Name: Mai Dang Quang
Student ID: 19110054

Small Clinic Management System

1. Object-Oriented Analysis (OOA) Model
1.1 Objects (nouns) include:
- Patient
- ChronicPatient (inherit from Patient)
- Doctor
- Appointment

1.2. Atributes for each Object:
- Patient: id, name, age, medicalHistory
- ChoricPatient: Atributes inherit from Patient, conditionType, lastCheckupDate
- Doctor: id, name, specialty, appointments
- Appointment: date, time, reason, status, patientID, doctorID

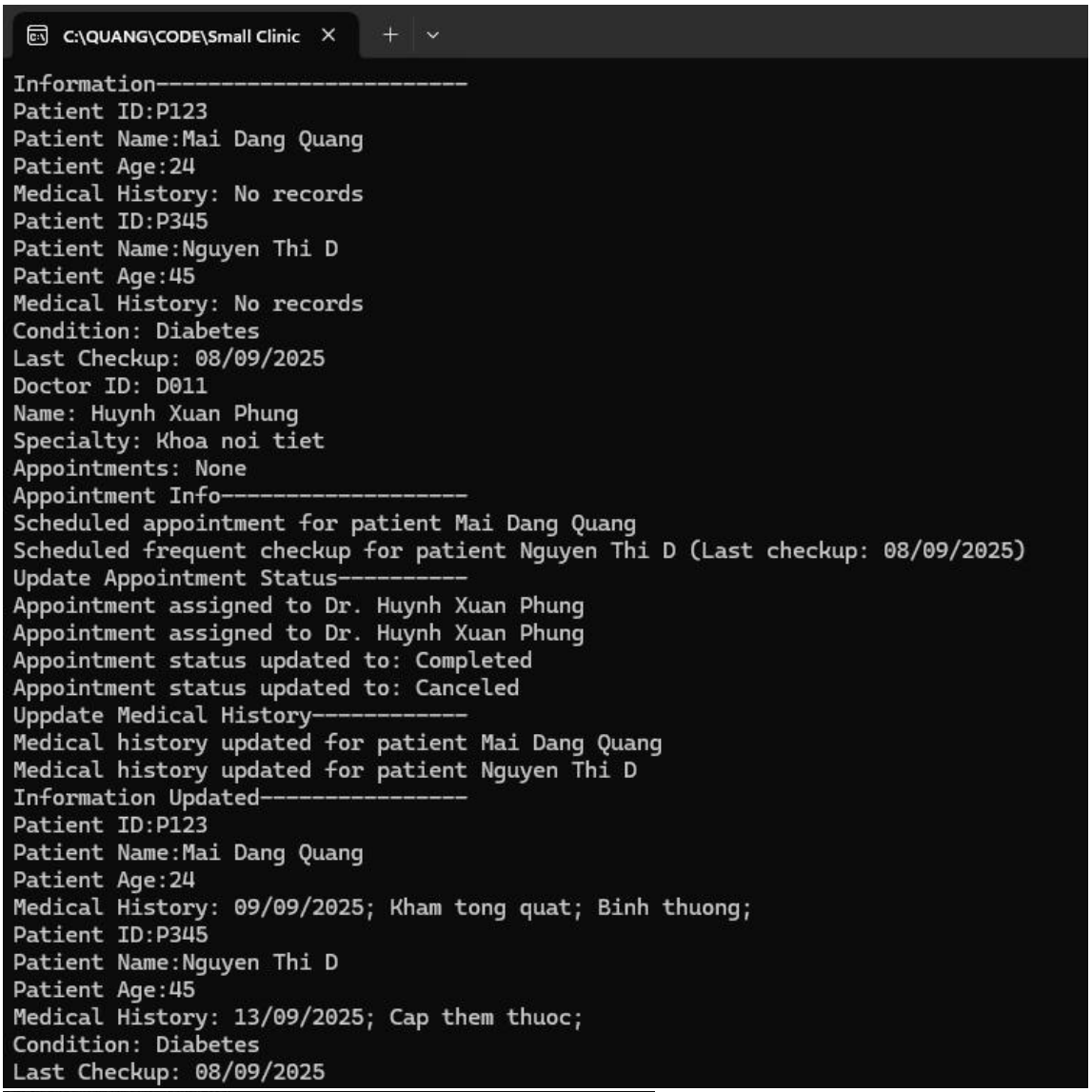
1.3. Methods for each Object:
- Patient: scheduleAppointment, updateMedicalHistory, displayInfo, getID
- ChronicPatient: scheduleAppointment (overridden), displayInfo (overridden)
- Doctor: assignAppointment, updateAppointmentStatus, displayInfo, getID
- Appointment: setStatus, displayDetail, getPatientID, getDoctorID

1.4. Inheritance Relationship:
- ChronicPatient inherits from Patient because chronic patient need special treatment

2. Class Design
- Patient: Base class, method scheduleAppointment have polymorphism.
- ChronicPatient: inherit from Patient, add conditionType and lastCheckupDate atributes, overrides scheduleAppointment method to checkup more frequent.
- Doctor: Manage appointment by asign and update status.
- Appointment: Include detail info and link to patient and doctor’s ID.

3. Code Walkthrough
Create Objects (Patient, ChronicPatient, DOctor, Appointment) to display general information, schedule and assign appointment, update appointment status, add medical history and show updated information.
The code uses vector for list (medicalHistory, appointment); encapsulation (private atributes, public methods); inheritance and polymorphism for ChronicPatient.

4. Test Ressult



5. LLM Usage
In this assignment, I use Grok as an LLM to asisst in brainstorming and fixing bugs

I prompted: “Suggest methods for an Appointment class in a clinic system including method Patient, ChronicPatient and Doctor”. Grok suggest getStatus, and getPatientID/getDoctorID to link,

I prompted: “I had error “SmallClinicManagement.cpp:16:38: error: 'Appointment' has not been declared” when create .exe by using g++ SmallClinicManagement.cpp -o SmallClinicManagement.exe”. Grok suggest move Class Appointment to the top to fix