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

Program Screenshots:

```
#include <iostream>
#include <stdlib.h>
//#include<process.h>
#include <string.h>
#include <fstream>
using namespace std;
class student
{
public:
    char name[20], usn[10], age[5], sem[5], branch[5];
};
student s[100], t;
char buffer[45], temp[20];
int count = 0, i;
fstream fp1;
void pack(student p)
{
    fp1.open("hello1.txt", ios::out | ios::app);
    strcpy(buffer, p.name);
    strcat(buffer, "|");
    strcat(buffer, p.usn);
    strcat(buffer, "|");
    strcat(buffer, p.age);
    strcat(buffer, "|");
    strcat(buffer, p.sem);
    strcat(buffer, "|");
    strcat(buffer, p.branch);
    strcat(buffer, "|");
    int x = strlen(buffer);
    for (int j = 0; j < 45 - x; j++)
        strcat(buffer, "!");
    cout << buffer;
    fp1 << buffer << endl;
    fp1.close();
}
```

```
void write()
{
    cout << "Enter the name\n";
    cin >> t.name;
    cout << "Enter the usn\n";
    cin >> t.usn;
    cout << "Enter the age\n";
    cin >> t.age;
    cout << "Enter the sem\n";
    cin >> t.sem;
    cout << "Enter the branch\n";
    cin >> t.branch;
    pack(t);
}
void unpack()
{
    fp1.open("hello1.txt", ios::in);
    for (i = 0; i < count; i++)
    {
        fp1.getline(buffer, 100);
        sscanf(buffer, "%[^|]|%[^|]|%[^|]|%[^|]|%[^|]|", s[i].name, s[i].usn,
s[i].age, s[i].sem, s[i].branch);
    }
    fp1.close();
}
void display()
{
    if (count == 0)
    {
        cout << "\nNo records\n";
        return;
    }
    cout << "\n name\t usn\t age\t sem\t branch\n";
    for (i = 0; i < count; i++)
        cout << s[i].name << "\t" << s[i].usn << "\t" << s[i].age << "\t" << s
[i].sem << "\t" << s[i].branch << endl;
}
void search()
{
    cout << "Enter the usn\n";
    cin >> temp;
    for (i = 0; i < count; i++)
        if (!strcmp(s[i].usn, temp))
        {
            cout << "Record found\n"
                 << s[i].name << "\t" << s[i].usn << "\t" << s[i].age << "\t"
<< s[i].sem << "\t" << s[i].branch << endl;
            break;
```

```
        }
    if (i == count)
        cout << "Record not found";
}
void modify()
{
    if (i == count)
        return;
    cout << "Enter new values\n Enter name :";
    cin >> s[i].name;
    cout << "Enter usn :";
    cin >> s[i].usn;
    cout << "Enter age :";
    cin >> s[i].age;
    cout << "Enter sem :";
    cin >> s[i].sem;
    cout << "Enter branch :";
    cin >> s[i].branch;
    fp1.close();
    remove("hello1.txt");
    fp1.open("hello1.txt", ios::out);
    fp1.close();
    for (int j = 0; j < count; j++)
        pack(s[j]);
}
int main()
{
    int c;
    //clrscr();
    fp1.open("hello1.txt", ios::out);
    fp1.close();
    while (1)
    {
        cout << "\n1.Write\n 2.Display\n 3.Search\n 4.Modify\n 5.Exit\n Enter
your choice\n";
        cin >> c;
        switch (c)
        {
        case 1:
            count++;
            write();
            break;
        case 2:
            unpack();
            display();
            break;
        case 3:
            unpack();
```

```
            search();
            break;
        case 4:
            unpack();
            search();
            modify();
            break;
        default:
            exit(0);
        }
    }
}
```

Output:

1)

```
sooraj@Asus-F-15:~/FS lab/program-2$ ls
a.out  program2.cpp
sooraj@Asus-F-15:~/FS lab/program-2$ ./a.out

1.Write
 2.Display
 3.Search
 4.Modify
 5.Exit
 Enter your choice
1
Enter the name
sooraj
Enter the usn
1cr18is151
Enter the age
22
Enter the sem
6
Enter the branch
ise
sooraj|1cr18is15122|22|6|ise|!!!!!!!!!!!!!!!
```

2)

```
1.Write
 2.Display
 3.Search
 4.Modify
 5.Exit
 Enter your choice
2

 name    usn      age     sem     branch
sooraj  1cr18is15122    22      6       ise
```