Team 1: Clinic Database

1) **Addition, Modification, and Deletion:**

In the medical clinic database, we have allowed for the addition, modification, and "deletion" of several entities in the database such as offices, departments, physicians, specialists, inventory, and appointments. These can be done by the *PATIENTS* who create these *APPOINTMENTS*. There are two "types" of appointments that can be created, one to meet a *PHYSICIAN* and the other to meet a *SPECIALIST*, making the "addition" part of the database. In order for a *PATIENT* to create an appointment to see a *SPECIALIST* they must have received approval from a *PHYSICIAN*. A *PATIENT* has to create an *APPOINTMENT* by filling in the provided fields, those being providing the patient's ID, name, date & time of the appointment, the office location that they would like the appointment to be held, the reason for visit, the current date, and whether they are seeing a specialist or a physician. The "modification" that can be made is rescheduling the date and times of the *APPOINTMENTS*. On this page, the user is shown all of their appointments and they can choose which appointment to change. The "deletion" aspect is canceling *APPOINTMENTS*. While deletion does not remove the scheduled appointments from the database, they are no longer displayed on the front-end application. This is done through the "Flagged_Delete " attribute in the *APPOINTMENTS* entity. If "Flagged_Delete" is set to 0, it is made visible to any query in the application. Otherwise, if it is set to 1, it is considered marked for deletion and no longer displayed.

This applies to other methods of addition, modification, and deletion in the database for other entities. Depending on the role of the user, they have access to one or more entities as well as the ability to modify their data, whether through creation or deletion. For example, the CEO has access to creation, modification, and deleting offices, departments, and doctors while specialists and physicians have access to modifying, deleting, and creating medical history and inventory.

2) **Types of user roles:**

Three roles exist in the database: CEO, doctors (physicians and specialists), and patients. The CEO and doctors have access to reports as well as the ability to add, modify, and delete certain entities depending on their role. Patients also have access to data entry forms in the form of appointments.

3) **User Logins and passwords:**
   a) **Logins and passwords for patients:**
      i) **User:** SP7231 **PW:** 1234
      ii) **User:** SH7231 **PW:** 1234
      iii) **User:** ST9212 **PW:** 1234
      iv) **User:** JD1234 **PW:** 1234
   b) **Logins and passwords for doctors:**
      i) **User:** Doctor **PW:** 12345
   c) **Logins and passwords for CEO(admin):**
      i) **User:** BM100 **PW:** admin

   d) **Existing IDs of patients when asked to "input your ID" in patient view:**
      i) **SP7231** (has physician approval to make appt with specialist)
      ii) **SH7231** (has physician approval to make appt with specialist)

iii) **JD1234** (no physician approval to make appt with specialist)
iv) **ST9212** (no physician approval to make appt with specialist)

e) **Existing IDs of physicians, use when asked to input the ID of a physician in doc view:**
   i) **DP1234** (in office 1 and department radiology)
   ii) **RM9840** (in office 2 and department cardiology)
   iii) **TH9203** (in office 3 and department cardiology)
   iv) **VT9876** (in office 3 and no department)

f) **Existing IDs of specialists, use when asked to input the ID of a specialist in doc view:**
   i) **EM0929** (in office 2 and department rehabilitation & is a supervisor)
   ii) **JC4444** (in office 1 and department radiology & is a supervisor)
   iii) **MN8905** (in office 1 and department radiology)
   iv) **OT8390** (in office 2 and department cardiology & is a supervisor)

g) **Existing IDs of the CEO, use when asked to "input your ID" in the CEO view:**
   i) **BM100**

4) **Semantic Constraints as Triggers:**

The semantic constraints that we have taken into consideration were the following:

a) Can't set up an appointment to see a specialist without approval from a physician first
b) Can't cancel an appointment before a certain time(in our case can't cancel an appointment 12 hours prior to said appointment)

If an appointment with a specialist without approval occurs, a pop-up message will appear saying "You can't see a specialist without physician approval," preventing patients from scheduling the appointment until physician approval is obtained. Canceling the appointment 12 hours before the scheduled time will result in the message "You can't cancel an appointment 12 hours prior to the scheduled time."

5) **Types of Queries/Reports Available:**
   a) **CEO(admin) Reports**
      i) **Offices:** Based on the minimum # of departments in offices and the minimum # of specialists associated with said office. This report essentially shows the Office_ID, Office_Address, Number of Departments (found for this office), and the Number of Specialists (found for this office). Office ID and Office Address are found in the Office entity, the number of departments is the summation of departments that belong to that office (we get this info from the Departments entity), and the number of specialists is the summation of specialists who belong to the said office (we get this info from the specialist table). We have also added two more tables so the user can see the specialists and departments that are involved in the report. We also allow the user to create offices and departments as well as modify and delete any existing ones.

ii) **Doctors:** Based on the maximum salary and office they are associated with. This report shows the ID of the physician, the ID of the office they work at, and their salary. The physician ID and the salary come from the physician table and the office ID comes from the office entity. We also allow the user to create a specialist or physician as well as modify or delete existing specialists or physicians.

iii) **Revenue:** Based on the maximum revenue the offices we are looking for should be made. This report shows the office ID, office expenditure (the sum of all the salaries from the physicians), office budget, and revenue difference (office budget - office expenditure). Both office ID and office budget come from the office entity, office expenditures come from the summation of all salaries of the physician table, and we compute the office revenue. This report is influenced by any existing or added physicians and offices.

b) Doctor Queries

i) **Specialist Schedule:** The schedule report is generated by a query that takes in the specialist's employee ID and the minimum date & time of the appointments. The report displays the date & time, patient, office, and department of the specialist's scheduled appointments. This query is influenced by the appointments created by patients with that specialist.

ii) **Medical History**: Doctors have access to their patient's medical history, being able to generate a report by a selected query given a patient's ID as the input. The report shows the patient's ID, name, diagnosis test, the result of the test, and the date the information displayed was last updated. We are also letting the user create or modify existing medical history.

iii) **Inventory**: Doctors have the ability to generate a report regarding inventory given the selected item's name, which is then run through a query, displaying the items in the inventory with the same name as the input. The report also displays the item's count and its associated office. We are also letting the user create an inventory item and modify or delete existing inventory.

c) Patient Queries

i) **Appointments:** In the patient's web page, accessing the "View Appointments" web page calls for a query that pulls the associated appointments of the user and displays them on the application. The data displayed is dependent on the patient ID used as input. The user is also able to create more appointments and modify or delete said appointments as well.

ii) **Medical History**: As with the doctors' web page, patients have access to view their medical history. Additional data is displayed on the patient's web page such as the ID of the physician and specialist involved in the medical history input.