Screenshots of the project and its work

Project Structure:

Some code:

- main.cpp

```cpp
#include "domain/domain.h"

bool Console_colors::is_use_colors = true; //use colors by default

int main()
{
    MainConsole mainConsole;
    mainConsole.start();
    return 0;
}
```

- domain.h

```cpp
#include "data/FileStorage/save_record.h"
#include "data/FileStorage/load_record.h"
#include "data/FileStorage/delete_record.h"


//medical records
#include "data/MedicalRecord/medical_record.h"
#include "data/MedicalRecord/diagnostic_record.h"
#include "data/MedicalRecord/treatment_record.h"
#include "data/MedicalRecord/visit_record.h"


//users
#include "data/Users/user.h"
#include "data/Users/admin.h"
#include "data/Users/doctor.h"
#include "data/Users/nurse.h"
#include "data/Users/admin_staff.h"


//console ui
//
// console colors
#include "presentation/console_ui/console_colors.h"

//add console
#include "presentation/console_ui/adds_console/add_record_console.h"
#include "presentation/console_ui/adds_console/add_user_console.h"
```

- add_record_console.h

```cpp
#ifndef ADD_RECORD_CONSOLE
#define ADD_RECORD_CONSOLE

#include "../../../lib.h"
#include "../../../data/MedicalRecord/medical_record.h"
#include "../../../data/MedicalRecord/visit_record.h"
#include "../../../data/MedicalRecord/diagnostic_record.h"
#include "../../../data/MedicalRecord/treatment_record.h"
#include "../../../data/FileStorage/save_record.h"
#include "../../../data/FileStorage/load_record.h"
#include "../../../data/FileStorage/delete_record.h"
#include "../console_colors.h"

class AddRecordConsole : public SaveRecord, public LoadRecord, public DeleteRecord {
public:
    AddRecordConsole() = default;

    void addRecord() {
        Date test_date;
        Console_colors::inputs_color();
        string name, surname;
        InsurancePolicy info_about_insurance;
        Date date_of_birth;
        cout << "Enter the name of patient: ";
        cin >> name;
        cout << "Enter the surname of patient: ";
        cin >> surname;

        try
```

- medical_record.h

```cpp
class MedicalRecord : public IMedicalRecord {
    protected:
        string _name_of_patient;
        string _surname_of_patient;
        Date _date_of_birth;
        InsurancePolicy _policy;
    public:
        MedicalRecord() {
            _name_of_patient = "";
            _surname_of_patient = "";
            _date_of_birth = Date();
            _policy = InsurancePolicy();
        }

        MedicalRecord(const string& name, const string& surname, Date date_of_birth, InsurancePolicy policy) {
            _name_of_patient = name;
            _surname_of_patient = surname;
            _date_of_birth = date_of_birth;
            _policy = policy;
        }

        MedicalRecord(const string& name, const string& surname, string date_of_birth, const string& policy) {
            _name_of_patient = name;
            _surname_of_patient = surname;
            _date_of_birth = Date::fromString(date_of_birth);
            _policy.fromString(policy);
        }

        MedicalRecord(const MedicalRecord& medical_record) {
```

- delete_record.h

```cpp
class DeleteRecord : public SaveRecord, public LoadRecord {
public:
    void deleteRecord(const string& name, const string& surname, Date date_of_visit, const string& diagnos) {
        vector<string> records = readAllRecords();
        bool recordFound = false;

        if (!is_FindRecord(name, surname, date_of_visit, diagnos)) {
            Console_colors::errors_color();
            cout << "Record not found" << endl;
            Console_colors::default_color();
            return;
        }

        string record_to_find = FindRecord(name, surname, date_of_visit, diagnos);

        int i = 0;
        for (const string& record : records) {
            if (record == record_to_find) {
                recordFound = true;
                records.erase(records.begin() + i);
                break;
            }
            i++;
        }

        if (recordFound) {
            string updatedData;
            for (const string& record : records) {
                updatedData += record + "\n";
            }
```

- file_storage.h

```cpp
class FileStorage : public IDataStorage {
private:
    string filename;  // Stores the name of the file

public:
    // Constructors
    FileStorage() : filename("data.txt") {}  // Default constructor
    FileStorage(const string& fname) : filename(fname) {}  // Constructor with a filename

    // Method to encrypt data using Caesar cipher with a shift of 3
    string encrypt(const string& data) const {
        string encrypted = data;
        for (char& c : encrypted) {
            c = c + 3;
        }
        return encrypted;
    }

    // Method to decrypt data using Caesar cipher with a shift of 3
    string decrypt(const string& data) {
        string decrypted = data;
        for (char& c : decrypted) {
            c = c - 3;
        }
        return decrypted;
    }

    // Method to save data to a file with encryption
    void saveData(const string& data) override {
        try {
```
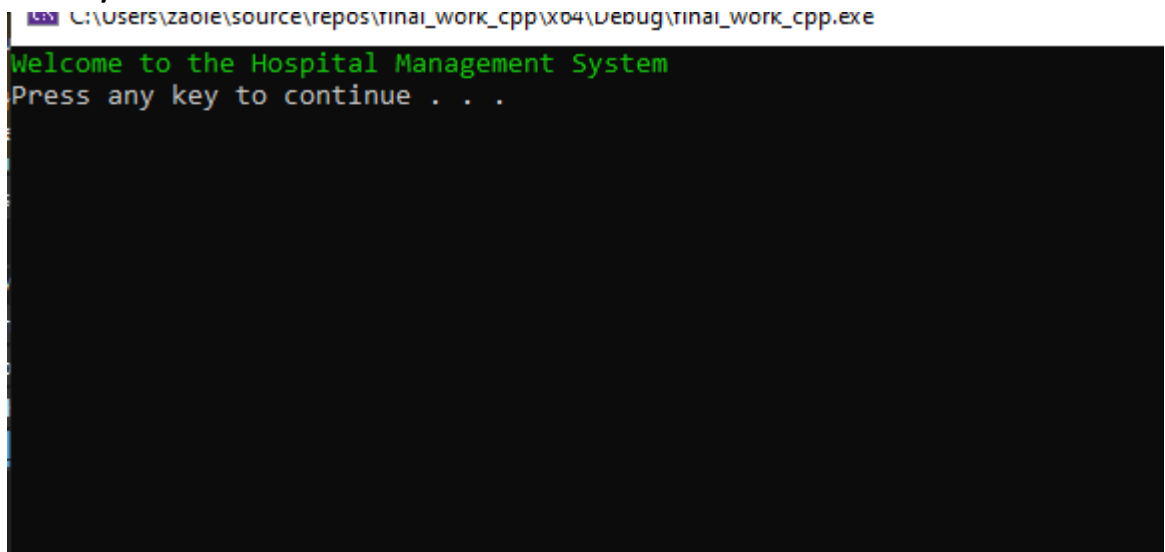
- doctor_console.h

```cpp
void DoctorMenu() {
    int choice;
    do {
        Console_colors::labels_color();
        cout << "Welcome, " << getName() << " " << getSurname() << "!" << endl;
        cout << "1. Show records" << endl;
        cout << "2. Add record" << endl;
        cout << "3. Change record" << endl;
        cout << "4. Delete record" << endl;
        cout << "5. Exit" << endl;
        Console_colors::inputs_color();
        cout << "Enter your choice: ";
        cin >> choice;
        switch (choice) {
            case 1:
                showDoctorRecords();
                break;
            case 2: {
                system("pause");
                system("cls");
                AddRecordConsole addRecordConsole;
                addRecordConsole.addRecord();
                break;
            }
            case 3: {
                system("pause");
                system("cls");
                ChangeRecordConsole changeRecordConsole;
```
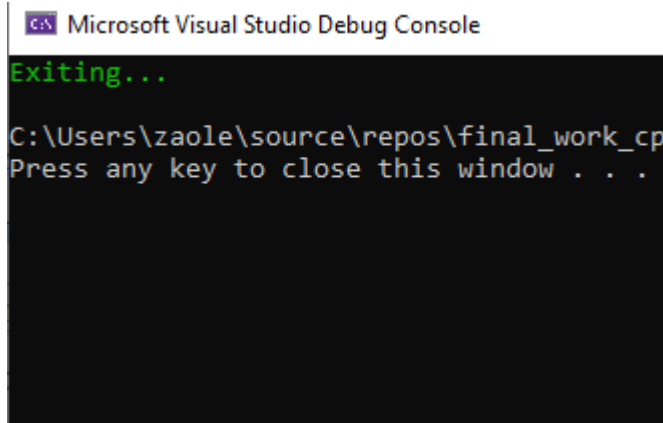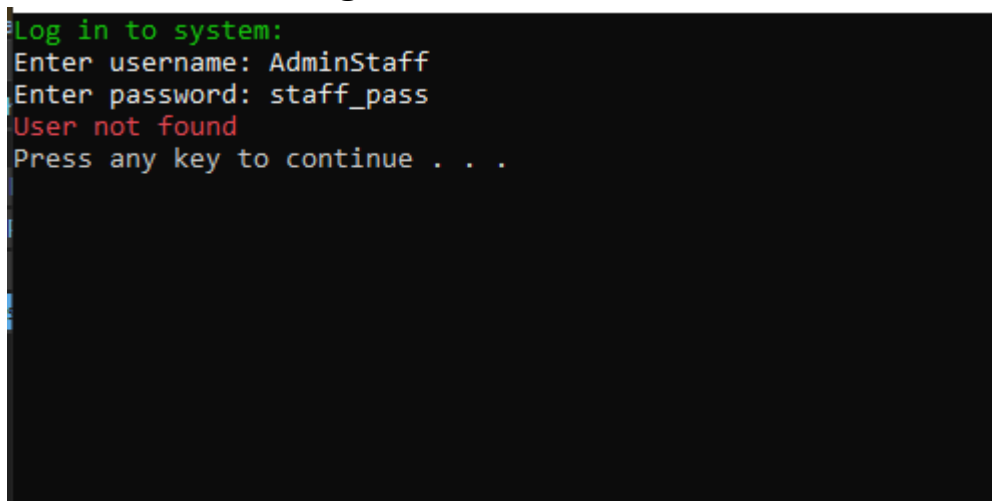
Pictures from work project:

- Start/end window


```
C:\Users\zaole\source\repos\final_work_cpp\x64\Debug\final_work_cpp.exe
Welcome to the Hospital Management System
Press any key to continue . . .
```



```
Microsoft Visual Studio Debug Console
Exiting...

C:\Users\zaole\source\repos\final_work_cpp
Press any key to close this window . . .
```

- Problems with log in:


```
Log in to system:
Enter username: AdminStaff
Enter password: staff_pass
User not found
Press any key to continue . . .
```

```
Log in to system:
Enter username: Admin
Enter password: pass
Invalid password
Press any key to continue . . .
```

- Doctor:

```
Log in to system:
Enter username: Doctor1
Enter password: doctor_pass
```

```
Welcome, Dan Healthy!
1. Show records
2. Add record
3. Change record
4. Delete record
5. Exit
Enter your choice: _
```

```
Record 1 :
Name of patient: Bob
Surname of patient: Rome
Date of birth: 18/11/2001
Insurance policy: Policy Number: 10015
Holder Name: Bob
Holder Address: NewYork, TimeSquare, 5
Insurance Company: Insuarence_corp
Coverage Amount: 100.000000
Start Date: 11/11/2023
End Date: 1/11/2024
Diagnosis: stomachache
Analysis: good
Treatment: eat healthy food
Medicines: pills
Visit Record - Date: 1/11/2024
Doctor: Dan Healthy
Nurse: Jane Care
Record 2 :
Name of patient: Bris
Surname of patient: Mode
Date of birth: 13/12/2003
Insurance policy: Policy Number:
Holder Name:
Holder Address:
Insurance Company:
Coverage Amount: 0.000000
Start Date: 1/1/1900
End Date: 1/1/1900
Diagnosis: no diagnosis
```

- Admin:

```
Log in to system:
Enter username: Admin
Enter password: password1




1. Add user
2. Delete user
3. Change user
4. Show all users
0. Exit
Enter your choice: _
```

```
User 1 :
Username: Admin
Name: no-data
Surname: no-data
Role: Admin
User 2 :
Username: AdminStaff1
Name: Alice
Surname: Rox
Role: AdminStaff
User 3 :
Username: Nurse1
Name: Jane
Surname: Care
Role: Nurse
User 4 :
Username: Doctor1
Name: Dan
Surname: Healthy
Role: Doctor
User 5 :
Username: Nurse2
Name: Ann
Surname: Heed
Role: Nurse
Press any key to continue . . . _
```

- Admin staff:

```
Log in to system:
Enter username: AdminStaff1
Enter password: staff_pass
Press any key to continue . . . _
```

```
Welcome, Alice Rox!
1. Show short records
2. Add short record
3. Exit
Enter your choice:
```

```
Record 1 :
Name of patient: Bob
Surname of patient: Rome
Date of birth patient: 18/11/2001
Visit Record - Date: 1/11/2024
Doctor: Dan Healthy
Nurse: Jane Care
Record 2 :
Name of patient: Bris
Surname of patient: Mode
Date of birth patient: 13/12/2003
Visit Record - Date: 3/12/2003
Doctor: Dan Healthy
Nurse: Jane Care
Record 3 :
Name of patient: Boris
Surname of patient: Bobik
Date of birth patient: 2/12/2012
Visit Record - Date: 8/11/2024
Doctor: Dan Healthy
Nurse: Ann Heed
Press any key to continue . . .
```

- Nurse:

```
Log in to system:
Enter username: Nurse1
Enter password: nurse_pass
Press any key to continue . . .
```

```
Welcome, Jane Care!
1. Show records
2. Exit
Enter your choice: _
```

```
Record 1 :
Name of patient: Bob
Surname of patient: Rome
Date of birth: 18/11/2001
Insurance policy: Policy Number: 10015
Holder Name: Bob
Holder Address: NewYork, TimeSquare, 5
Insurance Company: Insuarence_corp
Coverage Amount: 100.000000
Start Date: 11/11/2023
End Date: 1/11/2024
Diagnosis: stomachache
Analysis: good
Treatment: eat healthy food
Medicines: pills
Visit Record - Date: 1/11/2024
Doctor: Dan Healthy
Nurse: Jane Care
Record 2 :
Name of patient: Bris
Surname of patient: Mode
Date of birth: 13/12/2003
Insurance policy: Policy Number:
Holder Name:
Holder Address:
Insurance Company:
Coverage Amount: 0.000000
Start Date: 1/1/1900
End Date: 1/1/1900
Diagnosis: no_diagnosis
Analysis: No analysis information
Treatment: No treatment information
Medicines: No medicines information
Visit Record - Date: 3/12/2003
Doctor: Dan Healthy
Nurse: Jane Care
Press any key to continue . . . _
```

```
Welcome, Jane Care!
1. Show records
2. Exit
Enter your choice: 3
Invalid choice. Please try again.
Welcome, Jane Care!
1. Show records
2. Exit
Enter your choice:
```