

University Transilvania

Faculty of Electrical Engineering and Computer Science

Study program Electrical Engineering and Computers

PROJECT...

<TITLE>

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<DATE OF PROJECT DELIVERY>

## 1.Specification defining the problem

### 1.1 Description of the theme:

The program is a hospital management system that allows users to register new patients, search for patients, view patient records, schedule appointments, edit patient records, generate statistics, and get help.

### 1.2 Description of requirements:

The program should be able to perform the following functions:

- Register new patients
- Search for patients
- View patient records
- Schedule appointments
- Edit patient records
- Generate statistics

The program should have the following constraints:

- The user must enter a password to access the program
- The program should use a simple console-based interface
- The patient and appointment information should be saved to separate files
- The program should use the patient.hpp and appointment.hpp header files to implement the Patient and Appointment classes

The algorithms used by the program are:

- Register patient: asks the user to input patient information and saves it to a file
- View patient records: reads patient information from a file and displays it to the user
- Schedule appointment: asks the user to input appointment information and saves it to a file
- View appointment: reads appointment information from a file and displays it to the user
- Generate statistics: calculates and displays some basic statistics about the appointments

The expected results of the program are:

User should be able to register new patients, search for patients, view patient records, schedule appointments, edit patient records, generate statistics, and get help.

### 1.3 Functional specification:

#### 1 Input data:

- Password to access the program
- Patient information: name, gender, address, phone, and age
- Appointment information: date, time, patient name, and doctor name

#### 2 Output data:

- Patient information: name, gender, address, phone, and age
- Appointment information: date, time, patient name, and doctor name
- Statistics about the appointments

#### 3 Functional diagram:

- The program first asks for the password to access the program
- If the password is correct, the program displays a menu with the available options
- The user selects an option and the program calls the corresponding function
- The functions implemented in the patient.hpp and appointment.hpp header files handle the input and output of patient and appointment information.

## 1.4 User Interface:

- The program should use a simple console-based interface
- The user should navigate through the menu using number keys
- The user should input text using the keyboard
- The program should use the `getch()` function from the `conio.h` header to read input without echoing it to the console.

## 2. Project Development

### 2.1 General objectives:

The objective of the project is to create a simple hospital management system that allows users to register new patients, search for patients, view patient records, schedule appointments, edit patient records, generate statistics, and get help.

### 2.2 Description of data processed by the program:

The program processes patient and appointment information. Patient information includes the patient's name, gender, address, phone, and age, and is saved to a file named `patients.txt`. Appointment information includes the date, time, patient name, and doctor name, and is saved to a file named `appointments.txt`.

### 2.3 Description of program modules:

The program consists of the following modules:

- `patient.hpp`: contains the implementation of the Patient class and member functions to register and view patient records
- `appointment.hpp`: contains the implementation of the Appointment class and member functions to schedule and view appointments
- `main.cpp`: contains the main function and the menu options that call the functions in the `patient.hpp` and `appointment.hpp` header files.

## 3. Conclusions:

The hospital management system program is able to perform the required functions, and meets the specified requirements. Future developments of the project could include

Future developments of the project could include adding more features such as billing and inventory management. It could also include adding a login system for different users with different roles, such as doctors and nurses, to allow for better access control and security. Additionally, the program could be expanded to handle multiple hospitals or clinics.

Overall, the hospital management system program provides a simple and efficient way to manage patient records and appointments. It is easy to use and can be helpful in small hospitals or clinics. However, for larger institutions with more complex needs, a more comprehensive and specialized system may be necessary.

#### 4. References:

"C++ Programming Language", by Bjarne Stroustrup, Addison-Wesley Professional, 4th edition, 2013.

"Data Structures and Algorithms in C++", by Adam Drozdek, Cengage Learning, 4th edition, 2012.

"Beginning C++ Programming", by Richard Grimes, Wrox, 1st edition, 2014.