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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.

### File\_structure6.cpp

```
#include<iostream.h>
#include<string.h>
#include<fstream.h>
#include<stdlib.h>
#include<conio.h>

int n=0,index=0;

class student
{
    public: char name[20],usn[20],branch[5];
           int sem;

           void insert(fstream &f1,fstream &f2)
           {
               cout<<"Enter Name: ";
               cin>>name;
               cout<<"Enter USN: ";
               cin>>usn;
               cout<<"Enter Sem: ";
               cin>>sem;
               cout<<"Enter Branch: ";
               cin>>branch;
               write(f1,f2);
           }

           void write(fstream &f1,fstream &f2)
           {
               f1<<++index<<"\t"<<name<<"\n";
               f2<<name<<"\t"<<usn<<"\t"<<sem<<"\t"<<branch<<"\n"
               ;
           }

           void display(fstream &f2)
           {
               f2>>name>>usn>>sem>>branch;
               cout<<name<<"\t"<<usn<<"\t"<<sem<<"\t"<<branch<<"\n"
               ;
           }

           int search(fstream &f1,char key[20])
           {
               int i,x;
               for(i=1;i<=n;i++)
               {
                   f1>>x>>name;
```

```
        if(strcmp(name,key)==0)
            return i;
    }
    cout<<"Record not found\n";
    return 0;
}

int remove(fstream &f1,char key[20])
{
    int i;
    i=search(f1,key);
    return i;
}
};

void main()
{
    fstream f1,f2;
    student s[20],p;
    int ch,k=0,i;
    clrscr();
    f1.open("m.txt",ios::trunc);
    f2.open("mn.txt",ios::trunc);
    f1.close();
    f2.close();
    for(;;)
    {
        cout<<"1.Insert 2.Display 3.Search 4.Delete 5.Exit\n";
        cout<<"Enter choice: ";
        cin>>ch;
        switch(ch)
        {
            case 1: f1.open("m.txt",ios::app);
                    f2.open("mn.txt",ios::app);
                    cout<<"Enter no. of students: ";
                    cin>>k;
                    n=n+k;
                    for(int i=1;i<=k;i++)
                        s[i].insert(f1,f2);
                    f1.close();
                    f2.close();
                    break;
            case 2: f2.open("mn.txt",ios::in);
                    for(i=1;i<=n;i++)
                        s[i].display(f2);
                    f2.close();
                    break;
            case 3: char name[20];
                    cout<<"Enter name to search: ";
```

```

        cin>>name;
        f1.open("m.txt",ios::in);
        f2.open("mn.txt",ios::in);
        int j=p.search(f1,name);
        if(j!=0)
        {
            cout<<"Record found & Details are\n";
            cout<<"Name="<<s[j].name<<"\n"<<"USN="<<s[j].usn<<"\n"
            <<"Sem="<<s[j].sem<<"\n"<<"Branch="<<s[j].branch<<"\n"
            ;
        }
        f1.close();
        f2.close();
        break;
    case 4: f1.open("m.txt",ios::in);
        f2.open("mn.txt",ios::in);
        cout<<"Enter name to delete: ";
        cin>>name;
        j=p.remove(f1,name);
        if(j!=0)
        {
            for(i=j;i<n;i++)
                s[i]=s[i+1];
            cout<<"Deletion successfull\n";
        }
        n--;
        index--;
        f1.close();
        f2.close();
        f1.open("m.txt",ios::trunc|ios::app);
        f2.open("mn.txt",ios::trunc|ios::app);
        index=0;
        for(i=1;i<=n;i++)
            s[i].write(f1,f2);
        f1.close();
        f2.close();
        break;
    default:exit(0);
}
}
}

```

**Output :**

```

1.Insert 2.Display 3.Search 4.Delete
5.Exit Enter u'r choice : 1

```

```

Enter the no. of students :2

```

```

Enter the details:

```

```

Name: ajay

```

```

USN: 1vk07is002

```

Sem: 6  
Branch: ise

Name: rahul  
USN: 1vk07cs045  
Sem: 6  
Branch: cse

1.Insert 2.Display 3.Search 4.Delete  
5.Exit Enter u'r choice: 2

ajay	1vk07is002	6	ise
rahul	1vk07cs045	6	cse

1. Insert 2.Display 3.Search 4.Delete  
5.Exit Enter u'r choice :3

Enter USN to  
search: 1vk07is002

ajay	1vk07is002	6	ise
------	------------	---	-----

1. Insert 2.Display 3.Search 4.Delete  
5.Exit Enter u'r choice: 4

Enter name whose record is to be deleted:  
1vk07cs045 Deletion succesfull

1. Insert 2.Display 3.Search 4.Delete  
5.Exit Enter u'r choice: 5