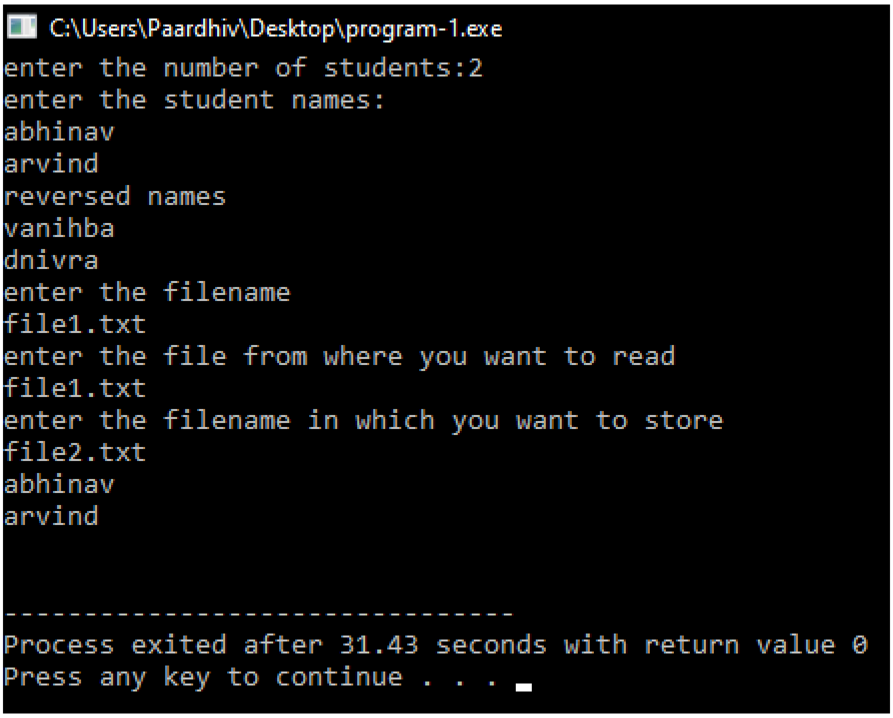
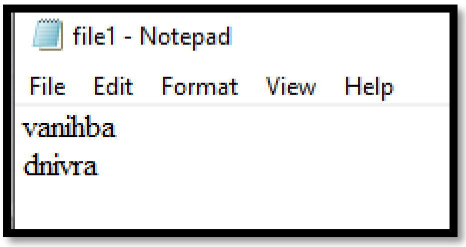
1. Write a C++ program to read series of names, one per line, from standard input and write these names spelled in reverse order to the standard output using I/O redirection and pipes. Repeat the exercise using an input file specified by the user instead of the standard input and using an output file specified by the user instead of the standard output.

```
#include<iostream>
#include<conio.h>
#include<fstream>
#include<string.h>
#include<stdlib.h>
using namespace std;
class student
{
	public: char name[10];
} rec1[10],rec2[10];

int n;

void read()
{
	char name[10];
	cout<<"enter the number of students:";
	cin>>n;
	cout<<"enter the student names:\n";
	for(int i=0;i<n;i++)
	{
		cin>>rec1[i].name;
	}
	cout<<"reversed names\n";
	for(int i=0;i<n;i++)
	{
		strcpy(name,rec1[i].name);
		strrev(name);
		strcpy(rec2[i].name,name);
		cout<<rec2[i].name<<"\n";
	}
}

void write()
{
	fstream file;
	char fname[10];
	cout<<"enter the filename\n";
	cin>>fname;
	file.open(fname,ios::out);
	if(!file)
	{
		cout<<"could not open the file\n";
		exit(1);
	}
	for(int i=0;i<n;i++)
	{
		file<<rec2[i].name<<"\n";
	}
}

void store()
{
	fstream f1,f2;
	char fname1[10],fname2[10],name[10];
	cout<<"enter the file from where you want to read\n";
	cin>>fname1;
	f1.open(fname1,ios::in);
	if(!f1)
	{
		cout<<"could not open the file\n";
		exit(1);
	}
	cout<<"enter the filename in which you want to store\n";
	cin>>fname2;
	f2.open(fname2,ios::out);
	while(!f1.eof())
	{
		f1.getline(name,10,'\n');
		strrev(name);
		cout<<name<<"\n";
		f2<<name<<"\n";
	}
	f1.close();
	f2.close();
}
int main()
{

	read();
	write();
	store();

}
```

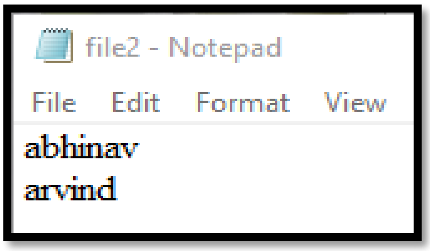
OUTPUT:



```
enter the number of students:2
enter the student names:
abhinav
arvind
reversed names
vanihba
dnivra
enter the filename
file1.txt
enter the file from where you want to read
file1.txt
enter the filename in which you want to store
file2.txt
abhinav
arvind



--------------------------------
Process exited after 31.43 seconds with return value 0
Press any key to continue . . .
```



```
vanihba
dnivra
```



```
abhinav
arvind
```

2. Write a C++ program to read and write student objects with fixed-length records and the fields delimited by “|”. Implement pack ( ), unpack ( ), modify ( ) and search ( ) methods.

```
#include<stdio.h>
#include<stdlib.h>
#include<conio.h>
#include<iostream>
#include<fstream>
#include<string.h>
using namespace std;
class student
{
        public: char name[10],usn[10],age[5],sem[5],branch[5],buffer[45];
};
fstream file;
student s;

void writerecord()
{
        file.open("student.txt",ios::app);
        if(!file)
        {
                cout<<"cannot open the file in append mode";
                exit(1);
        }
        cout<<"\nenter the student name = ";
        cin>>s.name;
        cout<<"\nenter the usn = ";
        cin>>s.usn;
        cout<<"\nenter the age = ";
        cin>>s.age;
        cout<<"\nenter the sem = ";
        cin>>s.sem;
        cout<<"\nenter the branch = ";
        cin>>s.branch;

        strcpy(s.buffer,s.name);      //packing the information
        strcat(s.buffer,"|");
        strcat(s.buffer,s.usn);
        strcat(s.buffer,"|");
        strcat(s.buffer,s.age);
        strcat(s.buffer,"|");
        strcat(s.buffer,s.sem);
        strcat(s.buffer,"|");
        strcat(s.buffer,s.branch);

        int count=strlen(s.buffer);
        for(int k=0;k<45-count;k++)
                strcat(s.buffer,"!");
        strcat(s.buffer,"\n");
        file<<s.buffer;  //writing the packed information to buffer
        file.close();
}
```

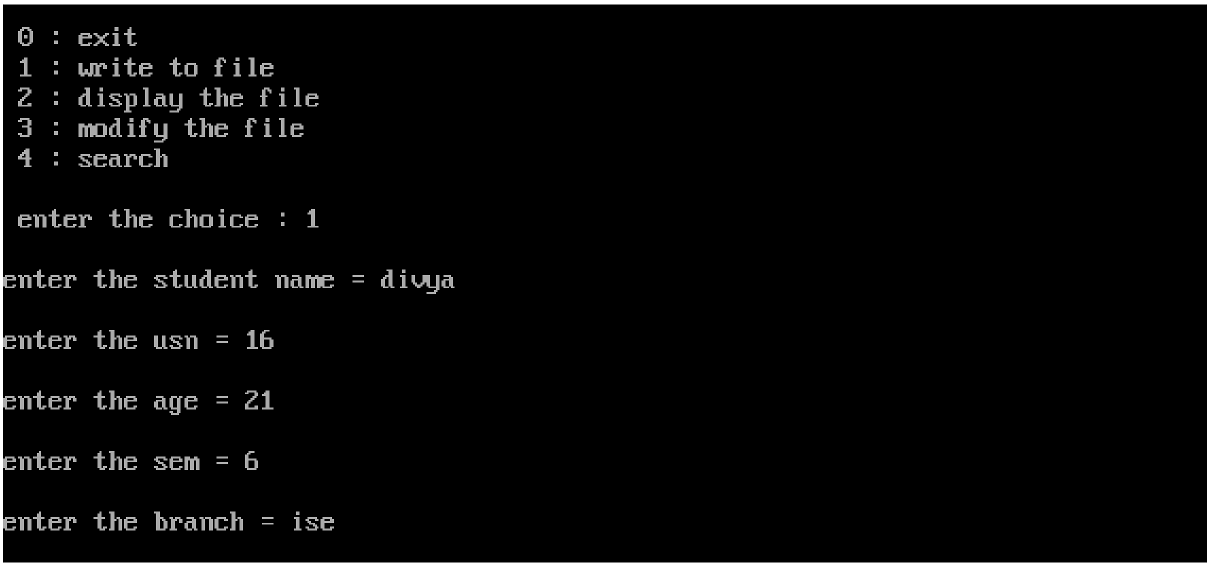
```
void search()
{
        char usn[10];
        char extra[45];
        file.open("student.txt",ios::in);
        if(!file)
        {
                cout<<"\nunable to open the file in read mode";
                exit(0);
        }
        cout<<"\nenter the record's usn you want to search = ";
        cin>>usn;

        while(!file.eof())              //unpacking the record
        {
                file.getline(s.name,10,'|');
                file.getline(s.usn,10,'|');
                file.getline(s.age,5,'|');
                file.getline(s.sem,5,'|');
                file.getline(s.branch,5,'!');
                file.getline(extra,45,'\n');

                if(strcmp(s.usn,usn)==0)
                {
                        cout<<"\nrecord found";
                        cout<<"\n"<<s.name<<"\t"<<s.usn<<"\t";
                        cout<<s.age<<"\t"<<s.sem<<"\t"<<s.branch;
                        file.close();
                        getch();
                        return;
                }
        }
        cout<<"\nrecord not found";
        file.close();
        getch();
}

void displayFile()
{
        int i;
        char extra[45];
        file.open("student.txt",ios::in);

        if(!file)
        {
                cout<<"\ncannot open the file in read mode";
                getch();
                exit(1);
        }
        i=0;
        cout<<"\n\nNAME\t\tUSN\t\tAGE\t\tSEM\t\tBRANCH\n";
        cout<<"----\t\t---\t\t---\t\t---\t\t------\n";
        while(!file.eof())
        {
```

```
			file.getline(s.name,10,'|');
			file.getline(s.usn,10,'|');
			file.getline(s.age,5,'|');
			file.getline(s.sem,5,'|');
			file.getline(s.branch,5,'!');
			file.getline(extra,45,'\n');
			printf("\n%s\t\t%s\t\t%s\t\t%s\t\t%s",s.name,s.usn,s.age,s.sem,s.branch);
			i++;
		}
		file.close();
		getch();
}

void modify()
{
		char usn[10];
		char buffer[45];
		char extra[45];
		int i;
		int j;
		student s[20];

		file.open("student.txt",ios::in);
		if(!file)
		{
			cout<<"\nunable to open the file in input mode";
			getch();
			exit(1);
		}
		cout<<"\nenter the usn of the record to be modified\n";
		cin>>usn;
		cout<<"\n";

		i=0;
		while(!file.eof())
		{
			file.getline(s[i].name,10,'|');
			file.getline(s[i].usn,10,'|');
			file.getline(s[i].age,5,'|');
			file.getline(s[i].sem,5,'|');
			file.getline(s[i].branch,5,'!');
			file.getline(extra,45,'\n');
			i++;
		}
		i--;

		for(j=0;j<i;j++)
		{
			if(strcmp(usn,s[j].usn)==0)
			{
				cout<<"\nthe old values of the record with usn"<<usn<<"are";
				cout<<"\nname = "<<s[j].name;
				cout<<"\nusn = "<<s[j].usn;
				cout<<"\nage = "<<s[j].age;
				cout<<"\nsem = "<<s[j].sem;
```

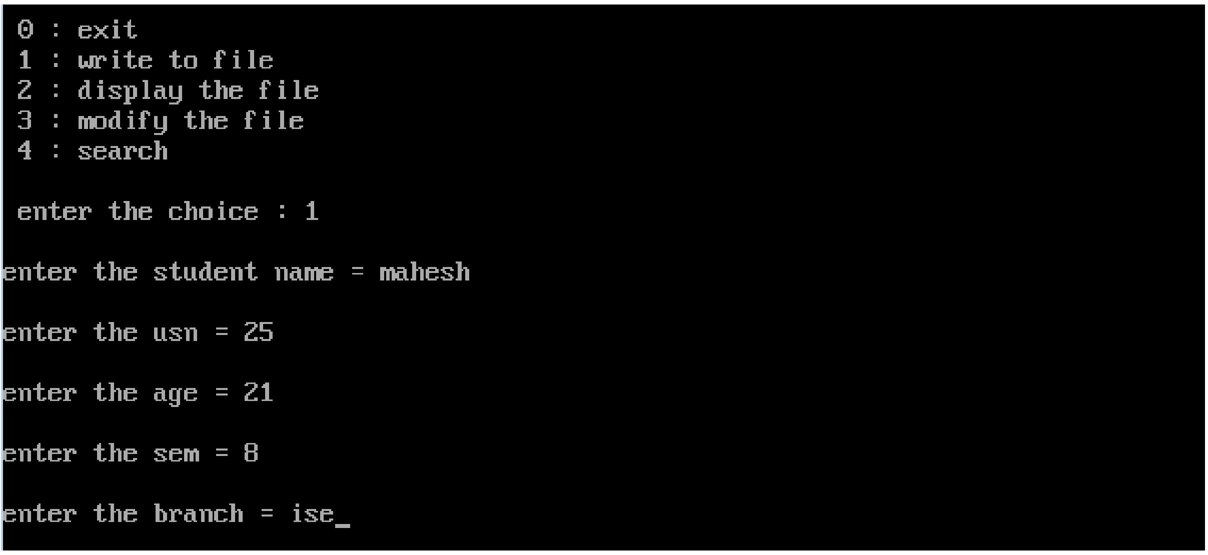
```
                    cout<<"\nbranch = "<<s[j].branch;

                    cout<<"\n\nenter the new values\n";
                    cout<<"\nname = ";
                    cin>>s[j].name;
                    cout<<"\nusn = ";
                    cin>>s[j].usn;
                    cout<<"\nage = ";
                    cin>>s[j].age;
                    cout<<"\nsem = ";
                    cin>>s[j].sem;
                    cout<<"\nbranch = ";
                    cin>>s[j].branch;
                    break;
            }
    }

    if(j==i)
    {
            cout<<"\nthe record with usn " <<usn<< "is not present ";
            getch();
            return;
    }
    file.close();

    file.open("student.txt",ios::out);
    if(!file)
    {
            cout<<"\nunable to open the file in output mode";
            getch();
            return;
    }

    for(j=0;j<i;j++)
    {
            strcpy(buffer,s[j].name);
            strcat(buffer,"|");
            strcat(buffer,s[j].usn);
            strcat(buffer,"|");
            strcat(buffer,s[j].age);
            strcat(buffer,"|");
            strcat(buffer,s[j].sem);
            strcat(buffer,"|");
            strcat(buffer,s[j].branch);

            int count=strlen(buffer);
            for(int k=0;k<45-count;k++)
                    strcat(buffer,"!");
            strcat(buffer,"\n");
            file<<buffer;
    }
    file.close();
}
```

```
int main()
{
        int choice;
        while(1)
        {
                cout<<"\n 0 : exit";
                cout<<"\n 1 : write to file";
                cout<<"\n 2 : display the file";
                cout<<"\n 3 : modify the file";
                cout<<"\n 4 : search";
                cout<<"\n\n enter the choice : ";
                cin>>choice;

                switch(choice)
                {
                        case 1: writerecord();
                                break;

                        case 2: displayFile();
                                break;

                        case 3: modify();
                                break;

                        case 4: search();
                                break;

                        case 0: exit(0);

                        default:cout<<"\ninvalid input...";
                                break;
                }
        }
}
```

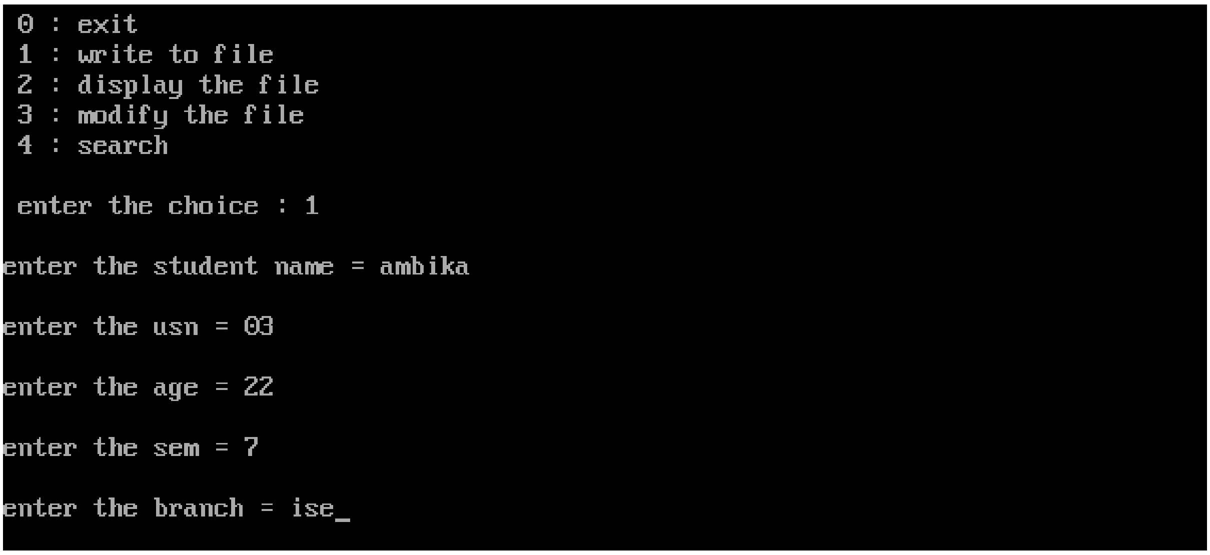
OUTPUT:



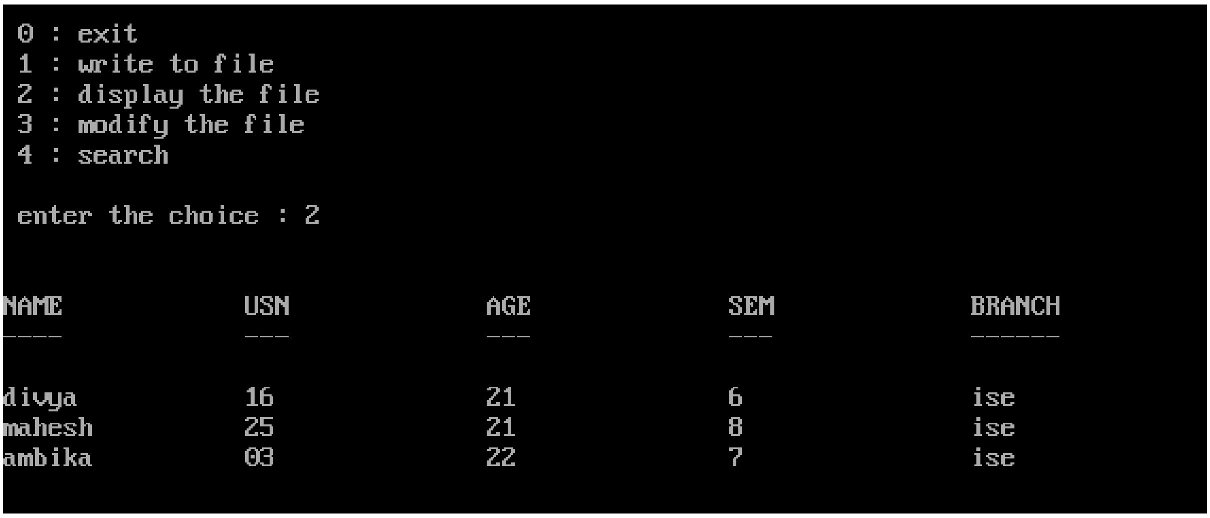
```
 0 : exit
 1 : write to file
 2 : display the file
 3 : modify the file
 4 : search

 enter the choice : 1

enter the student name = divya

enter the usn = 16

enter the age = 21

enter the sem = 6

enter the branch = ise
```



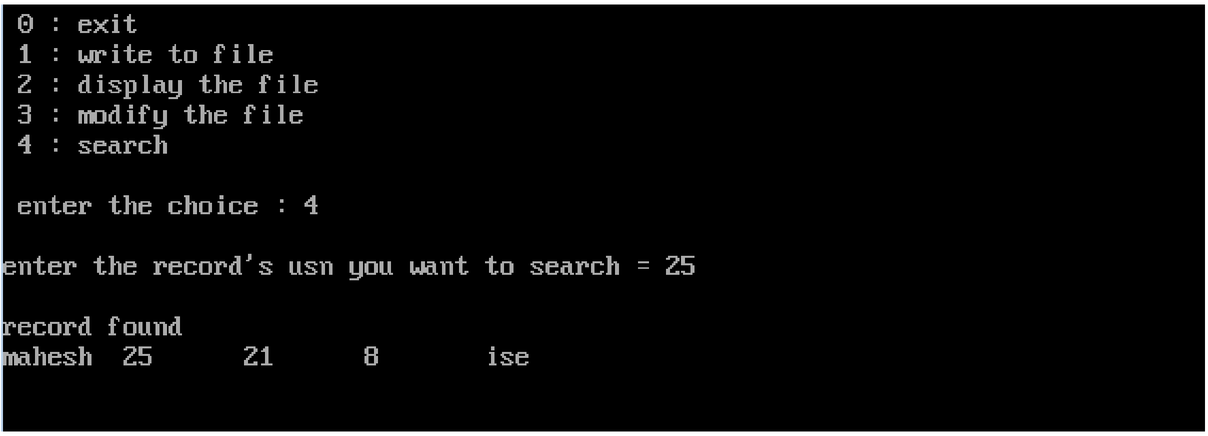
```
 0 : exit
 1 : write to file
 2 : display the file
 3 : modify the file
 4 : search

 enter the choice : 1

enter the student name = mahesh

enter the usn = 25

enter the age = 21

enter the sem = 8

enter the branch = ise_
```



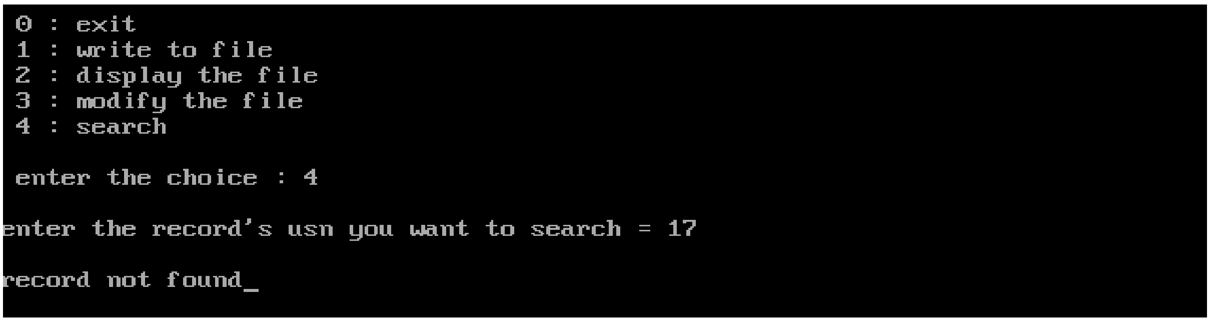
```
 0 : exit
 1 : write to file
 2 : display the file
 3 : modify the file
 4 : search

 enter the choice : 1

enter the student name = ambika

enter the usn = 03

enter the age = 22

enter the sem = 7

enter the branch = ise_
```



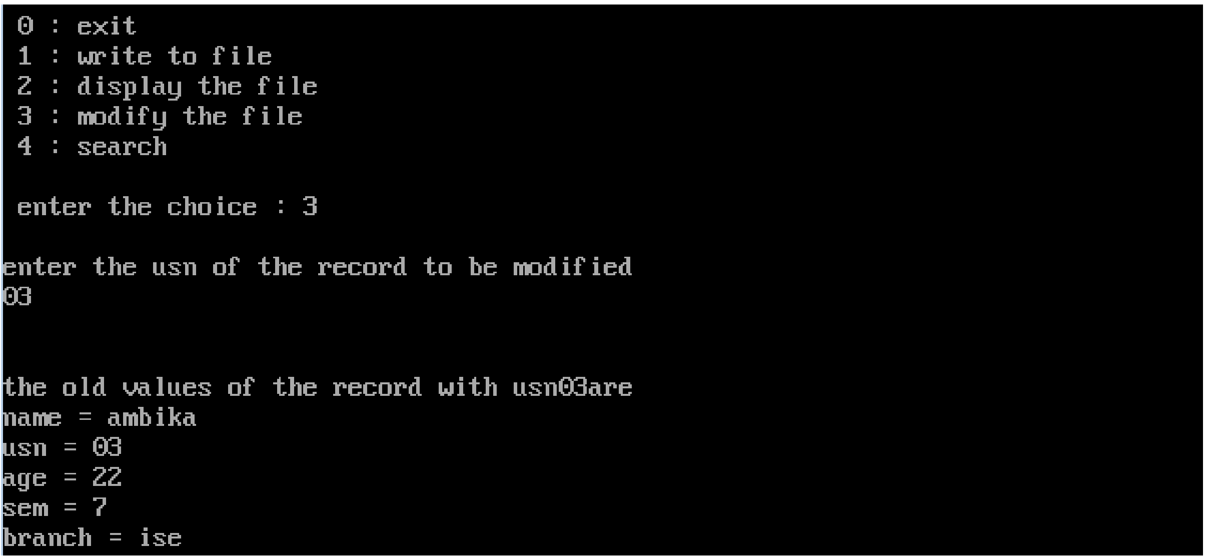
```
 0 : exit
 1 : write to file
 2 : display the file
 3 : modify the file
 4 : search

 enter the choice : 2


NAME            USN             AGE             SEM             BRANCH
----            ---             ---             ---             ------

divya           16              21              6               ise
mahesh          25              21              8               ise
ambika          03              22              7               ise
```



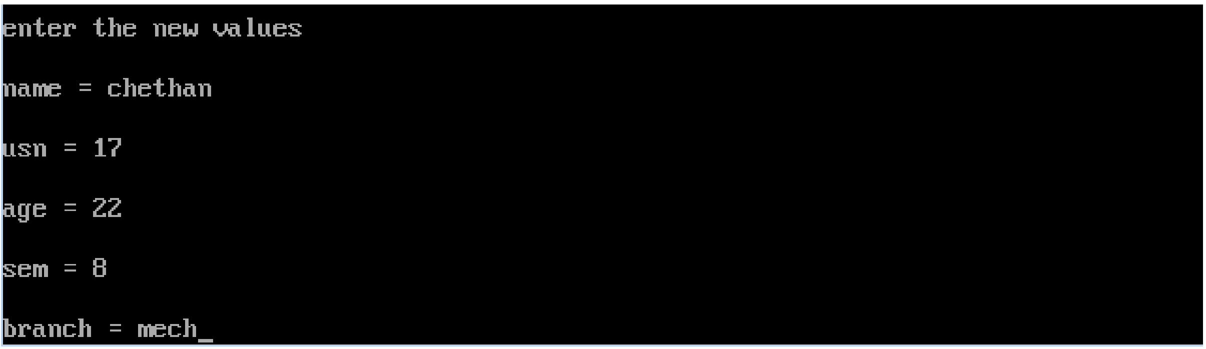
```
 0 : exit
 1 : write to file
 2 : display the file
 3 : modify the file
 4 : search

 enter the choice : 4

enter the record's usn you want to search = 25

record found
mahesh  25      21      8       ise
```



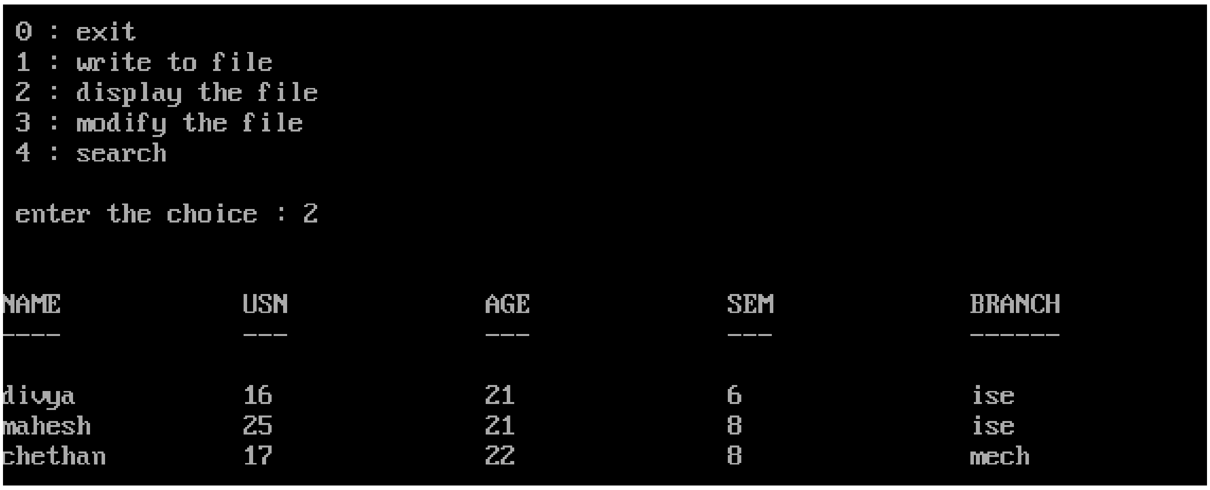
```
 0 : exit
 1 : write to file
 2 : display the file
 3 : modify the file
 4 : search

 enter the choice : 4

enter the record's usn you want to search = 17

record not found_
```



```
 0 : exit
 1 : write to file
 2 : display the file
 3 : modify the file
 4 : search

 enter the choice : 3

enter the usn of the record to be modified
03


the old values of the record with usn03are
name = ambika
usn = 03
age = 22
sem = 7
branch = ise
```



```
enter the new values

name = chethan

usn = 17

age = 22

sem = 8

branch = mech_
```



```
 0 : exit
 1 : write to file
 2 : display the file
 3 : modify the file
 4 : search

 enter the choice : 2


NAME            USN             AGE             SEM             BRANCH
----            ---             ---             ---             ------

divya           16              21              6               ise
mahesh          25              21              8               ise
chethan         17              22              8               mech
```

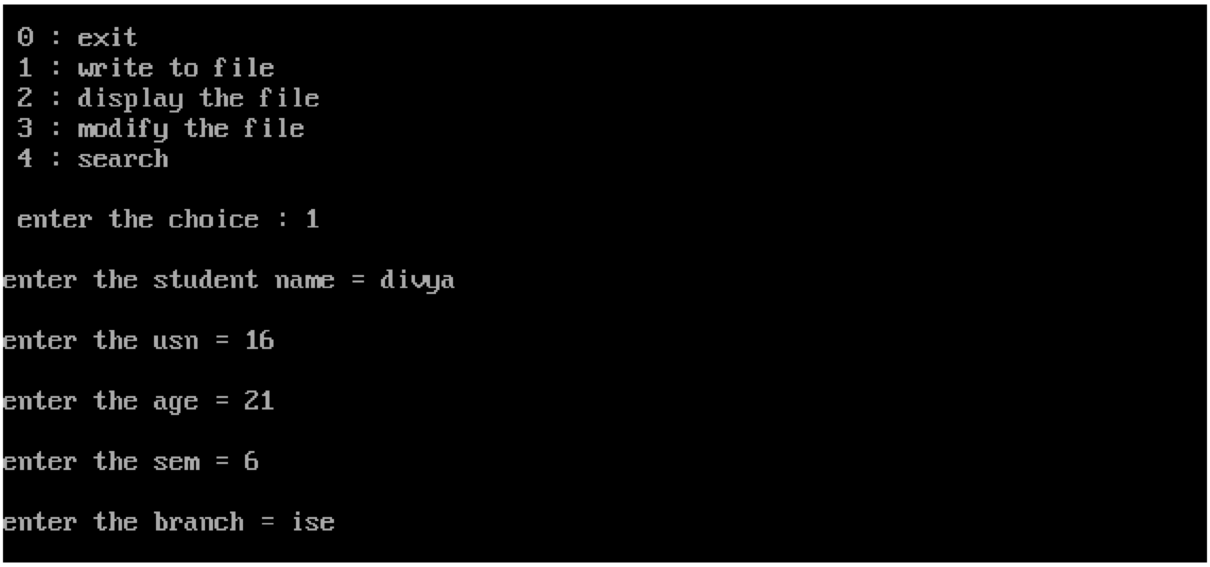
3. Write a C++ program to read and write student objects with Variable - Length records using any suitable record structure. Implement pack ( ), unpack ( ), modify ( ) and search ( ) methods.

```
#include<stdio.h>
#include<stdlib.h>
#include<conio.h>
#include<iostream>
#include<fstream>
#include<string.h>
using namespace std;

class student
{
        public: char name[10],usn[10],age[5],sem[5],branch[5],buffer[45];
};

fstream file;
student s;

void writerecord()
{
        file.open("program3.txt",ios::app);
        if(!file)
        {
                cout<<"cannot open the file in append mode";
                getch();
                exit(1);
        }
        cout<<"\nenter the student name = ";
        cin>>s.name;
        cout<<"\nenter the usn = ";
        cin>>s.usn;
        cout<<"\nenter the age = ";
        cin>>s.age;
        cout<<"\nenter the sem = ";
        cin>>s.sem;
        cout<<"\nenter the branch = ";
        cin>>s.branch;

        strcpy(s.buffer,s.name);
        strcat(s.buffer,"|");
        strcat(s.buffer,s.usn);
        strcat(s.buffer,"|");
        strcat(s.buffer,s.age);
        strcat(s.buffer,"|");
        strcat(s.buffer,s.sem);
        strcat(s.buffer,"|");
        strcat(s.buffer,s.branch);

        strcat(s.buffer,"\n");
        file<<s.buffer;
        file.close();
}
```

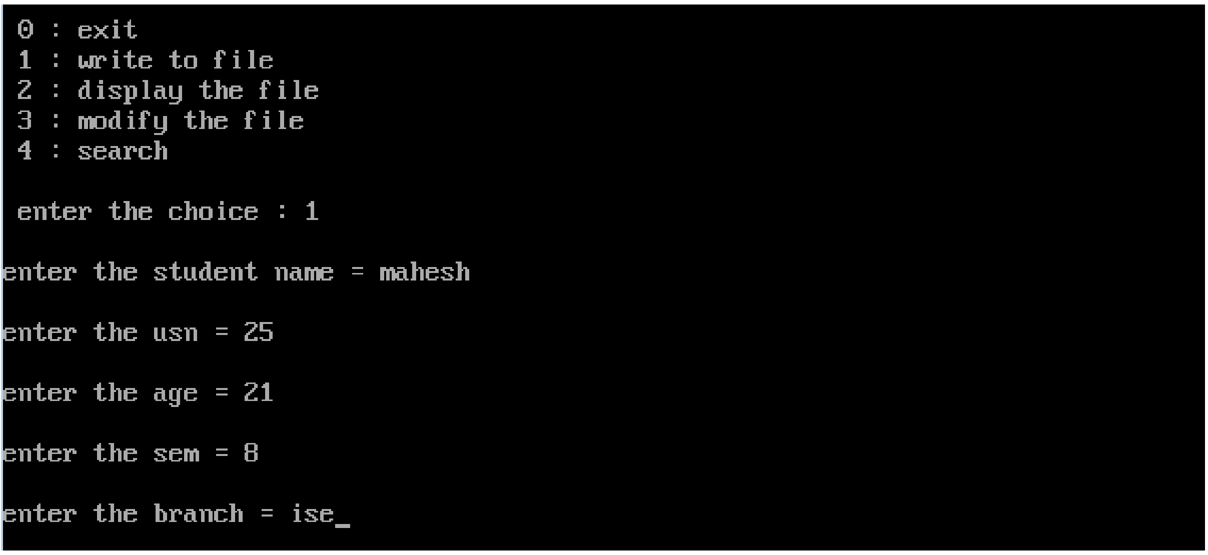
```
void search()
{
        char usn[10];
        char extra[45];

        file.open("program3.txt",ios::in);
        if(!file)
        {
                cout<<"\nunable to open the file in read mode";
                getch();
                exit(0);
        }
        cout<<"\nenter the record's usn you want to search = ";
        cin>>usn;

        while(!file.eof())
        {
                file.getline(s.name,10,'|');
                file.getline(s.usn,10,'|');
                file.getline(s.age,5,'|');
                file.getline(s.sem,5,'|');
                file.getline(s.branch,5,'\n');

                if(strcmp(s.usn,usn)==0)
                {
                        cout<<"\nrecord found";
                        cout<<"\nname\tusn\tage\tsem\tbranch";

                        cout<<"\n"<<s.name<<"\t"<<s.usn<<"\t";
                        cout<<s.age<<"\t"<<s.sem<<"\t"<<s.branch;

                        file.close();
                        getch();
                        return;
                }
        }
        cout<<"\nrecord not found";
        file.close();
        getch();
        return;
}

void displayFile()
{
        int i;
        file.open("program3.txt",ios::in);

        if(!file)
        {
                cout<<"\ncannot open the file in read mode";
                getch();
                exit(1);
        }
        i=0;
        printf("\n\nNAME\t\tUSN\t\tAGE\t\tSEM\t\tBRANCH\n");
        while(!file.eof())
        {
                file.getline(s.name,15,'|');
                file.getline(s.usn,15,'|');
                file.getline(s.age,5,'|');
                file.getline(s.sem,5,'|');
                file.getline(s.branch,5,'\n');
                printf("\n%s\t\t%s\t\t%s\t\t%s\t\t%s",s.name,s.usn,s.age,s.sem,s.branch);
                i++;
        }
        file.close();
        getch();
}

void modify()
{
        char usn[10];

        int i;
        int j;
        student s[100];

        file.open("program3.txt",ios::in);
        if(!file)
        {
                cout<<"\nunable to open the file in input mode";
                getch();
                exit(1);
        }
        cout<<"\nenter the usn ";
        cin>>usn;

        i=0;
        while(!file.eof())
        {
                file.getline(s[i].name,15,'|');
                file.getline(s[i].usn,15,'|');
                file.getline(s[i].age,5,'|');
                file.getline(s[i].sem,5,'|');
                file.getline(s[i].branch,5,'\n');
                i++;
        }
        i--;

        for(j=0;j<i;j++)
        {
                if(strcmp(usn,s[j].usn)==0)
                {
                        cout<<"\nthe old values of the record with usn"<<usn<<"are";
                        cout<<"\nname = "<<s[j].name;
                        cout<<"\nusn = "<<s[j].usn;
                        cout<<"\nage = "<<s[j].age;
                        cout<<"\nsem = "<<s[j].sem;
                        cout<<"\nbranch = "<<s[j].branch;
                        cout<<"\nenter the new values\n";
                        cout<<"\nname = ";
                        cin>>s[j].name;
                        cout<<"\nusn = ";
                        cin>>s[j].usn;
                        cout<<"\nage = ";
                        cin>>s[j].age;
                        cout<<"\nsem = ";
                        cin>>s[j].sem;
                        cout<<"\nbranch = ";
                        cin>>s[j].branch;
                        break;
                }
        }

        if(j==i)
        {
                cout<<"\nthe record with usn " <<usn<< "is not present ";
                getch();
                return;
        }
        file.close();

        file.open("program3.txt",ios::out);
        if(!file)
        {
                cout<<"\nunable to open the file in output mode";
                getch();
                return;
        }

        for(j=0;j<i;j++)
        {
                file<<s[j].name<<'|'<<s[j].usn<<'|'<<s[j].age
                        <<'|'<<s[j].sem<<'|'<<s[j].branch<<'\n';
        }
        file.close();
}

int main()
{
        int choice;
        while(1)
        {
                cout<<"\n 0 : exit";
                cout<<"\n 1 : write to file";
                cout<<"\n 2 : display the file";
                cout<<"\n 3 : modify the file";
                cout<<"\n 4 : search";
                cout<<"\n\n enter the choice : ";
                cin>>choice;

                switch(choice)
                {
```

```
                                case 1: writerecord();
                                        break;

                                case 2: displayFile();
                                        break;

                                case 3: modify();
                                        break;

                                case 4: search();
                                        break;

                                case 0: exit(0);

                                default: cout<<"\ninvalid input...";
                                        break;
                        }
                }
        }
```

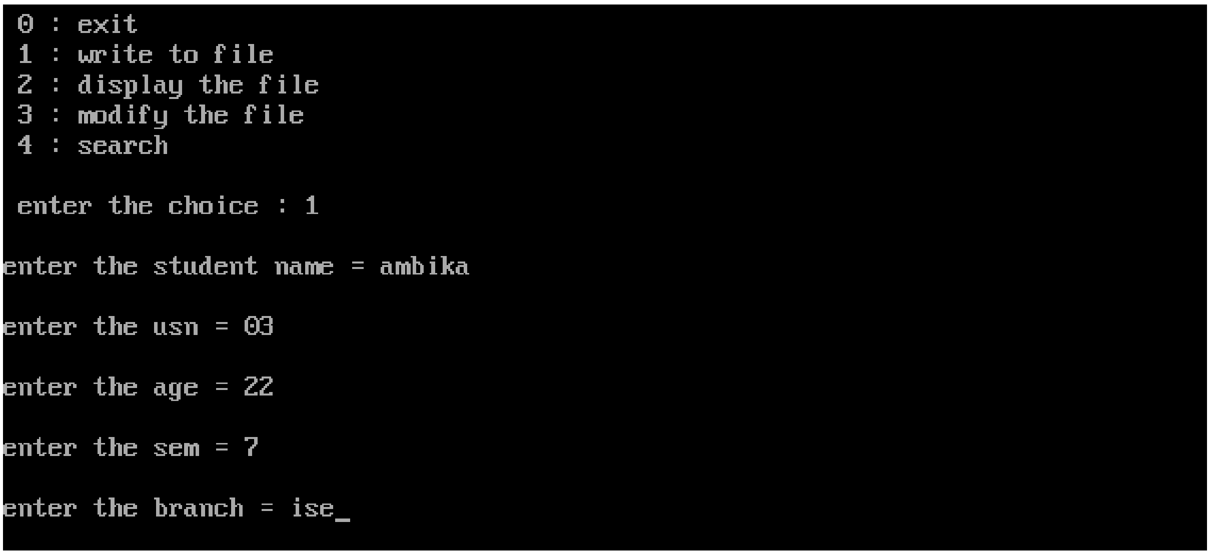
OUTPUT:



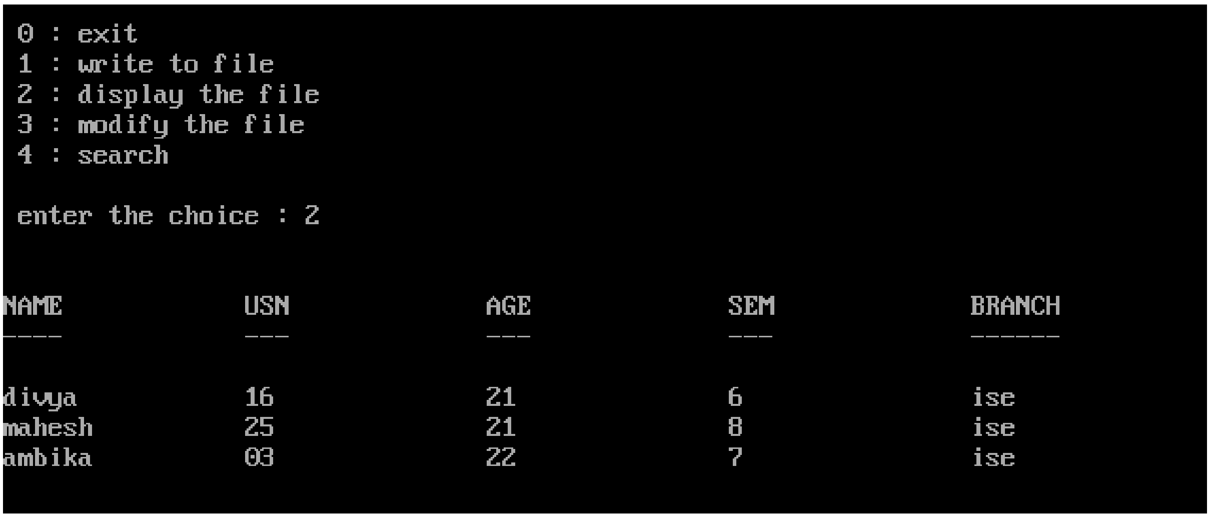
```
 0 : exit
 1 : write to file
 2 : display the file
 3 : modify the file
 4 : search

 enter the choice : 1

enter the student name = divya

enter the usn = 16

enter the age = 21

enter the sem = 6

enter the branch = ise
```



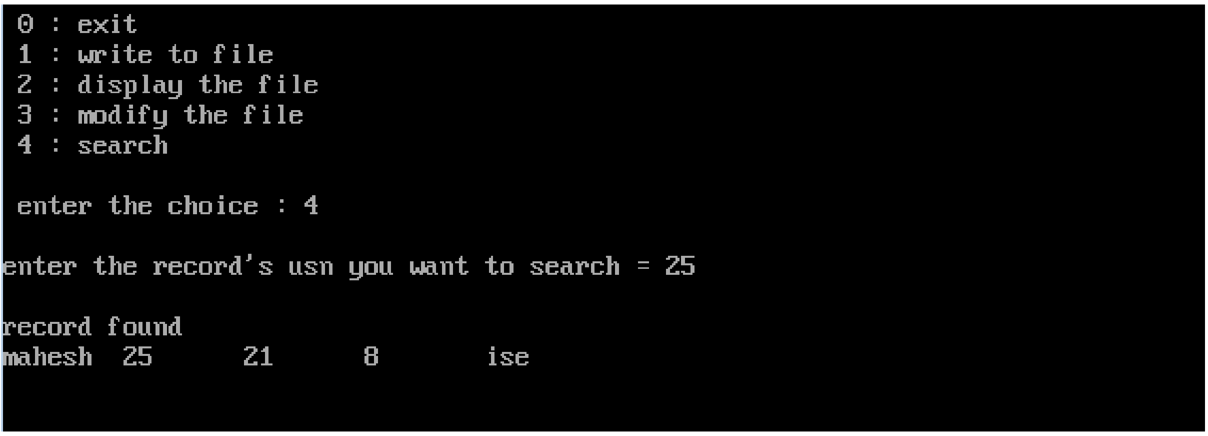
```
 0 : exit
 1 : write to file
 2 : display the file
 3 : modify the file
 4 : search

 enter the choice : 1

enter the student name = mahesh

enter the usn = 25

enter the age = 21

enter the sem = 8

enter the branch = ise_
```



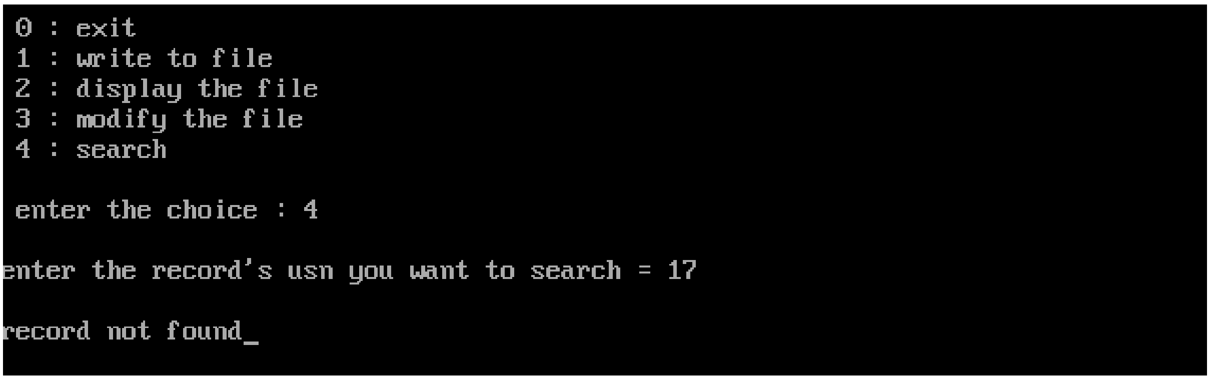
```
 0 : exit
 1 : write to file
 2 : display the file
 3 : modify the file
 4 : search

 enter the choice : 1

enter the student name = ambika

enter the usn = 03

enter the age = 22

enter the sem = 7

enter the branch = ise_
```



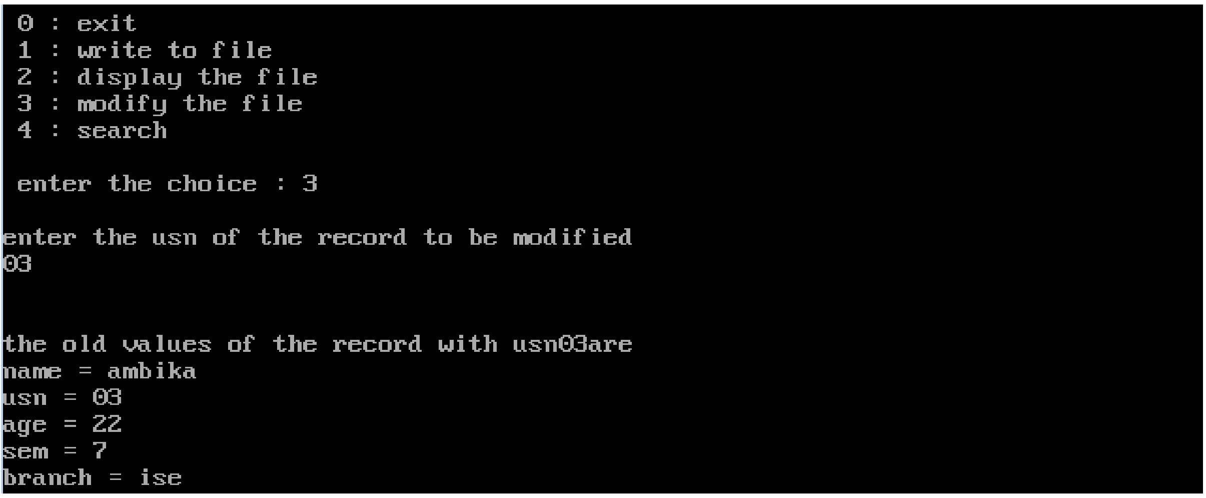
```
 0 : exit
 1 : write to file
 2 : display the file
 3 : modify the file
 4 : search

 enter the choice : 2


NAME            USN             AGE             SEM             BRANCH
----            ---             ---             ---             ------

divya           16              21              6               ise
mahesh          25              21              8               ise
ambika          03              22              7               ise
```



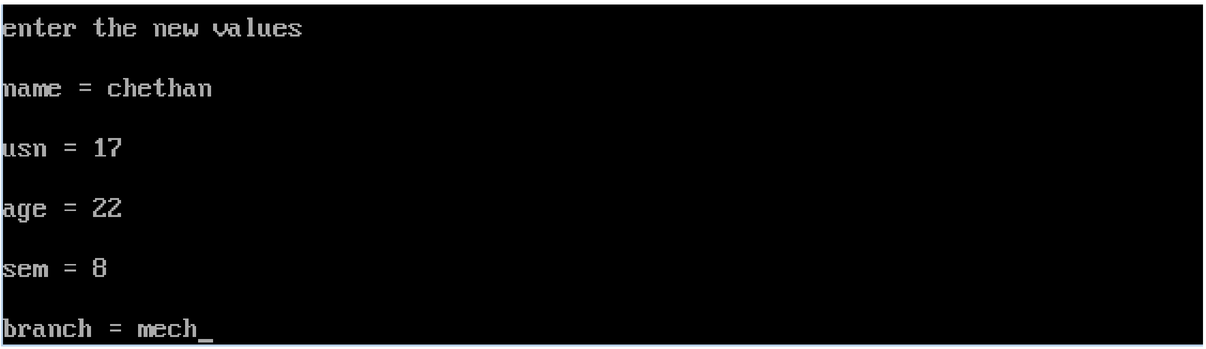
```
 0 : exit
 1 : write to file
 2 : display the file
 3 : modify the file
 4 : search

 enter the choice : 4

enter the record's usn you want to search = 25

record found
mahesh  25      21      8       ise
```



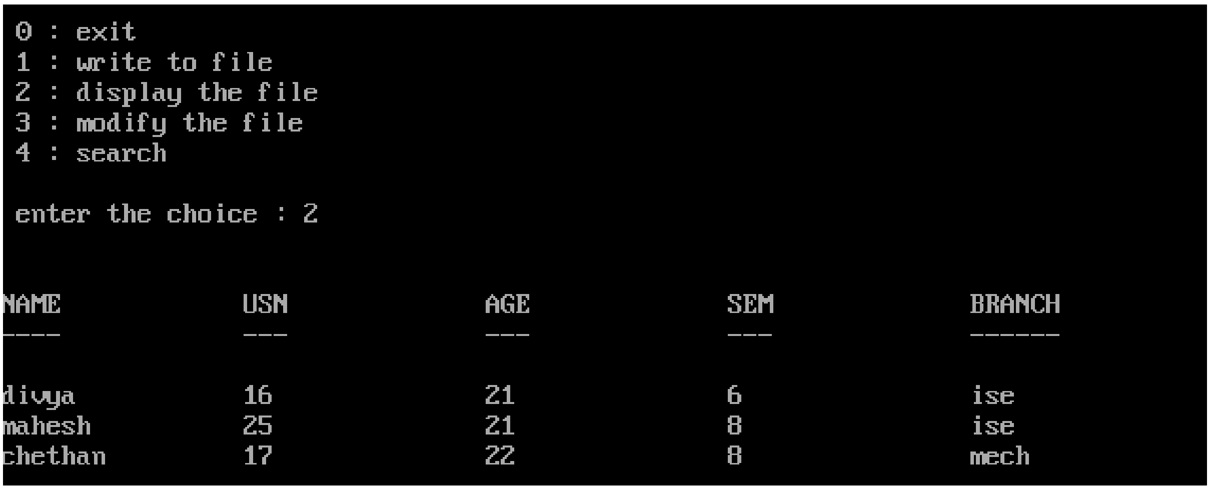
```
 0 : exit
 1 : write to file
 2 : display the file
 3 : modify the file
 4 : search

 enter the choice : 4

enter the record's usn you want to search = 17

record not found_
```



```
 0 : exit
 1 : write to file
 2 : display the file
 3 : modify the file
 4 : search

 enter the choice : 3

enter the usn of the record to be modified
03


the old values of the record with usn03are
name = ambika
usn = 03
age = 22
sem = 7
branch = ise
```



```
enter the new values

name = chethan

usn = 17

age = 22

sem = 8

branch = mech_
```

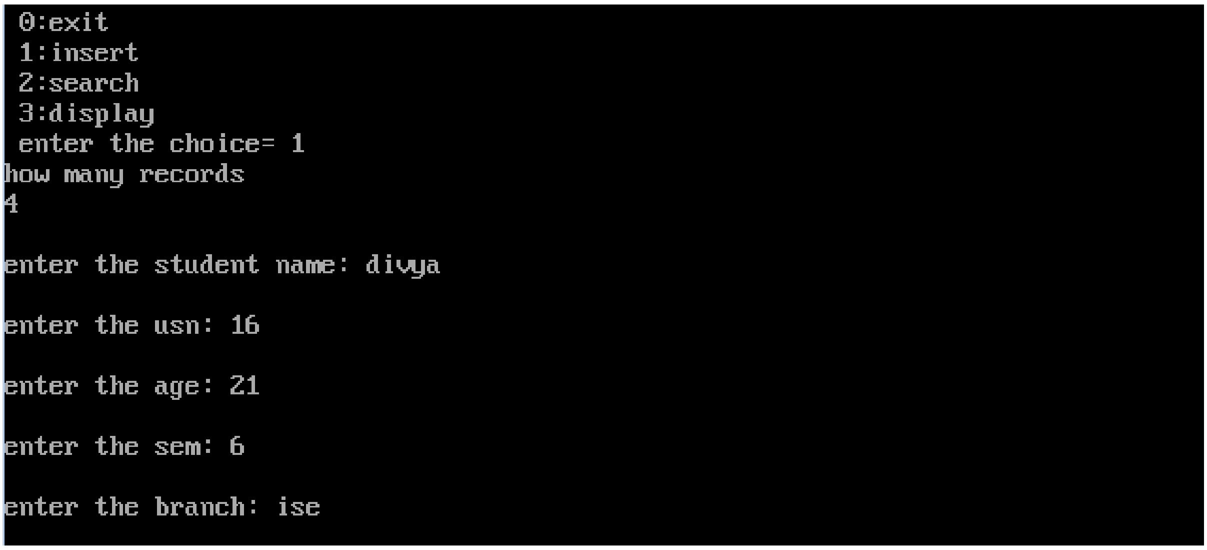


```
 0 : exit
 1 : write to file
 2 : display the file
 3 : modify the file
 4 : search

 enter the choice : 2


NAME           USN            AGE            SEM            BRANCH
----           ---            ---            ---            ------

divya          16             21             6              ise
mahesh         25             21             8              ise
chethan        17             22             8              mech
```

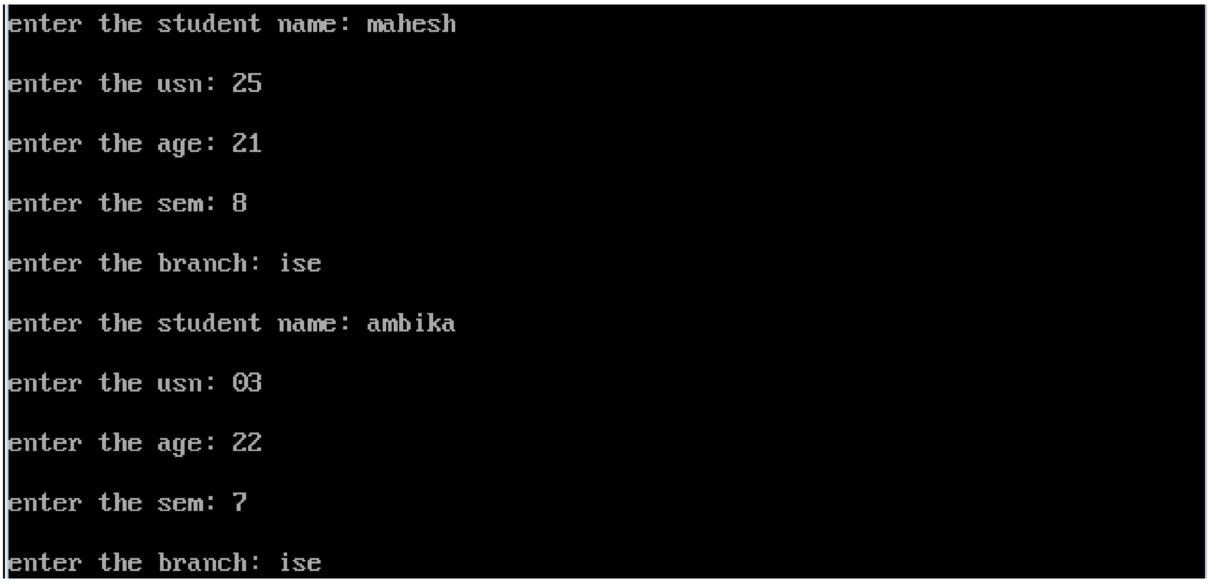
4. Write a C++ program to write student objects with Variable – Length records using any suitable record structure and to read from this file a student record using RRN.

```
#include<stdio.h>
#include<stdlib.h>
#include<conio.h>
#include<iostream>
#include<fstream>
#include<string.h>
using namespace std;

class student
{
        public:char name[15],usn[10],age[5],sem[5],branch[15],buffer[100];
};

void writerecord()
{
        fstream file;
        student s;
        int k,n;
        file.open("program_4.txt",ios::app);
        if(!file)
        {
                cout<<"\ncan not open the file in append mode\n";
                getch();
                exit(0);

        }
        printf("how many records\n");
        scanf("%d",&n);
        for(k=0;k<n;k++)
        {
                cout<<"\nenter the student name: ";
                cin>>s.name;
                cout<<"\nenter the usn: ";
                cin>>s.usn;
                cout<<"\nenter the age: ";
                cin>>s.age;
                cout<<"\nenter the sem: ";
                cin>>s.sem;
                cout<<"\nenter the branch: ";
                cin>>s.branch;
                file<<k<<"|"<<s.name<<"|"<<s.usn<<"|"
                <<s.age<<"|"<<s.sem<<"|"<<s.branch<<"\n";
        }
        file.close();
}

void displayfile()
{
        student s;
        char rrn[10];
        fstream file;
        file.open("program_4.txt",ios::in);
        if(!file)
        {
                cout<<"\ncannot open the file in input mode\n";
                getch();
                exit(1);
        }
        cout<<"\n";
        printf("rrn\tname\t\tusn\t\tage\t\tsem\t\tbranch\n");
        while(!file.eof())
        {
                file.getline(rrn,4,'|');
                file.getline(s.name,15,'|');
                file.getline(s.usn,15,'|');
                file.getline(s.age,5,'|');
                file.getline(s.sem,5,'|');
                file.getline(s.branch,15,'\n');
                printf("\n%s\t%s\t\t%s\t\t%s\t\t%s\t\t%s\n",
                rrn,s.name,s.usn,s.age,s.sem,s.branch);

        }
        file.close();
        getch();
}

void search()
{
        char rrn[10],rrn1[10][15];
        int i;
        student std[100];
        cout<<"\n enter the rrn to be searched";
        cin>>rrn;
        fstream file;
        file.open("program_4.txt",ios::in);
        if(!file)
        {
                cout<<"\n can not open the file in input mode";
                getch();
                exit(0);
        }
        i=0;
        printf("\n rrn\tname\tusn\tage\tsem\tbranch\n");
        while(!file.eof())
        {
                file.getline(rrn1[i],4,'|');
                file.getline(std[i].name,15,'|');
                file.getline(std[i].usn,15,'|');
                file.getline(std[i].age,5,'|');
                file.getline(std[i].sem,5,'|');
                file.getline(std[i].branch,15,'\n');
                i++;
        }

        for(int j=0;j<i-1;j++)
        {
                if(strcmp(rrn,rrn1[j])==0)
                {
                        printf("\n%s\t%s\t%s\t%s\t%s\t%s\n",
                        rrn,std[j].name,std[j].usn,std[j].age,
                        std[j].sem,std[j].branch);
                        printf("\n record found\n");
                        file.close();
                        return;
                }
        }
        cout<<"\nrecord not found\n";
        file.close();
        return;
}

int main()
{
        int choice;
        while(1)
        {
                cout<<"\n 0:exit";
                cout<<"\n 1:insert";
                cout<<"\n 2:search";
                cout<<"\n 3:display";
                cout<<"\n enter the choice=";
                cin>>choice;
                switch(choice)
                {
                        case 1:writerecord();
                                break;
                        case 2:search();
                                break;
                        case 3:displayfile();
                                break;
                        case 0:exit(0);
                        default:cout<<"\n invalid option";
                                break;
                }

        }
}
```

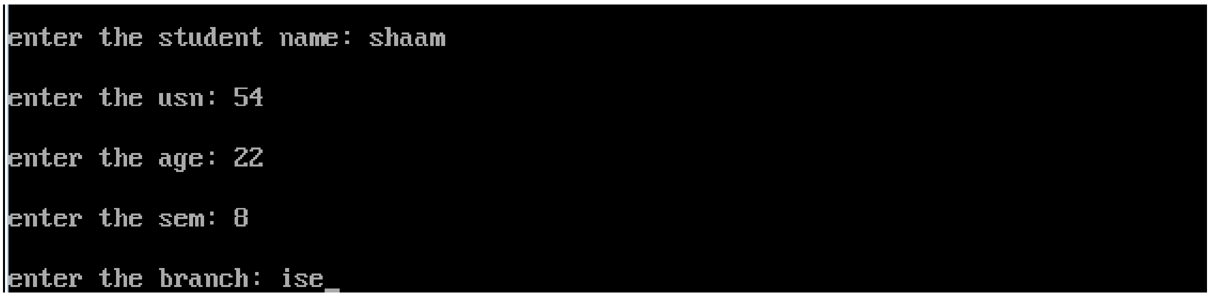
OUTPUT:



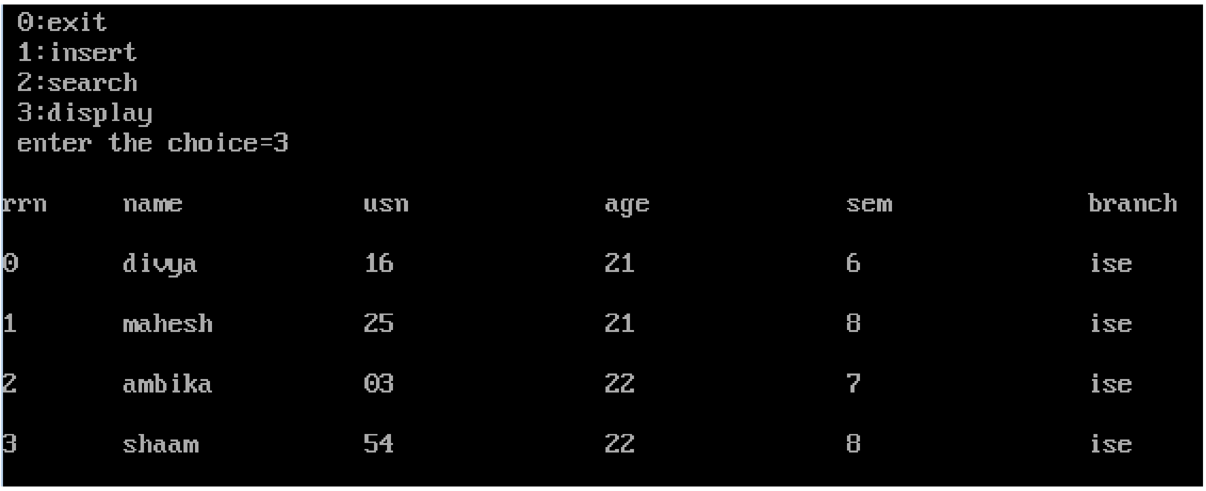
```
 0:exit
 1:insert
 2:search
 3:display
 enter the choice= 1
how many records
4

enter the student name: divya

enter the usn: 16

enter the age: 21

enter the sem: 6

enter the branch: ise
```



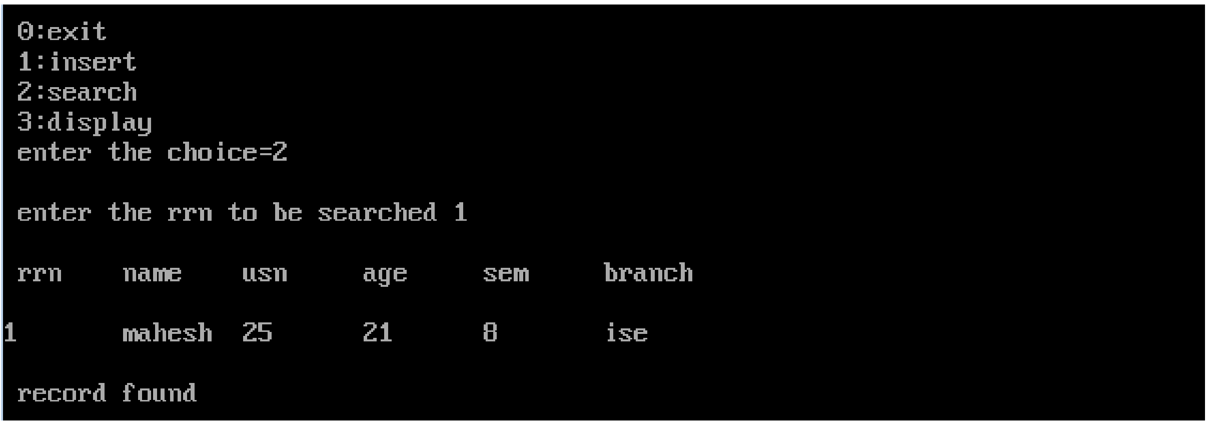
```
enter the student name: mahesh

enter the usn: 25

enter the age: 21

enter the sem: 8

enter the branch: ise

enter the student name: ambika

enter the usn: 03

enter the age: 22

enter the sem: 7

enter the branch: ise
```



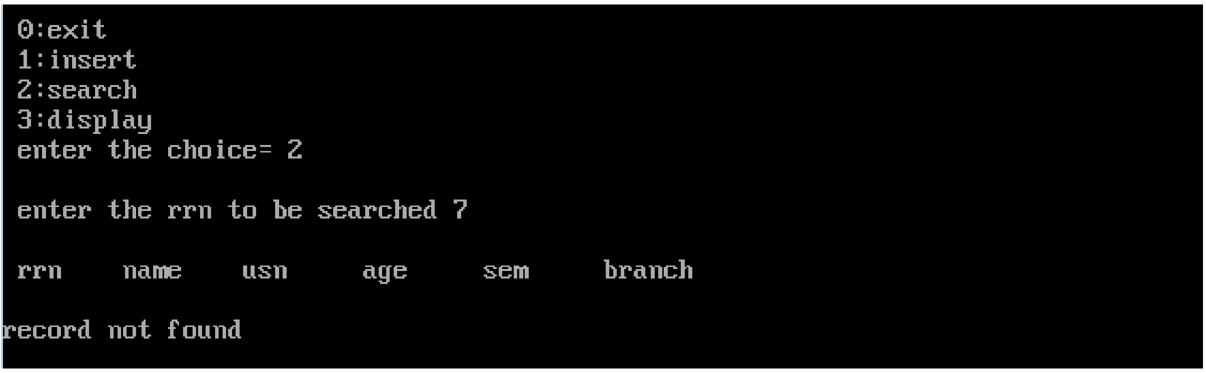
```
enter the student name: shaam

enter the usn: 54

enter the age: 22

enter the sem: 8

enter the branch: ise_
```



```
 0:exit
 1:insert
 2:search
 3:display
 enter the choice=3

rrn     name            usn             age             sem             branch

0       divya           16              21              6               ise

1       mahesh          25              21              8               ise

2       ambika          03              22              7               ise

3       shaam           54              22              8               ise
```



```
 0:exit
 1:insert
 2:search
 3:display
 enter the choice=2

 enter the rrn to be searched 1

 rrn    name    usn     age     sem     branch

1       mahesh  25      21      8       ise

 record found
```



```
 0:exit
 1:insert
 2:search
 3:display
 enter the choice= 2

 enter the rrn to be searched 7

 rrn    name    usn     age     sem     branch

record not found
```

5. Write a C++ program to implement simple index on primary key for a file of student objects. Implement add ( ), search ( ), delete ( ) using the index.

```
#include<stdio.h>
#include<stdlib.h>
#include<conio.h>
#include<iostream>
#include<fstream>
#include<string.h>
using namespace std;

class record
{
                public: char name[10],usn[10],age[5],sem[5],branch[5];
}rec[20];

char st_no[5];
int no;

void retrieve_details()
{
        fstream file2;
        char name[20];
        char age[5];
        char usn[20];
        char sem[2];
        char branch[5];
        char ind[5];

        file2.open("record.txt",ios::in);

        for(int i=0;i<no;i++)
        {
                file2.getline(ind,5,'|');
                file2.getline(usn,20,'|');
                file2.getline(name,20,'|');
                file2.getline(age,5,'|');
                file2.getline(sem,5,'|');
                file2.getline(branch,5,'\n');

                if(strcmp(ind,st_no)==0)
                {
                        cout<<"\n\t"<<"student details :\n";
                        cout<<"\n\tUSN\tNAME\tAGE\tSEM\tBRANCH\n";
                        cout<<"\n\t"<<usn<<"\t"<<name<<"\t";
                        cout<<age<<"\t"<<sem<<"\t"<<branch<<"\n";
                }
        }
        file2.close();
}

void delete_record(char usno[])
{
```

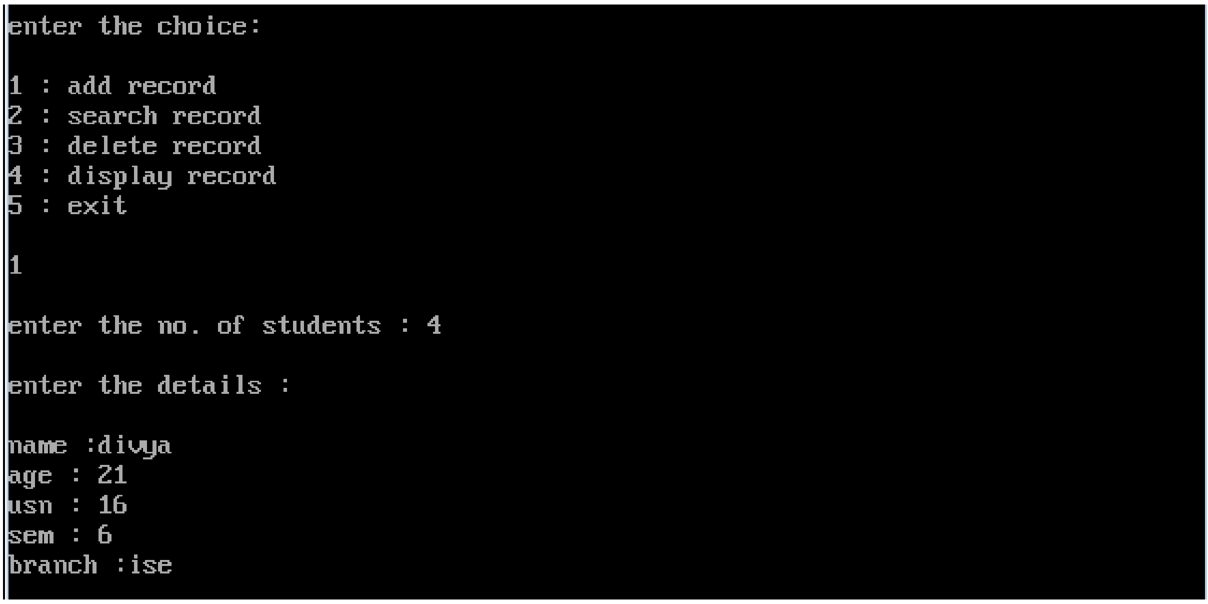
```
int i;
fstream file1,file2;
char name[20];
char age[5];
char usn[20];
char sem[2];
char branch[5];
char ind[5];

file2.open("record.txt",ios::in);

for(i=0;i<no;i++)
{
        file2.getline(ind,5,'|');
        file2.getline(usn,20,'|');
        file2.getline(name,20,'|');
        file2.getline(age,5,'|');
        file2.getline(sem,5,'|');
        file2.getline(branch,5,'\n');

        strcpy(rec[i].usn,usn);
        strcpy(rec[i].name,name);
        strcpy(rec[i].age,age);
        strcpy(rec[i].sem,sem);
        strcpy(rec[i].branch,branch);
}

int flag=-1;

for(i=0;i<no;i++)
{
        if(strcmp(rec[i].usn,usno)==0)
        {
                flag=i;
        }
}

if(flag==-1)
{
        cout<<"error..! \n";
        return;
}

if(flag==(no-1))
{
        no--;
        cout<<"record deleted !\n";
        return;
}

for(i=flag;i<no;i++)
{
        rec[i]=rec[i+1];
}
no--;
```

```
        cout<<"\nrecord deleted !\n";
        file2.close();

        file1.open("index.txt",ios::out);
        file2.open("record.txt",ios::out);

        for(i=0;i<no;i++)
        {
                file1<<rec[i].usn<<"|"<<i<<"\n";
                file2<<i<<"|"<<rec[i].usn<<"|"<<rec[i].name<<"|"<<rec[i].age
                        <<"|"<<rec[i].sem<<"|"<<rec[i].branch<<"\n";
        }

        file1.close();
        file2.close();
        return;
}

int main()
{
        fstream file1,file2;
        int choice;
        char rt_usn[20];
        char st_usn[20];
        char ind[2];
        char name[20];
        char age[2];
        char sem[5];
        char branch[5];
        int i;
        int flag;
        int flag1;
        clrscr();

        file1.open("index.txt",ios::out);
        file2.open("record.txt",ios::out);

        if(!file1 || !file2)
        {
                cout<<"file creation error ! \n";
                exit(0);
        }

        for(;;)
        {
                cout<<"\nenter the choice:\n\n";
                cout<<"1 : add record\n";
                cout<<"2 : search record\n";
                cout<<"3 : delete record\n";
                cout<<"4 : display record\n";
                cout<<"5 : exit\n\n";
                cin>>choice;
```

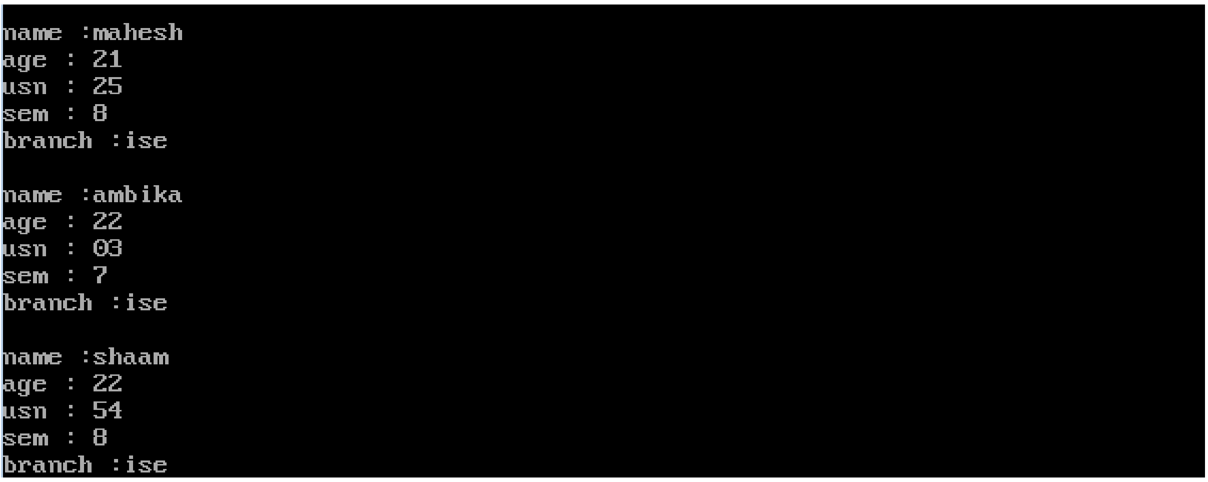
```
switch(choice)
{
        case 1:  cout<<"\nenter the no. of students : ";
                 cin>>no;
                 cout<<"\nenter the details :\n";
                 for(i=0;i<no;i++)
                 {
                         cout<<"\nname :";
                         cin>>rec[i].name;
                         cout<<"age : ";
                         cin>>rec[i].age;
                         cout<<"usn : ";
                         cin>>rec[i].usn;
                         cout<<"sem : ";
                         cin>>rec[i].sem;
                         cout<<"branch :";
                         cin>>rec[i].branch;


                         file1<<rec[i].usn<<"|"<<i<<"\n";
                         file2<<i<<"|"<<rec[i].usn<<"|"<<rec[i].name
                                 <<"|"<<rec[i].age<<"|"<<rec[i].sem
                                 <<"|"<<rec[i].branch<<"\n";
                 }

                 file1.close();
                 file2.close();
                 break;

        case 2:   cout<<"\nenter the USN of the student record to be searched\n";
                 cin>>st_usn;
                 file1.open("index.txt",ios::in);
                 if(!file1)
                 {
                         cout<<"error!\n";
                         exit(0);
                 }
                 flag1=0;
                 for(i=0;i<no;i++)
                 {
                         file1.getline(rt_usn,20,'|');
                         file1.getline(st_no,4,'\n');
                         if(strcmp(st_usn,rt_usn)==0)
                         {
                                 retrieve_details();
                                 flag1=1;
                         }
                 }
                 if(!flag1)
                 {
                         cout<<"\nrecord search failed !!\n";
                 }
                 file1.close();
                 break;
```

```
                    case 3: cout<<"\nenter the USN of the student record to be deleted\n\n";
                        cin>>st_usn;
                        file1.open("index.txt",ios::in);
                        if(!file1)
                        {
                            cout<<"error !\n";
                            exit(0);
                        }
                        flag=0;
                        for(i=0;i<no;i++)
                        {
                            file1.getline(rt_usn,20,'|');
                            file1.getline(st_no,4,'\n');
                            if(strcmp(st_usn,rt_usn)==0)
                            {
                                delete_record(rt_usn);
                                flag=1;
                            }
                        }
                        if(!flag)
                        {
                            cout<<"deletion failed!\n";
                        }
                        file1.close();
                        break;

                    case 4:  cout<<"\n\tUSN\tNAME\tAGE\tSEM\tBRANCH\t\n";
                        for(i=0;i<no;i++)
                        {
                            cout<<"\n\t"<<rec[i].usn;
                            cout<<"\t"<<rec[i].name;
                            cout<<"\t"<<rec[i].age;
                            cout<<"\t"<<rec[i].sem;
                            cout<<"\t"<<rec[i].branch<<"\n";
                        }
                        break;

                    case 5:  exit(0);

                    default:  cout<<"invalid choice !\n";
                        break;
                }
        }
}
```

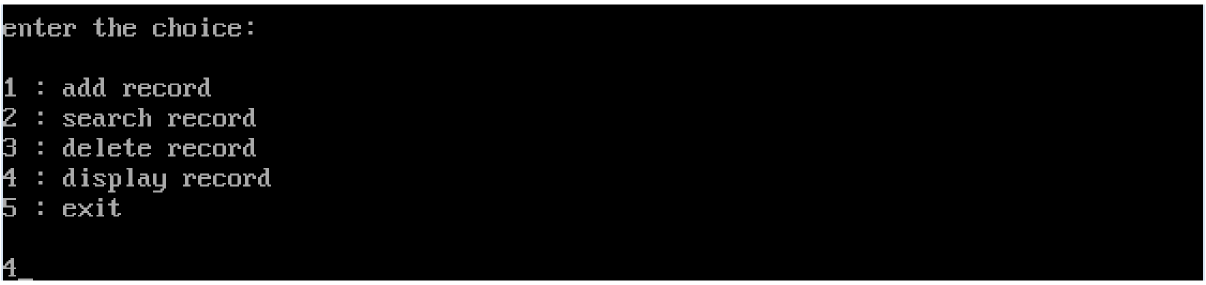
OUTPUT:



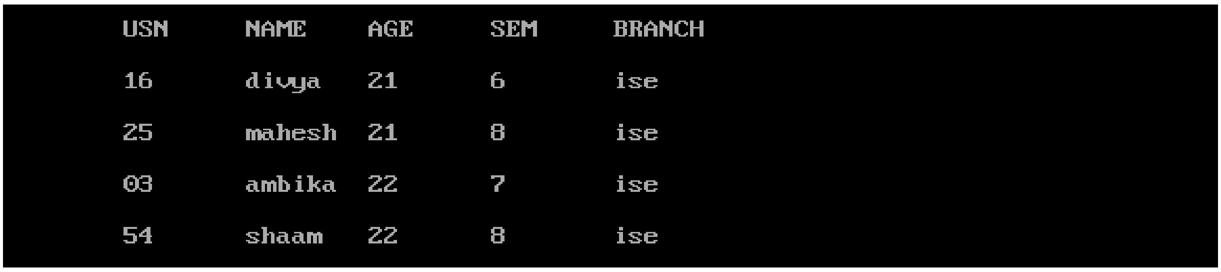
```
enter the choice:

1 : add record
2 : search record
3 : delete record
4 : display record
5 : exit

1

enter the no. of students : 4

enter the details :

name :divya
age : 21
usn : 16
sem : 6
branch :ise
```



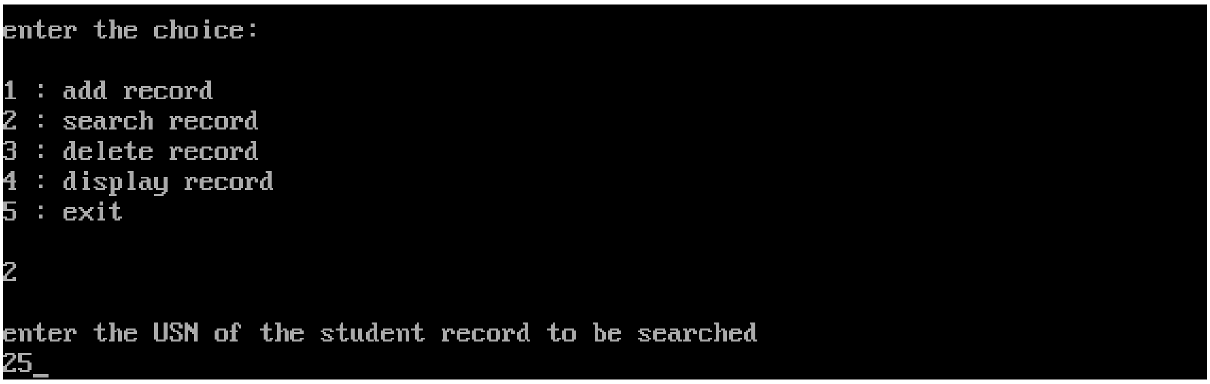
```
name :mahesh
age : 21
usn : 25
sem : 8
branch :ise

name :ambika
age : 22
usn : 03
sem : 7
branch :ise

name :shaam
age : 22
usn : 54
sem : 8
branch :ise
```



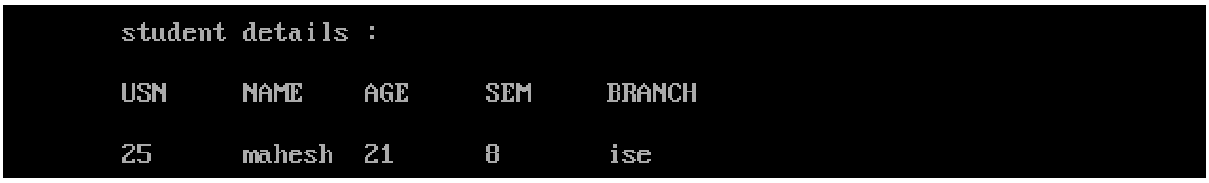
```
enter the choice:

1 : add record
2 : search record
3 : delete record
4 : display record
5 : exit

4_
```



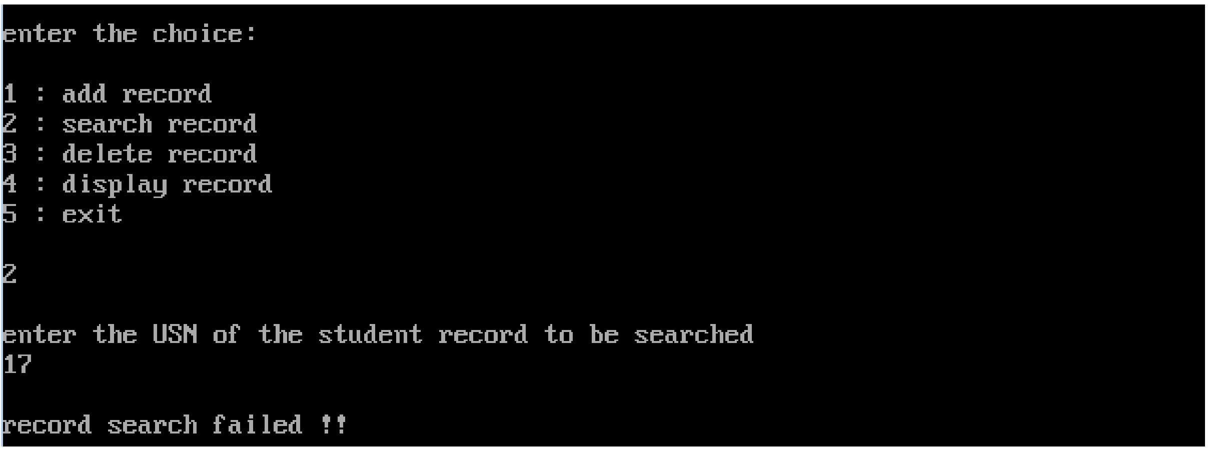
```
        USN     NAME     AGE     SEM     BRANCH

        16      divya    21      6       ise

        25      mahesh   21      8       ise

        03      ambika   22      7       ise

        54      shaam    22      8       ise
```



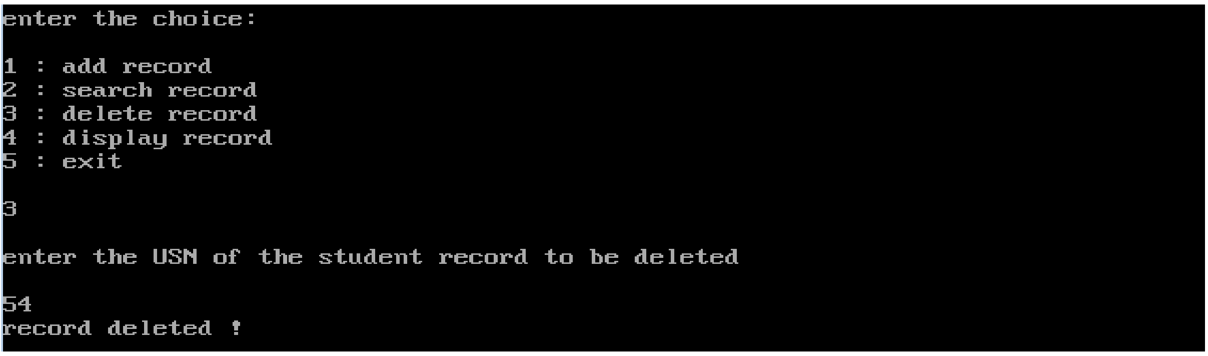
```
enter the choice:

1 : add record
2 : search record
3 : delete record
4 : display record
5 : exit

2

enter the USN of the student record to be searched
25_
```



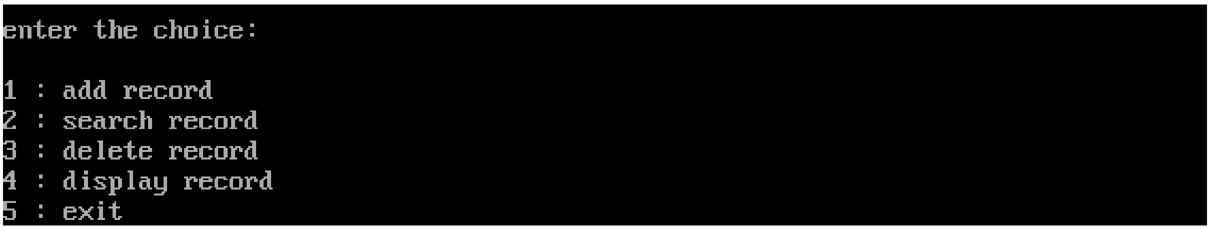
```
        student details :

        USN     NAME    AGE     SEM     BRANCH

        25      mahesh  21      8       ise
```



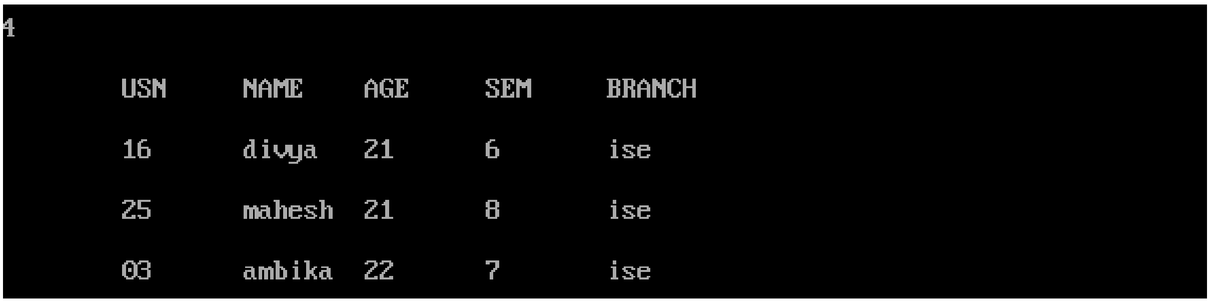
```
enter the choice:

1 : add record
2 : search record
3 : delete record
4 : display record
5 : exit

2

enter the USN of the student record to be searched
17

record search failed !!
```



```
enter the choice:

1 : add record
2 : search record
3 : delete record
4 : display record
5 : exit

3

enter the USN of the student record to be deleted

54
record deleted !
```



```
enter the choice:

1 : add record
2 : search record
3 : delete record
4 : display record
5 : exit
```



```
4

       USN     NAME    AGE     SEM     BRANCH

       16      divya   21      6       ise

       25      mahesh  21      8       ise

       03      ambika  22      7       ise
```

6. Write a C++ program to implement index on secondary key, the name, for a file of student objects. Implement add ( ), search ( ), delete ( ) using the secondary index.

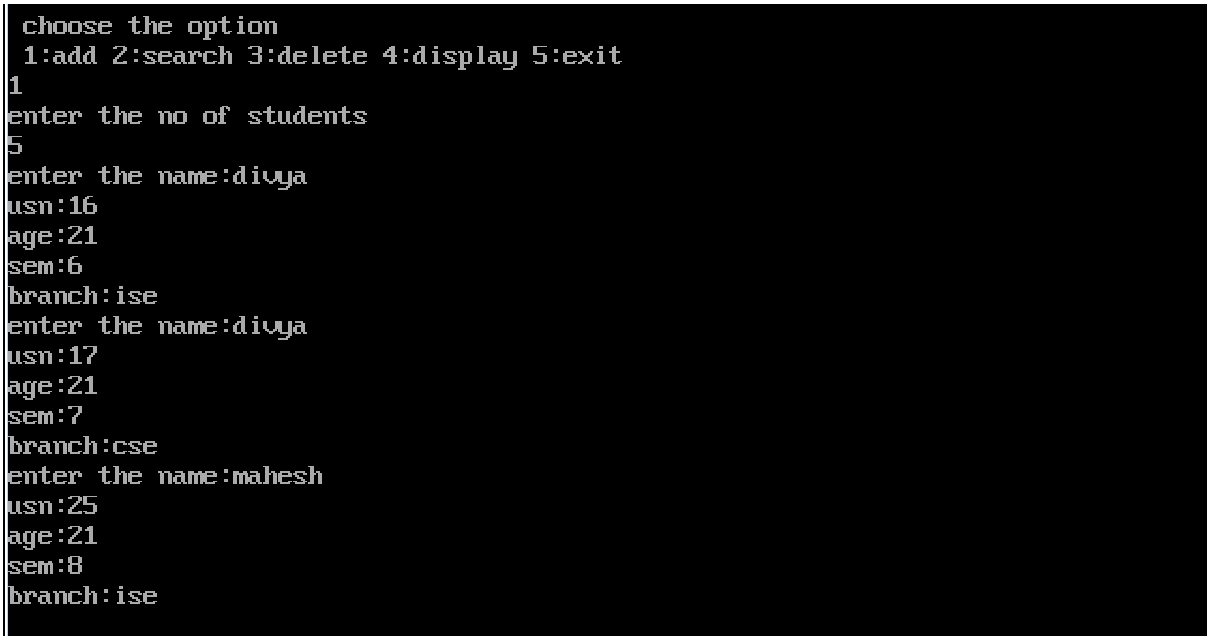
```
#include<stdio.h>
#include<stdlib.h>
#include<conio.h>
#include<iostream>
#include<fstream>
#include<string.h>
using namespace std;

class record
{
        public:
                char age[5],sem[5],usn[20],name[20],branch[5];
}rec[20],found[20];

int no;
char st_no[5],rt_name[20];

void sortrecord()
{
        int i,j;
        record temp;
        for(i=0;i<no-1;i++)
        for(j=0;j<no-i-1;j++)
        if(strcmp(rec[j].name,rec[j+1].name)>0)
        {
                temp=rec[j];
                rec[j]=rec[j+1];
                rec[j+1]=temp;
        }
}
```

If strcmp(rec[j].name, rec[j+1].name) returns a value greater than 0, it means that rec[j].name is lexicographically greater than rec[j+1].name. In other words, the string rec[j].name comes after rec[j+1].name when sorted alphabetically

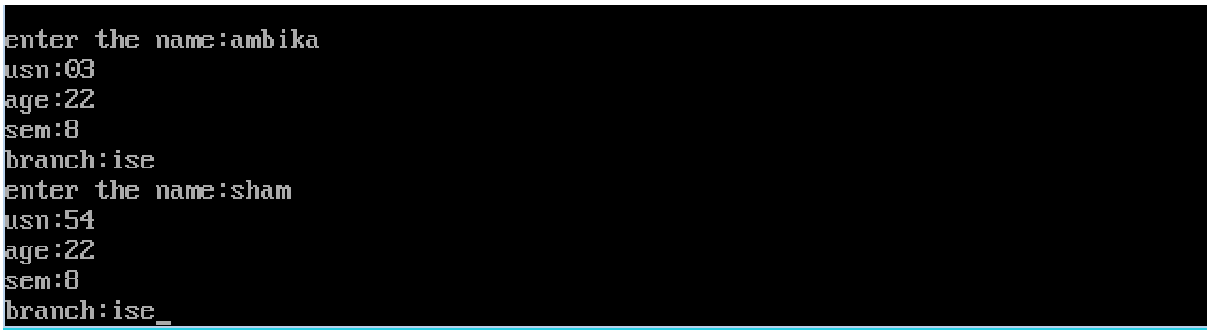
```
void indexfile()
{
        fstream index,index2;
        int i;
        index.open("secindex.txt",ios::out);
        index2.open("record.txt",ios::out);
        for(i=0;i<no;i++)
        {
                 index<<rec[i].name<<"|"<<rec[i].usn<<"|"<<i<<"\n";
                 index2<<i<<"|"<<rec[i].name<<"|"<<rec[i].usn<<"|"<<
                         rec[i].age<<"|"<<rec[i].sem<<"|"<<rec[i].branch<<"\n";
        }
        index.close();
        index2.close();
}

void retrieve_record(char *index)
{
        fstream file;
        char age[5],sem[5],usn[20],name[20],branch[5],ind[5];
        file.open("record.txt",ios::in);
        for(int i=0;i<no;i++)
        {
                file.getline(ind,5,'|');
                file.getline(name,20,'|');
                file.getline(usn,20,'|');
                file.getline(age,5,'|');
                file.getline(sem,5,'|');
                file.getline(branch,5,'\n');
                if(strcmp(index,ind)==0)
                {
                        cout<<"USN\tNAME\tAGE\tSEM\tBRANCH\n";
                        cout<<usn<<"\t"<<name<<"\t"<<age<<"\t"<<sem<<"\t"<<branch<<"\n";
                }
        }
        file.close();
}

void retrieve_details()
{
        fstream file;
        char age[5],sem[5],usn[20],name[20],branch[5],ind[5];
        char chusn[20],index[20][20];
        file.open("secindex.txt",ios::in);
        int k=0;
        for(int i=0;i<no;i++)
        {
                file.getline(name,20,'|');
                file.getline(usn,20,'|');
                file.getline(ind,4,'\n');
                if(strcmp(name,rt_name)==0)
                {
                        strcpy(found[k].name,name);
                        strcpy(found[k].usn,usn);
                        strcpy(index[k],ind);
                        k++;
                }

        }
        file.close();
        if(k==1)
        {
                retrieve_record(index[0]);
                return;
        }
        else
        {
        cout<<"choose the candidates usn\n";
        for(i=0;i<k;i++)
        cout<<"USN:"<<found[i].usn<<"\tNAME:"<<found[i].name<<endl;
        }
        cin>>chusn;
        for(i=0;i<k;i++)
        {
                if(strcmp(chusn,found[i].usn)==0)
                {
                        retrieve_record(index[i]);
                        return;
                }
        }
        cout<<"invalid entry\n";
        return;
}

void delete_record(char *indx)
{
        char age[5],sem[5],usn[20],name[20],branch[5],ind[5];
        fstream file1,file2;
        char index[20][20];
        file2.open("record.txt",ios::in);
        for(int i=0;i<no;i++)
        {
                file2.getline(ind,4,'|');
                file2.getline(name,20,'|');
                file2.getline(usn,20,'|');
                file2.getline(age,5,'|');
                file2.getline(sem,5,'|');
                file2.getline(branch,5,'\n');
                strcpy(index[i],ind);
                strcpy(rec[i].usn,usn);
                strcpy(rec[i].name,name);
                strcpy(rec[i].age,age);
                strcpy(rec[i].sem,sem);
                strcpy(rec[i].branch,branch);
        }
        int flag=-1;
        for(i=0;i<no;i++)
        {
                if(strcmp(index[i],indx)==0)
                flag=i;
        }
        if(flag==-1)
        {
                cout<<"error\n";
                return;
        }
        if(flag==(no-1))
        {
                no--;
                cout<<"record deleted\n";
                return;
        }
        for(i=flag;i<no;i++)
        {
                rec[i]=rec[i+1];
        }
        no--;
        cout<<"record deleted\n";
        file2.close();
        file1.open("secindex.txt",ios::in);
        file2.open("record.txt",ios::in);
        for(i=0;i<no;i++)
        {
                file1<<rec[i].name<<"|"<<rec[i].usn<<"|"<<i<<"\n";
                file2<<i<<"|"<<rec[i].name<<"|"<<rec[i].usn<<"|"<<
                        rec[i].age<<"|"<<rec[i].sem<<"|"<<rec[i].branch<<"\n";
        }
        file1.close();
        file2.close();
}

void delete_index(char *nam)
{
        fstream file;
        char age[5],sem[5],usn[20],name[20],branch[5],ind[5];
        char chusn[20],index[20][20];
        int i,k=0;
        file.open("secindex.txt",ios::in);
        for(i=0;i<no;i++)
        {
                file.getline(name,20,'|');
                file.getline(usn,20,'|');
                file.getline(ind,4,'\n');
                if(strcmp(nam,name)==0)
                {
                        strcpy(found[k].name,name);
                        strcpy(found[k].usn,usn);
                        strcpy(index[k],ind);
                        k++;
                }

        }
        file.close();
        if(k==1)
        {
                delete_record(index[0]);
                return;
        }
        else
        {
        cout<<"choose the candidates usn\n";
        for(i=0;i<k;i++)
        cout<<"USN:"<<found[i].usn<<"   NAME:"<<found[i].name<<endl;
        }
        cin>>chusn;
        for(i=0;i<k;i++)
        {
                if(strcmp(chusn,found[i].usn)==0)
                {
                        delete_record(index[i]);
                        return;
                }
        }
        cout<<"invalid entry\n";
        return;
}


int main()
{
        fstream file1,file2;
        char rt_usn[20],st_name[20],st_usn[20];
        char age[5],sem[5],name[20],branch[5],ind[5];
        int i,flag,flag1,choice;
        for(;;)
        {
                cout<<"\n choose the option\n 1:add 2:search 3:delete 4:display 5:exit\n";
                cin>>choice;
                switch(choice)
                {
                        case 1:cout<<"enter the no of students\n";
                                cin>>no;
                                for(i=0;i<no;i++)
                                {
                                        cout<<"enter the name:";
                                        cin>>rec[i].name;
                                        cout<<"usn:";
                                        cin>>rec[i].usn;
                                        cout<<"age:";
                                        cin>>rec[i].age;
                                        cout<<"sem:";
                                        cin>>rec[i].sem;
                                        cout<<"branch:";
                                        cin>>rec[i].branch;
                                }
                                sortrecord();
                                indexfile();
                                break;

                        case 2: cout<<"enter the name of the record to be searched\n";
                                cin>>st_name;
                                file1.open("secindex.txt",ios::in);
                                if(!file1)
                                {
                                        cout<<"file creation error\n";
                                        exit(0);
                                }
                                flag1=0;
                                for(i=0;i<no;i++)
                                {
                                        file1.getline(rt_name,20,'|');
                                        file1.getline(st_usn,20,'|');
                                        file1.getline(st_no,4,'\n');
                                        if(strcmp(st_name,rt_name)==0)
                                        {
                                                retrieve_details();
                                                flag1=1;
                                        }
                                }
```

```
                                        if(!flag1)
                                        cout<<"record search failed \n";
                                        file1.close();
                                        break;

                                case 3: cout<<"enter the name of the record to be deleted\n";
                                        cin>>st_name;
                                        file1.open("secindex.txt",ios::in);
                                        if(!file1)
                                        {
                                                cout<<"file creation error\n";
                                                exit(0);
                                        }
                                        flag=0;
                                        for(i=0;i<no;i++)
                                        {
                                                file1.getline(rt_name,20,'|');
                                                file1.getline(st_usn,20,'|');
                                                file1.getline(ind,4,'\n');
                                                if(strcmp(st_name,rt_name)==0)
                                                {
                                                        delete_index(rt_name);
                                                        flag=1;
                                                        break;
                                                }
                                        }
                                        if(!flag)
                                        cout<<"deletion failed \n";
                                        file1.close();
                                        break;

                                 case 4: cout<<"USN\tNAME\tAGE\tSEM\tBRANCH\n";
                                        for(i=0;i<no;i++)
                                        {
                                        cout<<rec[i].usn<<"\t"<<rec[i].name<<"\t"<<rec[i].age<<"\t"
                                        <<rec[i].sem<<"\t"<<rec[i].branch<<"\n";
                                        }
                                        break;

                                default:cout<<"invalid choice\n";
                                        exit(0);
                                        break;
                        }
                }
        }
```

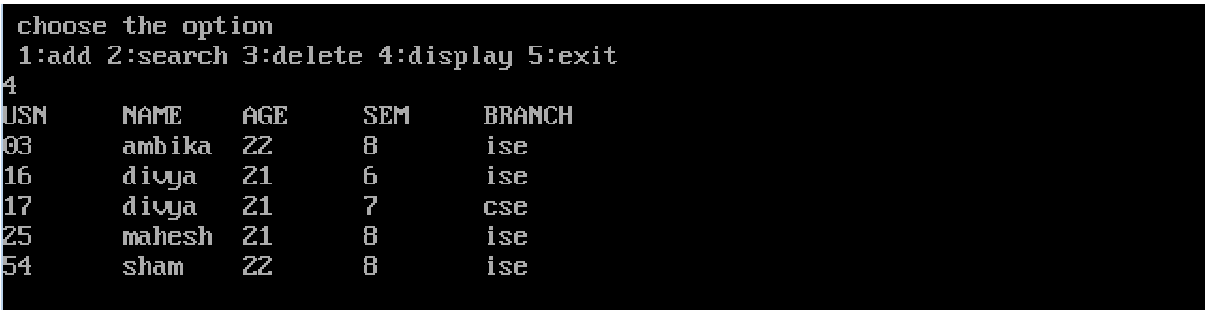
OUTPUT:



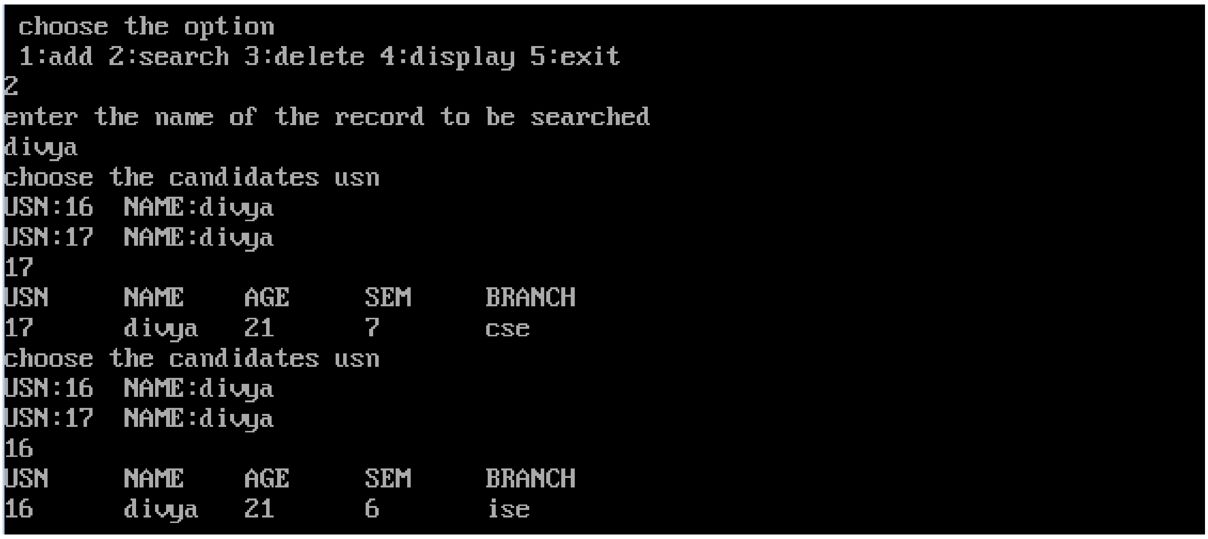
```
 choose the option
 1:add 2:search 3:delete 4:display 5:exit
1
enter the no of students
5
enter the name:divya
usn:16
age:21
sem:6
branch:ise
enter the name:divya
usn:17
age:21
sem:7
branch:cse
enter the name:mahesh
usn:25
age:21
sem:8
branch:ise
```



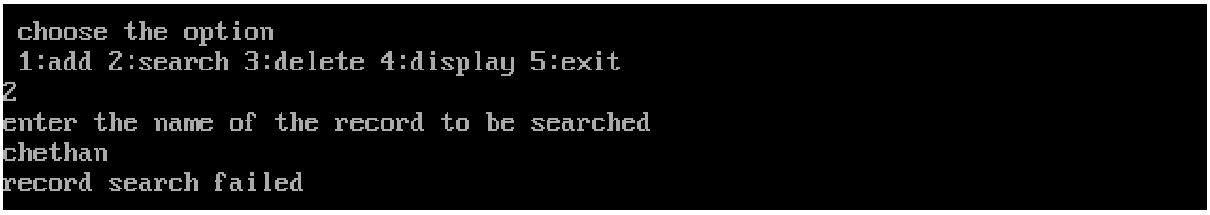
```
enter the name:ambika
usn:03
age:22
sem:8
branch:ise
enter the name:sham
usn:54
age:22
sem:8
branch:ise_
```



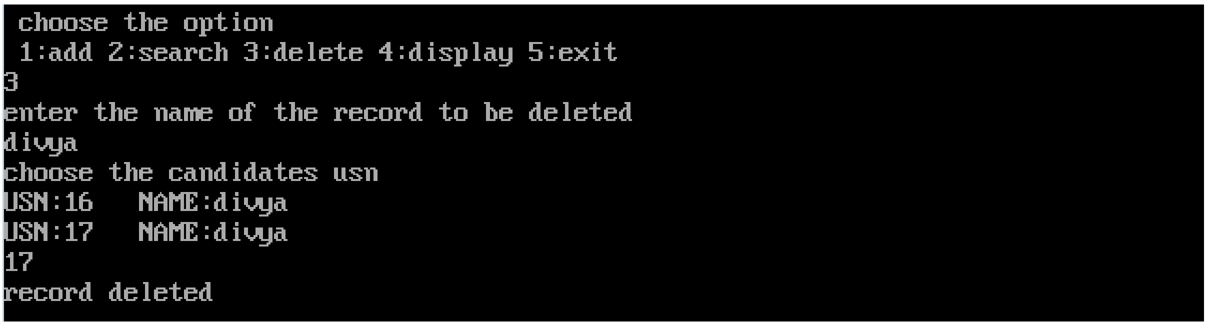
```
 choose the option
 1:add 2:search 3:delete 4:display 5:exit
4
USN     NAME    AGE     SEM     BRANCH
03      ambika  22      8       ise
16      divya   21      6       ise
17      divya   21      7       cse
25      mahesh  21      8       ise
54      sham    22      8       ise
```



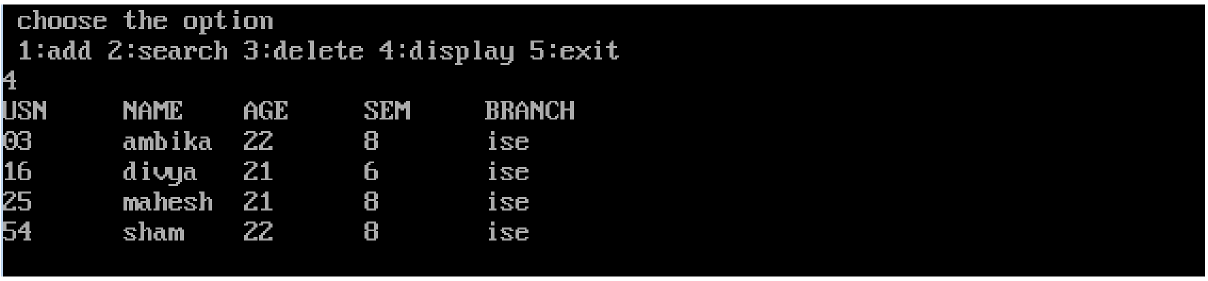
```
 choose the option
 1:add 2:search 3:delete 4:display 5:exit
2
enter the name of the record to be searched
divya
choose the candidates usn
USN:16  NAME:divya
USN:17  NAME:divya
17
USN     NAME    AGE     SEM     BRANCH
17      divya   21      7       cse
choose the candidates usn
USN:16  NAME:divya
USN:17  NAME:divya
16
USN     NAME    AGE     SEM     BRANCH
16      divya   21      6       ise
```



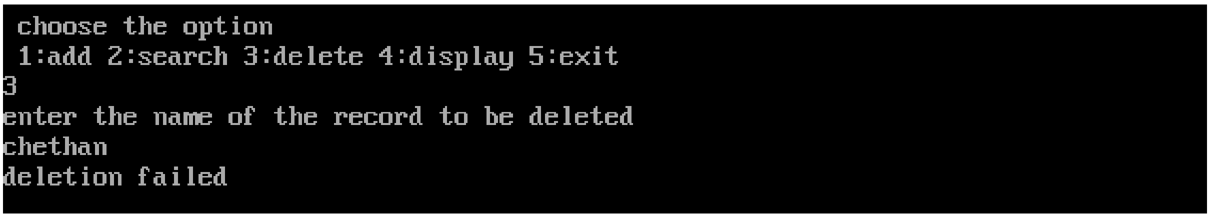
```
 choose the option
 1:add 2:search 3:delete 4:display 5:exit
2
enter the name of the record to be searched
chethan
record search failed
```



```
 choose the option
 1:add 2:search 3:delete 4:display 5:exit
3
enter the name of the record to be deleted
divya
choose the candidates usn
USN:16   NAME:divya
USN:17   NAME:divya
17
record deleted
```



```
 choose the option
 1:add 2:search 3:delete 4:display 5:exit
4
USN     NAME    AGE     SEM     BRANCH
03      ambika  22      8       ise
16      divya   21      6       ise
25      mahesh  21      8       ise
54      sham    22      8       ise
```



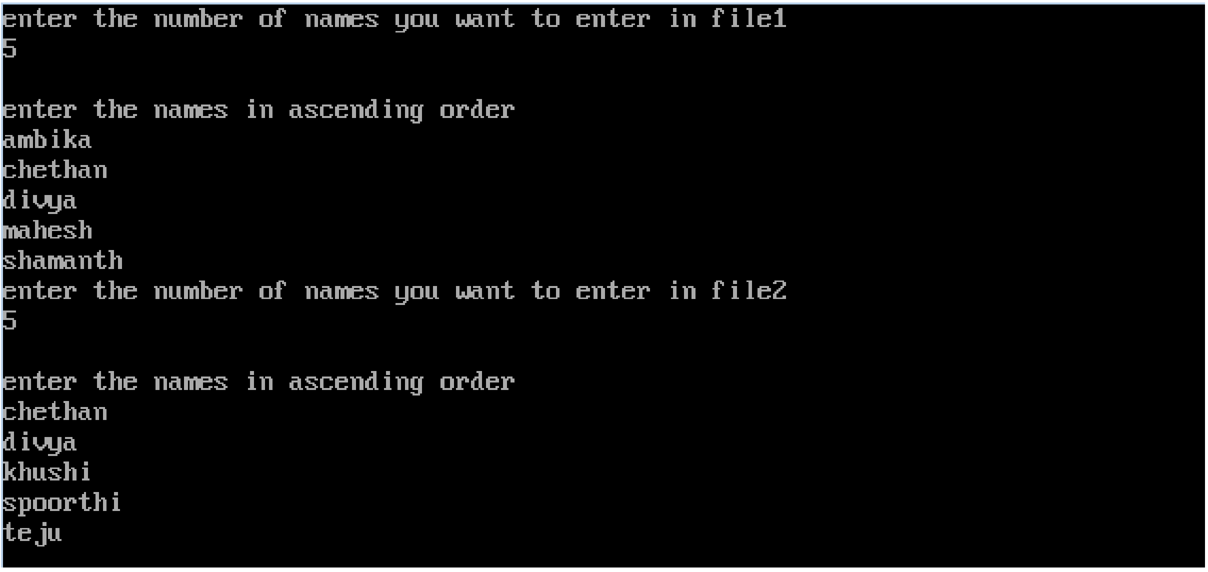
```
 choose the option
 1:add 2:search 3:delete 4:display 5:exit
3
enter the name of the record to be deleted
chethan
deletion failed
```

7. Write a C++ program to read two lists of names and then match the names in the two lists using Co-sequential Match based on a single loop. Output the names common to both the lists.

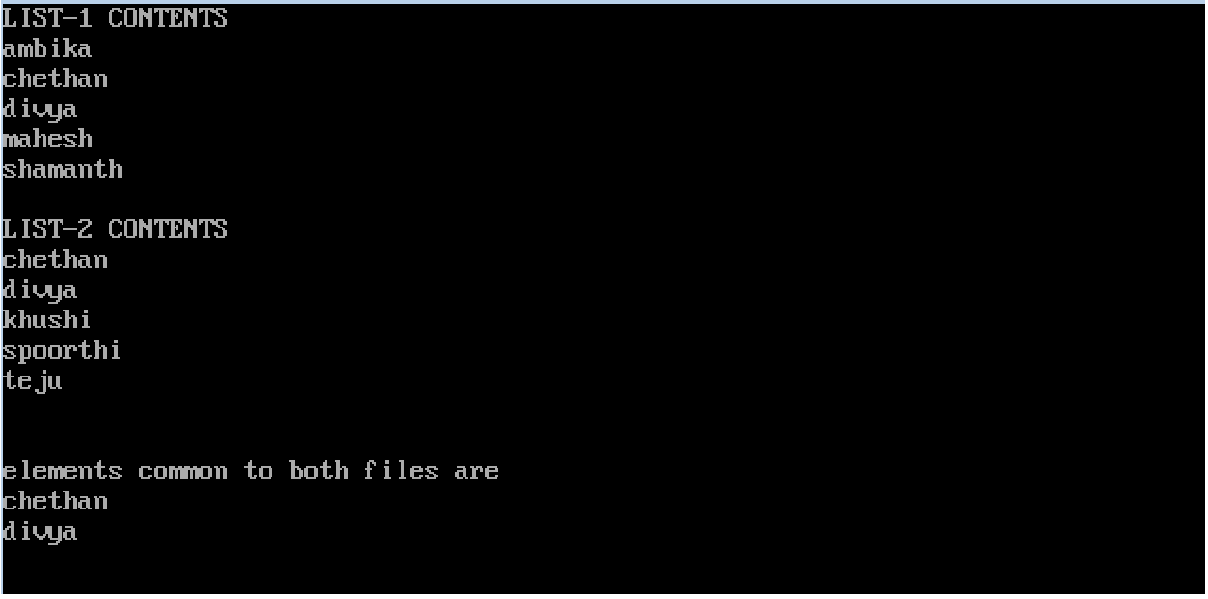
```
#include<stdio.h>
#include<stdlib.h>
#include<conio.h>
#include<iostream>
#include<fstream>
#include<string.h>
using namespace std;

void writeLists()
{
        fstream out1,out2;
        int i;
        int m;
        int n;
        char name[20];

        out1.open("file1.txt",ios::out);
        out2.open("file2.txt",ios::out);

        if( (!out1) || (!out2))
        {
                printf("unable to open one of the list files\n");
                getch();
                exit(0);
        }
        cout<<"enter the number of names you want to enter in file1\n";
        cin>>m;
        cout<<"\nenter the names in ascending order\n";
        for(i=0;i<m;i++)
        {
                cin>>name;
                out1<<name;
                out1<<'\n';
        }
        cout<<"enter the number of names you want to enter in file2\n";
        cin>>n;
        cout<<"\nenter the names in ascending order\n";
        for(i=0;i<n;i++)
        {
                cin>>name;
                out2<<name;
                out2<<'\n';
        }
        out1.close();
        out2.close();
}

void main()
{
        char list1[100][20];
        char list2[100][20];
        int i;
        int j;
        int m;
        int n;
        clrscr();
        fstream out1,out2,out3;

        writeLists();

        out1.open("file1.txt",ios::in);
        out2.open("file2.txt",ios::in);
        out3.open("file3.txt",ios::out);

        if( (!out1) || (!out2) || (!out3))
        {
                printf("unable to open one of the file");
                getch();
                exit(0);
        }

        clrscr();
        m=0;
        n=0;
        printf("LIST-1 CONTENTS\n");

        while( !out1.eof())
        {
                out1.getline(list1[m],20,'\n');
                cout<<list1[m];
                cout<<"\n";
                m++;
        }

        printf("LIST-2 CONTENTS\n");

        while( !out2.eof())
        {
                out2.getline(list2[n],20,'\n');
                cout<<list2[n];
                cout<<"\n";
                n++;
        }
        m--;
        n--;
        i=0;
        j=0;
        cout<<"\nelements common to both files are\n";

        while(i<m && j<n)
        {
                if(strcmp(list1[i],list2[j])==0)
                {
                        out3<<list1[i];
                        cout<<list1[i]<<"\n";
```

```
				out3<<'\n';
				i++;
				j++;
			}
			else if(strcmp(list1[i],list2[j])<0)
			{
				i++;
			}
			else
			{
				j++;
			}
		}
		getch();
}
```

OUTPUT:



```
enter the number of names you want to enter in file1
5

enter the names in ascending order
ambika
chethan
divya
mahesh
shamanth
enter the number of names you want to enter in file2
5

enter the names in ascending order
chethan
divya
khushi
spoorthi
teju
```



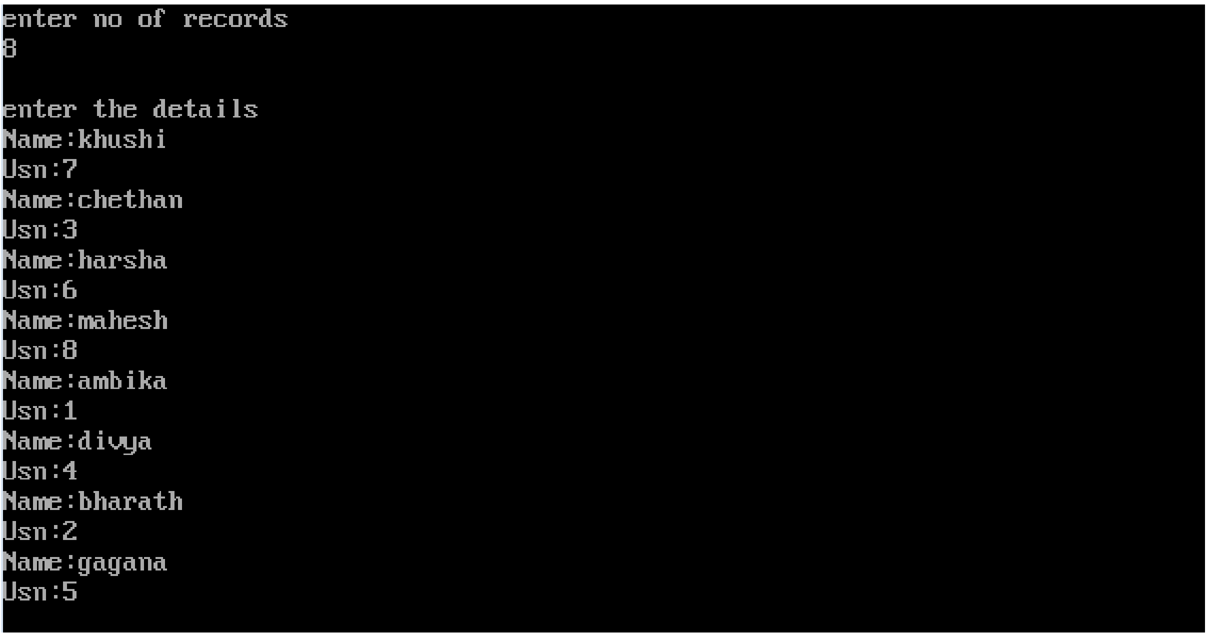
```
LIST-1 CONTENTS
ambika
chethan
divya
mahesh
shamanth

LIST-2 CONTENTS
chethan
divya
khushi
spoorthi
teju


elements common to both files are
chethan
divya
```

8. Write a C++ program to read k Lists of names and merge them using k-way merge algorithm with k = 8.

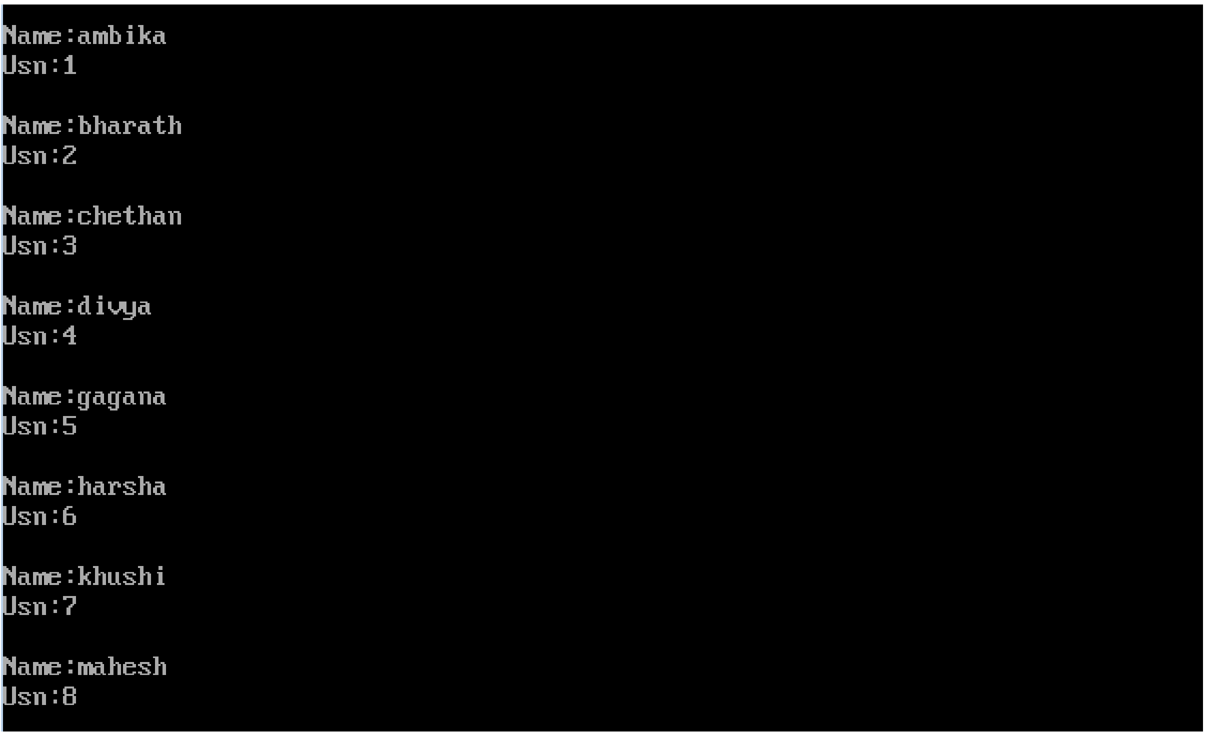
```
#include<stdio.h>
#include<stdlib.h>
#include<conio.h>
#include<iostream>
#include<fstream>
#include<string.h>
using namespace std;

class record
{
	public:char name[20], usn[20];
}rec[20];

fstream file[8];
int no;
char fname[8][8]={"1.txt","2.txt","3.txt","4.txt","5.txt","6.txt","7.txt","8.txt"};

void merge_file(char* file1,char* file2,char* filename)
{
	record recd[20];
	int i,k;
	k=0;
	fstream f1,f2;
	f1.open(file1,ios::in);
	f2.open(file2,ios::in);
	while(!f1.eof())
	{
		f1.getline(recd[k].name,20,'|');
		f1.getline(recd[k++].usn,20,'\n');
	}
	while(!f2.eof())
	{
		f2.getline(recd[k].name,20,'|');
		f2.getline(recd[k++].usn,20,'\n');
	}
	int t,y;
	record temp;
	for(t=0;t<k-2;t++)
	for(y=0;y<k-t-2;y++)
	if(strcmp(recd[y].name,recd[y+1].name)>0)
	{
		temp=recd[y];
		recd[y]=recd[y+1];
		recd[y+1]=temp;
	}
	fstream temp1;
	temp1.open(filename,ios::out);
	for(t=1;t<k-1;t++)
	temp1<<recd[t].name<<"|"<<recd[t].usn<<"\n";
	f1.close();
	f2.close();
```

```
        temp1.close();
        return;
}

void kwaymerge()
{
        int i,k;
        k=0;
        char filename[7][20]={"11.txt","22.txt","33.txt","44.txt","111.txt","222.txt","1111.txt"};
        for(i=0;i<8;i+=2)
        {
                merge_file(fname[i],fname[i+1],filename[k++]);
        }
        k=4;
        for(i=0;i<4;i+=2)
        {
                merge_file(filename[i],filename[i+1],filename[k++]);
        }
        merge_file(filename[4],filename[5],filename[6]);
        return;
}

int main()
{
        int i;
        clrscr();
        cout<<"enter no of records\n";
        cin>>no;
        cout<<"\nenter the details\n";
        for(i=0;i<8;i++)
        file[i].open(fname[i],ios::out);
        for(i=0;i<no;i++)
        {
                cout<<"Name:";
                cin>>rec[i].name;
                cout<<"Usn:";
                cin>>rec[i].usn;
                file[i%8]<<rec[i].name<<"|"<<rec[i].usn<<"\n";
        }
        for(i=0;i<8;i++)
        file[i].close();
        kwaymerge();
        fstream result;
        result.open("1111.txt",ios::in);
        cout<<"sorted records\n";
        char name[20],usn[20];
        for(i=0;i<no;i++)
        {
                result.getline(name,20,'|');
                result.getline(usn,20,'\n');
                cout<<"\nName:"<<name<<"\nUsn:"<<usn<<"\n";
        }
        getch();
        return 0;
}
```

OUTPUT:



```
enter no of records
8

enter the details
Name:khushi
Usn:7
Name:chethan
Usn:3
Name:harsha
Usn:6
Name:mahesh
Usn:8
Name:ambika
Usn:1
Name:divya
Usn:4
Name:bharath
Usn:2
Name:gagana
Usn:5
```



```
Name:ambika
Usn:1

Name:bharath
Usn:2

Name:chethan
Usn:3

Name:divya
Usn:4

Name:gagana
Usn:5

Name:harsha
Usn:6

Name:khushi
Usn:7

Name:mahesh
Usn:8
```