***Prone to changes as needed--with new ideas and implementation**

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
- Patients
- Employees
- Receptionist
- Appointments
- Medication
- Medical Records
- Tests
- Nurse
- Room
- Inventory

Operations to be performed to maintain database

-Update Inventory, Medication Quantity, Expiration Dates, Appointments
-Enter new EMP_ID for new employees;
-Update Access Dates for medical record for each view;
-Save dates for appointments made by patient, delete accordingly if appointment missed;
-Enter Room availability after each appointment

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 Jane?
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 Adderall?
10. How many patients are above the age of 18?
11. Which doctors are above the age of 50?
12. What is the TestID for the Diagnostic Test
13. What nurse is available in the Cardiology Department;
14. Display the room no. that is currently occupied?
15. What medications are not currently available.
16. How many beds are available.
17. What Department was patient A admitted to?
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

Employees						
emp_Id	**firstName**	**lastName**	**email_address**	**Gender**	**DOB**	**Employee_type**
823-657	Billy	Joel	apple2@gmail.com	male	5/01/1990	Receptionist
763-901	Jane	Doe	superman@aol.com	female	7/26/1970	Physician
618-093	John	Smith	js12@gmail.com	female	8/1/1962	Nurse
123-456	Abe	Lincoln	alincoln@vcu.edu	male	8/13/1992	

Nurse
dept_Id
Cardiology
Neurology
PrimaryCare
Pediatrics

Physician
dept_Id
Cardiology
Neurology
PrimaryCare
Pediatrics

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
23612
26789
01296
13530

Medical Record		
Record_Id	**Pre_Existing_Con**	**Access_Date**
02345	Diabetes	5/3/2020
02567	ADHD	7/24/2020
02892	Depression	7/29/2020
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	**D_O_B**	**Gender**	**Room_Number**	**complaint**	**PCP_ID**
173-293	6/01/1990	male	201	High Blood Pressure	10-212
128-312	7/26/1970	female	202	Dizziness	53-321
672-081	8/1/2006	female	205	Skin rash	69-420
219-903	8/13/2000	male	206	Allergies	32-210

Room			
Room-no	**Dept_name**	**num_beds**	**status**
201	Cardiology	2	available
202	Neurology	1	occupied
205	Primary Care	1	occupied
206	Pediatrics	1	occupied

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

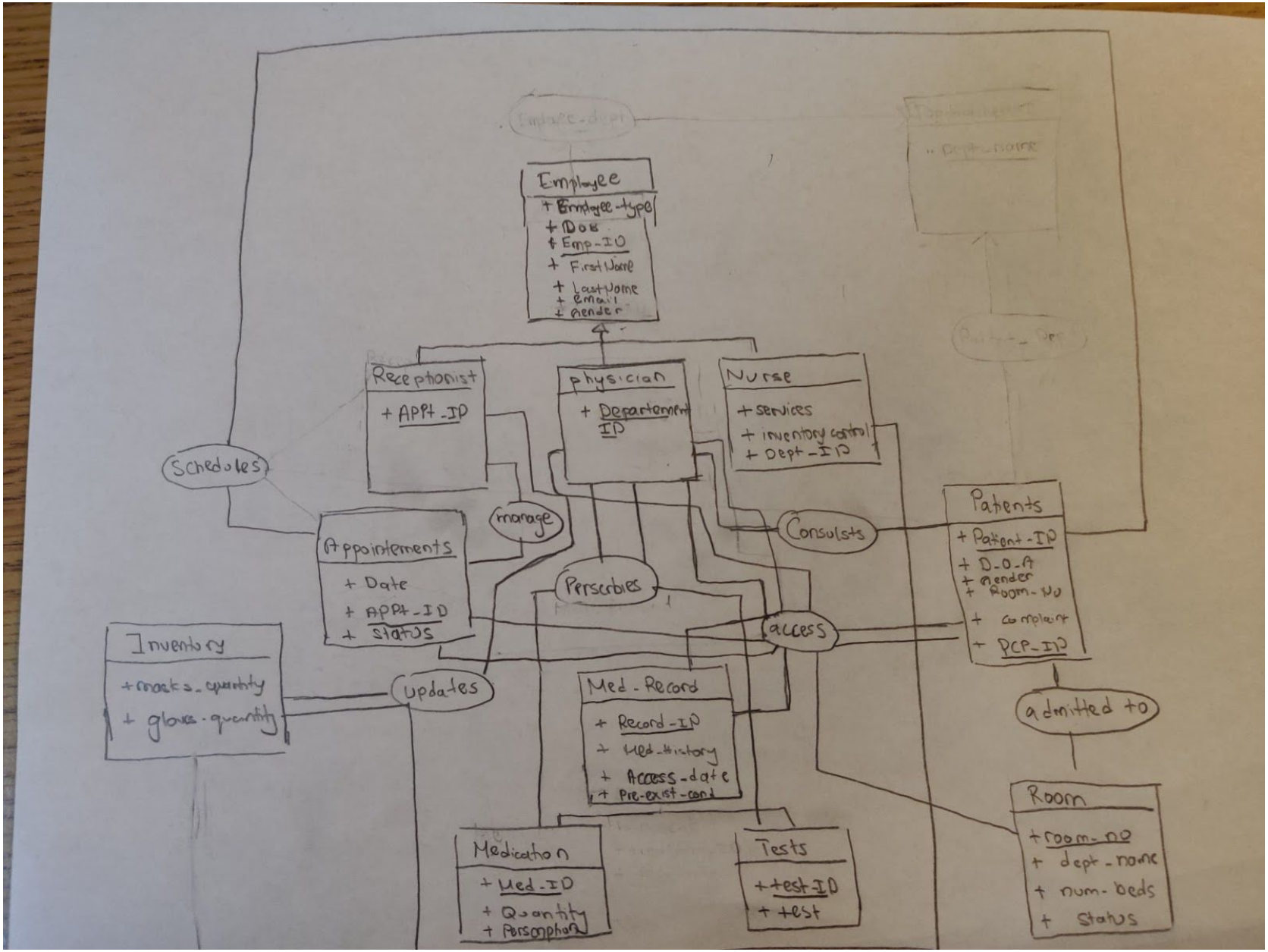
-Patients are able to access only their Appointment, medical record

-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


Employee
+ Employee-type
+ DOB
+ Emp-ID
+ FirstName
+ LastName
+ email
+ gender
Receptionist
+ Appt-ID
physician
+ Department ID
Nurse
+ services
+ inventory control
+ Dept-ID
Schedules
manage
Consults
Patients
+ Patient-ID
+ D-O-A
+ gender
+ Room-No
+ complaint
+ PCP-ID
Appointements
+ Date
+ Appt-ID
+ status
Prescribes
access
Inventory
+ mask-quantity
+ gloves-quantity
updates
Med-Record
+ Record-ID
+ Med-History
+ Access-date
+ Pre-exist-cond
admitted to
Room
+ room-no
+ dept-name
+ num-beds
+ status
Medication
+ Med-ID
+ Quantity
+ Perscription
Tests
+ test ID
+ test