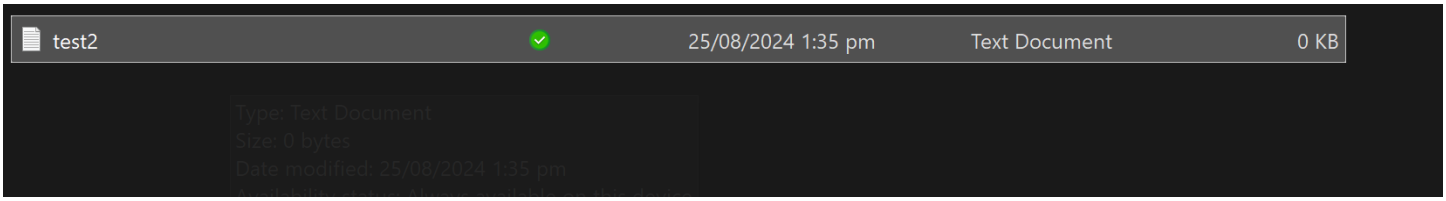
Dohn Michael B. Varquez BSCS_2

File Management System

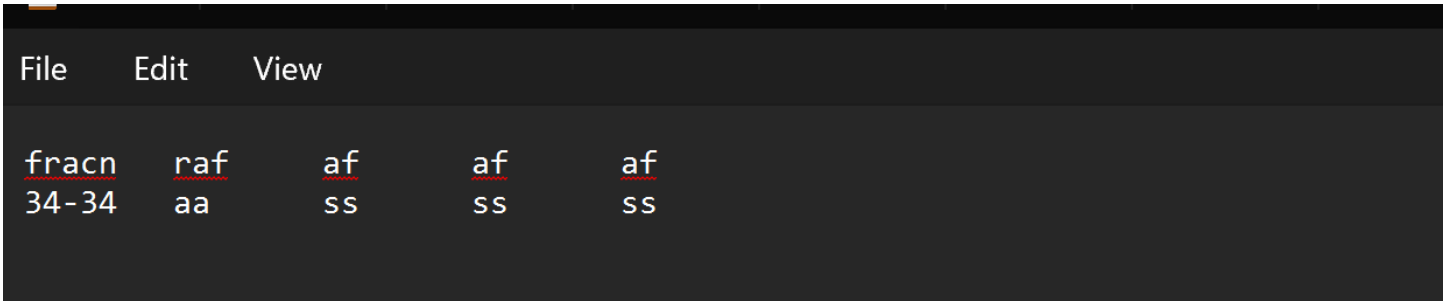
Create File

```
[1]Create New File  [2]Open an Existing File  [3]Manage Data [4]Exit
1
Enter filename(sample.txt): test2.txt
[1]Create New File  [2]Open an Existing File  [3]Manage Data [4]Exit
```



Open Existing File

```
-------------------------------------------------------------------------------
Rec             Student ID      Surname         Firstname       Birthdate       Sex
-------------------------------------------------------------------------------
1               fracn           raf             af              af              af
2               34-34           aa              ss              ss              ss
-------------------------------------------------------------------------------
[1]Create New File  [2]Open an Existing File  [3]Manage Data [4]Exit
```



Manage Data

Add

```
-------------------------------------------------------------------------------
Rec             Student ID      Surname         Firstname       Birthdate       Sex
-------------------------------------------------------------------------------
-------------------------------------------------------------------------------
[A]dd [E]dit [D]elete [S]ort sa[V]e e[X]it
A
Student ID: 23-1-02140
Surname: Varquez
Firstname: Dohn Michael
Birthdate(99/99/99): 12/01/04
Sex(M | F): M
Active File: [test2.txt]
-------------------------------------------------------------------------------
Rec             Student ID      Surname         Firstname       Birthdate       Sex
-------------------------------------------------------------------------------
1               23-1-02140      Varquez         Dohn Michael    12/01/04        M
-------------------------------------------------------------------------------
[A]dd [E]dit [D]elete [S]ort sa[V]e e[X]it
```

Edit

```
--------------------------------------------------------------------------------
Rec             Student ID      Surname         Firstname       Birthdate       Sex
--------------------------------------------------------------------------------
1               23-1-02140      Varquez         Dohn Michael    12/01/04        M
2               23-1-01570      Panelo          Frasd ms        09/21/05        F
--------------------------------------------------------------------------------
[A]dd [E]dit [D]elete [S]ort sa[V]e e[X]it
E
Choose Edit: 2
Student ID: 23-1-01570: 23-1-01570
Surname: Panelo: Panelo
Firstname: Frasd ms: Frances Ryza
Birthdate: 09/21/05: 09/21/05
Sex: F: F
Active File: [test2.txt]
--------------------------------------------------------------------------------
Rec             Student ID      Surname         Firstname       Birthdate       Sex
--------------------------------------------------------------------------------
1               23-1-02140      Varquez         Dohn Michael    12/01/04        M
2               23-1-01570      Panelo          Frances Ryza    09/21/05        F
--------------------------------------------------------------------------------
[A]dd [E]dit [D]elete [S]ort sa[V]e e[X]it
```

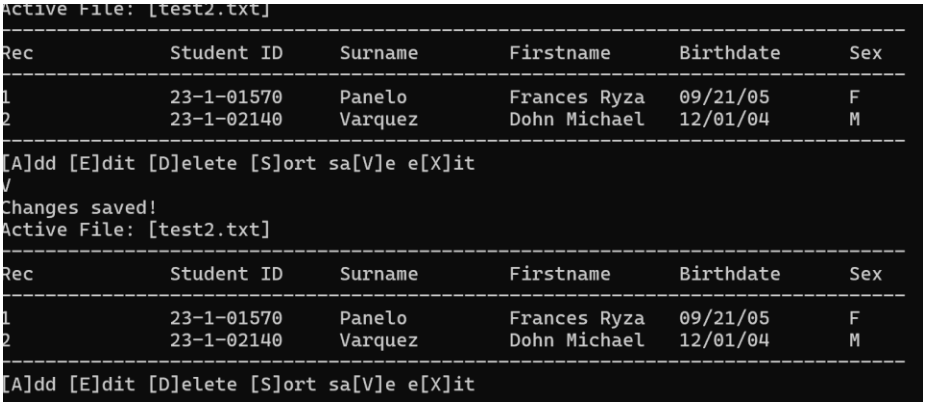
Delete

```
ctive File: [test2.txt]
--------------------------------------------------------------------------------
ec              Student ID      Surname         Firstname       Birthdate       Sex
--------------------------------------------------------------------------------
               23-1-02140      Varquez         Dohn Michael    12/01/04        M
               23-1-01570      Panelo          Frances Ryza    09/21/05        F
               sd              sd              sd              sd              sd
--------------------------------------------------------------------------------
[A]dd [E]dit [D]elete [S]ort sa[V]e e[X]it
D
hoose Delete: 3
ctive File: [test2.txt]
--------------------------------------------------------------------------------
ec              Student ID      Surname         Firstname       Birthdate       Sex
--------------------------------------------------------------------------------
               23-1-02140      Varquez         Dohn Michael    12/01/04        M
               23-1-01570      Panelo          Frances Ryza    09/21/05        F
--------------------------------------------------------------------------------
[A]dd [E]dit [D]elete [S]ort sa[V]e e[X]it
```

Sort

```
Active File: [test2.txt]
--------------------------------------------------------------------------------
Rec             Student ID      Surname         Firstname       Birthdate       Sex
--------------------------------------------------------------------------------
1               23-1-02140      Varquez         Dohn Michael    12/01/04        M
2               23-1-01570      Panelo          Frances Ryza    09/21/05        F
--------------------------------------------------------------------------------
[A]dd [E]dit [D]elete [S]ort sa[V]e e[X]it
S
Choose sort 1: 1
Choose sort 2: 2
Active File: [test2.txt]
--------------------------------------------------------------------------------
Rec             Student ID      Surname         Firstname       Birthdate       Sex
--------------------------------------------------------------------------------
1               23-1-01570      Panelo          Frances Ryza    09/21/05        F
2               23-1-02140      Varquez         Dohn Michael    12/01/04        M
--------------------------------------------------------------------------------
[A]dd [E]dit [D]elete [S]ort sa[V]e e[X]it
```

Save



Source Code

```
#include <iostream>
#include <stdlib.h>
#include <vector>
#include <fstream>
#include <string>
#include <sstream>
#include <iomanip>

using namespace std;

struct studInfo
{
   string studentId;
   string surname;
   string firstname;
   string birthdate;
   string sex;
};

void printStudInfo(string filename, const vector<studInfo>& i1, int var);
vector<studInfo> readFromData(string filename);
void saveData(string filename, const vector<studInfo>& i1);
int main()
{
   vector <studInfo> tempvec;

   string filename;
   int opt;

   do
   {
      cout<<"[1]Create New File  [2]Open an Existing File  [3]Manage Data [4]Exit"<<endl;
      cin>>opt;

      if(opt == 1)
      {
         cout<<"Enter filename(sample.txt): ";
         cin>>filename;

         ofstream outStudInfo(filename);
      }
      else if(opt == 2)
```

```
{
   cout<<"Enter filename(sample.txt): ";
   cin>>filename;

   tempvec = readFromData(filename);

   printStudInfo(filename, tempvec, 1);
}
else if(opt == 3)
{
   cout<<"Enter filename(sample.txt): ";
   cin>>filename;

   tempvec = readFromData(filename);

   char opt2;

   do
   {
      printStudInfo(filename, tempvec, 2);
      cin>>opt2;

      if(opt2 == 'A')
      {
         studInfo tempInfo;

         cout << "Student ID: ";
         cin >> tempInfo.studentId;
         cout << "Surname: ";
         cin >> tempInfo.surname;
         cout << "Firstname: ";
         cin.ignore(); // ignore the newline character left in the input buffer
         getline(cin, tempInfo.firstname);
         cout << "Birthdate(99/99/99): ";
         cin >> tempInfo.birthdate;
         cout << "Sex(M | F): ";
         cin >> tempInfo.sex;

         tempvec.push_back(tempInfo);
      }
      else if(opt2 == 'E')
      {
         int opt3;
         cout<<"Choose Edit: ";
         cin>>opt3;

         cout<<"Student ID: "<<tempvec[opt3-1].studentId<<": ";
         cin>>tempvec[opt3-1].studentId;
         cout<<"Surname: "<<tempvec[opt3-1].surname<<": ";
         cin>>tempvec[opt3-1].surname;
         cout<<"Firstname: "<<tempvec[opt3-1].firstname<<": ";
         cin.ignore();
         getline(cin,tempvec[opt3-1].firstname);
         cout<<"Birthdate: "<<tempvec[opt3-1].birthdate<<": ";
         cin>>tempvec[opt3-1].birthdate;
         cout<<"Sex: "<<tempvec[opt3-1].sex<<": ";
         cin>>tempvec[opt3-1].sex;
      }
      else if(opt2 == 'D')
```

```
            {
                int opt4;

                cout<<"Choose Delete: ";
                cin>>opt4;

                tempvec.erase(tempvec.begin() + (opt4-1));
            }
            else if(opt2 == 'S')
            {
                int opt5, opt6;
                studInfo tempInfo;

                cout<<"Choose sort 1: ";
                cin>>opt5;
                cout<<"Choose sort 2: ";
                cin>>opt6;

                tempInfo = tempvec[opt5-1];
                tempvec[opt5-1]=tempvec[opt6-1];
                tempvec[opt6-1]=tempInfo;

            }
            else if(opt2 == 'V')
            {
                cout<<"Changes saved!"<<endl;
                saveData(filename, tempvec);
            }
            else
            {
                cout<<"Option does not exist!"<<endl;
            }
            saveData(filename, tempvec);
        }while(opt2!='X');
    }
    else
    {
        cout<<"Option does not exist!"<<endl;
    }
  }while(opt!=4);
}
void printStudInfo(string filename, const vector<studInfo>& i1, int var)
{
  if(var == 1)
  {
    int ind = 1;


    cout<<"Active File: ["<<filename<<"]"<<endl;
    cout<<"-------------------------------------------------------------------------------"<<endl;
    cout<<setw(15)<<left<<"Rec"<<setw(15)<<left<<"Student ID"<<setw(15)<<left<<"Surname"<<setw(15)<<left<<
    "Firstname"<<setw(15)<<left<<"Birthdate"<<setw(15)<<left<<"Sex"<<endl;
    cout<<"-------------------------------------------------------------------------------"<<endl;
    for (const auto& entry : i1)
    {
      cout<<setw(15)<<left<<ind<<setw(15)<<left<< entry.studentId <<setw(15)<<left
        << entry.surname <<setw(15)<<left << entry.firstname <<setw(15)<<left
        << entry.birthdate <<setw(15)<<left << entry.sex << endl;
      ind++;
```

```
        }
        cout<<"-------------------------------------------------------------------------------"<<endl;
    }
    else if(var == 2)
    {
        int ind = 1;

        cout<<"Active File: ["<<filename<<"]"<<endl;
        cout<<"-------------------------------------------------------------------------------"<<endl;
        cout<<setw(15)<<left<<"Rec"<<setw(15)<<left<<"Student ID"<<setw(15)<<left<<"Surname"<<setw(15)<<left<<
        "Firstname"<<setw(15)<<left<<"Birthdate"<<setw(15)<<left<<"Sex"<<endl;
        cout<<"-------------------------------------------------------------------------------"<<endl;
        for (const auto& entry : i1)
        {
              cout<<setw(15)<<left<<ind<<setw(15)<<left<< entry.studentId <<setw(15)<<left
              << entry.surname <<setw(15)<<left << entry.firstname <<setw(15)<<left
              << entry.birthdate <<setw(15)<<left << entry.sex << endl;
           ind++;
        }
        cout<<"-------------------------------------------------------------------------------"<<endl;
        cout<<"[A]dd [E]dit [D]elete [S]ort sa[V]e e[X]it"<<endl;
    }
    else
    {
        cout<<"OPTION DOES NOT EXIST!"<<endl;
    }
}
void saveData(string filename, const vector<studInfo>& i1)
{
    ofstream outInfo;
    outInfo.open(filename, ios::out);

    for(int i = 0; i<i1.size(); i++)
    {
        outInfo<<i1[i].studentId<<"\t";
        outInfo<<i1[i].surname<<"\t";
        outInfo<<i1[i].firstname<<"\t";
        outInfo<<i1[i].birthdate<<"\t";
        outInfo<<i1[i].sex<<endl;
    }

}
vector<studInfo> readFromData(string filename)
{
    vector <studInfo> tempVec;
    ifstream inInfo;
    inInfo.open(filename);

    string line;
    while(getline(inInfo, line)) // Read the entire line
    {
        if(line.empty()) // Check if the line is empty
            continue;

        studInfo tempInfo;
        stringstream ss(line);
        getline(ss, tempInfo.studentId, '\t');
        getline(ss, tempInfo.surname, '\t');
        getline(ss, tempInfo.firstname, '\t');
```

```
        getline(ss, tempInfo.birthdate, '\t');
        getline(ss, tempInfo.sex);

        tempVec.push_back(tempInfo);
    }
    return tempVec;
}
```