4.Insert in middle
5.Delete at begin
6.Delete at position
7.Search
8.Save Data
9.Open File & Display file
10.Display Opened File
11.Clear the files
12.Search For IDs
13.Exit
Enter your option:9
---------------------------------------------------------------------------

Name is:sanket
dept is:comp
id is:1
Cell number is:12345678
designation is:nill
---------------------------------------------------------------------------

Welcome
What do you want to do?
1.Enter new element to link
2.Display the elements of array
3.Insert at beginnng
4.Insert in middle
5.Delete at begin
6.Delete at position
7.Search
8.Save Data
9.Open File & Display file
10.Display Opened File
11.Clear the files
12.Search For IDs
13.Exit
Enter your option:
```

<u>Conclusion :</u>

Thus we implemented this example using sequential file organization.