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#include<fstream>
#include<iostream>
using namespace std;
class student
{
public:
    int roll_no;
    char name[30];
    float marks;
    int n;
    void create();
    void display();
    int search(student s, int key);
    void delet();
    void modify();
    void insert();
};

char fname[20];
int main()
{
    student s;
    int ch, key, result;
    do
    {
        cout << "\nMenu:\n1.Create file\n2.Display file\n3.Insert Record\n4.Search Record\n5.Delete Record\n6.Modify Record\n7.Exit\nEnter your choice: ";
        cin >> ch;
        switch (ch)
        {
            case 1:
                s.create();
                break;
            case 2:
                s.display();
                break;
            case 3:
                cout << "\nEnter the roll no: ";
                cin >> key;
                result = s.search(s, key);
                if (result == -1)
                {
                    cout << "\nThe roll no is not present and now you can insert it.";
                    s.insert();
                    s.n++;
                    s.display();
                }
        }
    }
}

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else
{
    cout << "The data is present";
    cout << "Present at position=" << result;
}
break;
case 4:
search: ";
    cout << "\nEnter the roll_no you want to
    cin >> key;
    result = s.search(s, key);
    if (result == -1)
    {
        cout << "\nThe data is not present";
    }
    else
    {
        cout << "The data is present\n";
        cout << "Present at position=" << result;
    }
    break;
case 5:
    cout << "\nEnter roll_no: ";
    cin >> key;
    result = s.search(s, key);
    if (result == -1)
    {
        cout << "\nThe roll no is already
absent";
    }
    else
    {
        cout << "The roll no is present and you
can delete the roll no.\n";
        cout << "Present at position=" << result;
        s.delet();
        s.n--;
        s.display();
    }
    break;
case 6:
    cout << "\nEnter the roll no: ";
    cin >> key;
    result = s.search(s, key);
    if (result == -1)
    {
        cout << "\nThe roll no is not present";
    }
    else
    {
        cout << "\nThe roll no is present and now
you can modify the data\n";
        cout << "\nPresent at position=" <<
result;
        s.modify();
        s.display();
    }
}

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        break;
    case 7:
        cout << "\nExit";
        break;
    }
} while (ch != 7);
return 0;
}

void student::create()
{
    int i;
    student s;
    ofstream fout;
    cout << "Enter the file name: ";
    cin >> fname;
    fout.open(fname);
    if (!fout)
    {
        cout << "File not created...";
    }
    else
    {
        cout << "File is created successfully...";
        cout << "\nEnter the total number of records you
want to write: ";
        cin >> n;

        for (i = 0; i < n; i++)
        {
            cout << "\n Enter roll no,name ,marks:";
            cin >> s.roll_no >> s.name >> s.marks;
            fout.write((char*)&s, sizeof(s));
        }
    }
    fout.close();
}

void student::display()
{
    int i;
    student s;
    ifstream fin;
    fin.open(fname);
    cout << "\nRoll_no   Name \t Marks";
    cout << "\n";
    for (i = 0; i < n; i++)
    {
        fin.read((char*)&s, sizeof(s));
        cout << s.roll_no << "\t " << s.name << "\t" <<
s.marks;
        cout << "\n";
    }
    fin.close();
}

void student::insert()

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{
    int i;
    student s;
    FILE *fp = NULL;
    fp = fopen(fname, "a");
    cout << "\n Enter new roll no,name ,marks:";
    cin >> s.roll_no >> s.name >> s.marks;
    fwrite(&s, 1, sizeof(s), fp);
    fclose(fp);
}

int student::search(student s, int key)
{
    int i, flag = -1;
    ifstream fin;
    fin.open(fname);
    for (i = 0; i < n; i++)
    {
        fin.read((char*)&s, sizeof(s));
        if (s.roll_no == key)
        {
            flag = i;
            break;
        }
    }
    return flag;
}

void student::delet()
{
    ofstream fout;
    ifstream fin;
    student s;
    int key, i;
    fin.open(fname);
    if (!fin)
    {
        cout << "\n File is not present...";
    }
    else
    {
        cout << "\nEnter the roll no that you want to
delete:";
        cin >> key;
        fout.open("temp.c");
        for (i = 0; i < n; i++)
        {
            fin.read((char*)&s, sizeof(s));
            if (s.roll_no != key)
            {
                fout.write((char*)&s, sizeof(s));
            }
        }
        fout.close();
        fin.close();
    }
}

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        remove(fname);
        rename("temp.c", fname);
    }
}

void student::modify()
{
    ofstream fout;
    ifstream fin;
    student s;
    int key, i;
    fin.open(fname);
    if (!fin)
    {
        cout << "\n File is not present...";
    }
    else
    {
        cout << "\nEnter the roll no that you want to
modify:";
        cin >> key;
        fout.open("temp.c");
        for (i = 0; i < n; i++)
        {
            fin.read((char*)&s, sizeof(s));
            if (s.roll_no != key)
            {
                fout.write((char*)&s, sizeof(s));
            }
            else
            {
                s.roll_no = key;
                cout << "\nEnter new name and new marks:
";
                cin >> s.name >> s.marks;
                fout.write((char*)&s, sizeof(s));
            }
        }
        fin.close();
        fout.close();
        remove(fname);
        rename("temp.c", fname);
    }
}
/*

```

output

Menu:

- 1.Create file
- 2.Display file
- 3.Insert Record
- 4.Search Record
- 5.Delete Record
- 6.Modify Record

7.Exit

Enter your choice: 1

Enter the file name: file.cpp

File is created successfully...

Enter the total number of records you want to write: 3

Enter roll no,name ,marks: 20 asd 50

Enter roll no,name ,marks:21 qwe 55

Enter roll no,name ,marks:22 zxc 60

Menu:

1.Create file

2.Display file

3.Insert Record

4.Search Record

5.Delete Record

6.Modify Record

7.Exit

Enter your choice: 2

Roll_no	Name	Marks
20	asd	50
21	qwe	55
22	zxc	60

Menu:

1.Create file

2.Display file

3.Insert Record

4.Search Record

5.Delete Record

6.Modify Record

7.Exit

Enter your choice: 3

Enter the roll no: 23

The roll no is not present and now you can insert it.

Enter new roll no,name ,marks:23 fgh 65

Roll_no	Name	Marks
20	asd	50
21	qwe	55
22	zxc	60
23	fgh	65

Menu:

1.Create file

2.Display file

3.Insert Record

4.Search Record

5.Delete Record

6.Modify Record

7.Exit

Enter your choice: 4

6

Enter the roll_no you want to search: 23
The data is present
present at position=3

Menu:

- 1.Create file
- 2.Display file
- 3.Insert Record
- 4.Search Record
- 5.Delete Record
- 6.Modify Record
- 7.Exit

Enter your choice: 5

Enter roll_no: 23

The roll no is present and you can delete the roll no.
Present at position=3

Enter the roll no that you want to delete:23

Roll_no	Name	Marks
20	asd	50
21	qwe	55
22	zxc	60

Menu:

- 1.Create file
- 2.Display file
- 3.Insert Record
- 4.Search Record
- 5.Delete Record
- 6.Modify Record
- 7.Exit

Enter your choice: 6

Enter the roll no: 22

The roll no is present and now you can modify the data

Present at position=2

Enter the roll no that you want to modify:22

Enter new name and new marks: jklhg 70

Roll_no	Name	Marks
20	asd	50
21	qwe	55
22	jklhg	70

Menu:

- 1.Create file
- 2.Display file
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- 4.Search Record
- 5.Delete Record
- 6.Modify Record
- 7.Exit

Enter your choice: