**\*Updated tables and queries**

**Database Project Proposal Phase 1**

This database will be used in a small outpatient clinical setting. The clinic will need to store information about the patients, receptionists, doctors, nurses, and furthermore keep track of inventory, appointments, and medical records. This data is vital to the hospital as it keeps everything organized, structured, and accessible. For example, if a patient needs to view their medical history for any particular reason, they should be able to easily access it. The doctor should also be able to access the same records so he can treat his patients accordingly.

A medical record is a complete record of a patient’s key clinical data and medical history, such as vital signs, demographics, diagnoses, medications, treatment plans, progress notes, problems, immunization dates, allergies, radiology images, and laboratory and test results.

Inventory will cover personal protective equipment and medication, both over the counter supplies and prescriptions. The purpose of keeping track of this material is so that the doctor when prescribing something to their patient can know whether they are able to pick up their medication in their clinic or need to go to another pharmacy. It also allows the patients to be able to order their medication and refills when quantities are available. Personal protective equipment (PPE) such as masks and gloves are vital to running a hospital in current times with the covid-19 virus spreading. The receptionist will be able to keep track of these supplies.

Appointment information will be kept in the database to allow the patients and doctors to keep track of their schedules. They as well as the receptionist will be allowed to create and alter appointments as they need.

Receptionists will use the database to update and access all appointments for patients, keep track of the PPE and the Medication inventories.

Doctors will be able to update and access their patients’ medical records and well as be able to access the pharmacy’s inventory.

Patients will have access to their own medical records, they will be able to create and view their appointments with their doctors. Patients will be admitted to a room where the availability status updates dynamically.

Entity Sets

* Physician
* Dept
* Patients
* Employees
* Receptionist
* Appointments
* Medication
* Medical Records
* Tests
* Nurse
* Room
* Inventory

Operations to be performed to maintain database

-Update Patient complaints

20 queries

1. How many doctors specialize in heart surgery?

2. Display all the appointments scheduled for this month?

3. What medications were prescribed to Nathaniel?

4. Display all the email addresses for doctors at the hospital

5. How many masks do we have in inventory?

6. Display the medical record for all the patients with last names that start with S.

7.Display all the receptionists’ names at the hospital.

8.How many patients have pre existing conditions?

9. How many patients are prescribed Ibuprofen

10. How many patients were born from 2000 to 2009

11. Which doctors are male

12. What is the TestID for the Diagnostic Test

13. What nurse is available in the Pediatrics Department

14. Display the room no. that is currently occupied?

15.What medications are currently available?

16. How many beds are available?

17. How many appointments are delayed for August 2020

18. Display all the physicians dept\_Id’s.

19. What day does Doe last access her Medical Records?

20. Display all employees that are physicians

Sample Data

Dept

|  |  |
| --- | --- |
| department\_id | department\_name |
| 01 | Administration |
| 02 | Cardiology |
| 03 | Primary Care |
| 04 | Pediatrics |
| 05 | Nephrology |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Employees** | | | | | |
| **emp\_Id** | **firstName** | **lastName** | **email\_address** | **Gender** | **Employee\_type** |
| 823-657 | Billy | Joel | apple2@gmail.com | M | Receptionist |
| 763-901 | Jane | Doe | superman@aol.com | F | Physician |
| 618-093 | Jackie | Smith | js12@gmail.com | F | Nurse |
| 654-321 | Jake | Peralta | jake@gmail.com | M | Receptionist |
| 123-456 | Abe | Lincoln | alincoln@vcu.edu | M | Physician |

|  |  |  |
| --- | --- | --- |
| **Nurse** | | |
| **department\_name** | **first\_name** | **last\_name** |
| Pediatrics | Jackie | Smith |

|  |  |  |  |
| --- | --- | --- | --- |
| **Physician** | | | |
| **emp\_id** | **department\_name** | **first\_name** | **last\_name** |
| 763901 | Cardiology | Jane | Doe |
| 123456 | Primary Care | Abe | Lincoln |

|  |  |  |
| --- | --- | --- |
| **Appointments** | | |
| **Dates** | **Appt\_Id** | **Status** |
| 6/01/2020 | 23612 | Completed |
| 7/26/2020 | 26789 | Ongoing |
| 8/1/2020 | 01296 | Delayed |
| 8/13/2020 | 13530 | Unconfirmed |

|  |  |  |
| --- | --- | --- |
| **Receptionist** | | |
| **Appt\_ID** | **last\_name** | **department\_name** |
| 23612 | Joel | Administration |
| 26789 | Peralta | Administration |
| 01296 | Joel | Administration |
| 13530 | Peralta | Administration |

|  |  |  |  |
| --- | --- | --- | --- |
| **Medical Record** | | | |
| **patient\_id** | **Record\_Id** | **Pre\_Existing\_Con** | **Access\_Date** |
| 173293 | 02345 | Diabetes | 5/3/2020 |
| 128312 | 02567 | ADHD | 7/4/2020 |
| 672081 | 02892 | Depression | 7/9/2020 |
| 219903 | 02334 | High Blood Pressure | 8/2/2020 |

|  |  |  |
| --- | --- | --- |
| **Medication** | | |
| **Med\_ID** | **Quantity** | **Prescription** |
| 53 | 100 | Metoprolol |
| 22 | 25 | Ibuprofen |
| 21 | 78 | Hydrocortisone |
| 32 | 0 | Cetirizine |

|  |  |
| --- | --- |
| **Tests** | |
| **test\_ID** | **Test** |
| 20 | EchoCardiogram |
| 21 | CT Scan |
| 22 | Diagnostic Test |
| 30 | Blood count lab test |

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Patients** | | | | | | | | |
| **Patient\_ID** | **patient\_name** | **D\_O\_B** | **Gender** | **Room\_Number** | **complaint** | **emp\_id** | **med\_id** | **tests\_id** |
| 173-293 | Mahir | 6/01/1990 | M | 201 | High Blood Pressure | 763901 | 53 | 20 |
| 128-312 | Tracy | 7/6/1970 | F | 202 | Dizziness | 763901 | 22 | 21 |
| 672-081 | Stephanie | 8/1/2006 | F | 205 | Skin rash | 123456 | 21 | 22 |
| 219-903 | Nathaniel | 8/3/2000 | mMale | 206 | Allergies | 123456 | 32 | 30 |

|  |  |  |  |
| --- | --- | --- | --- |
| **Room** | | | |
| **Room-no** | **Dept\_name** | **num\_beds** | **status** |
| 201 | Cardiology | 2 | available |
| 202 | Primary Care | 1 | occupied |
| 205 | Pediatrics | 1 | occupied |
| 206 | Primary Care | 1 | Available |

|  |  |
| --- | --- |
| **Inventory (Personal Protective Equipment)** | |
| **masks** | **Gloves (pairs)** |
| 53 | 23 |

E-R Diagram

**-Patients Schedule Appointments which are managed by Receptionist**

**-Receptionists can access room numbers**

**-Physicians and nurses are able to access all appointments**

**-Patients are able to access only their Appointment, medical record**

**-Receptionist, physician and nurse belong to Employees**

**-Physicians and nurse are able to update inventory**

**-Physicians consult patients and are able to prescribes medication and test**

**-Medical records store data from medication and test**