Fundamentals of Databases
CS-213
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Lab Project

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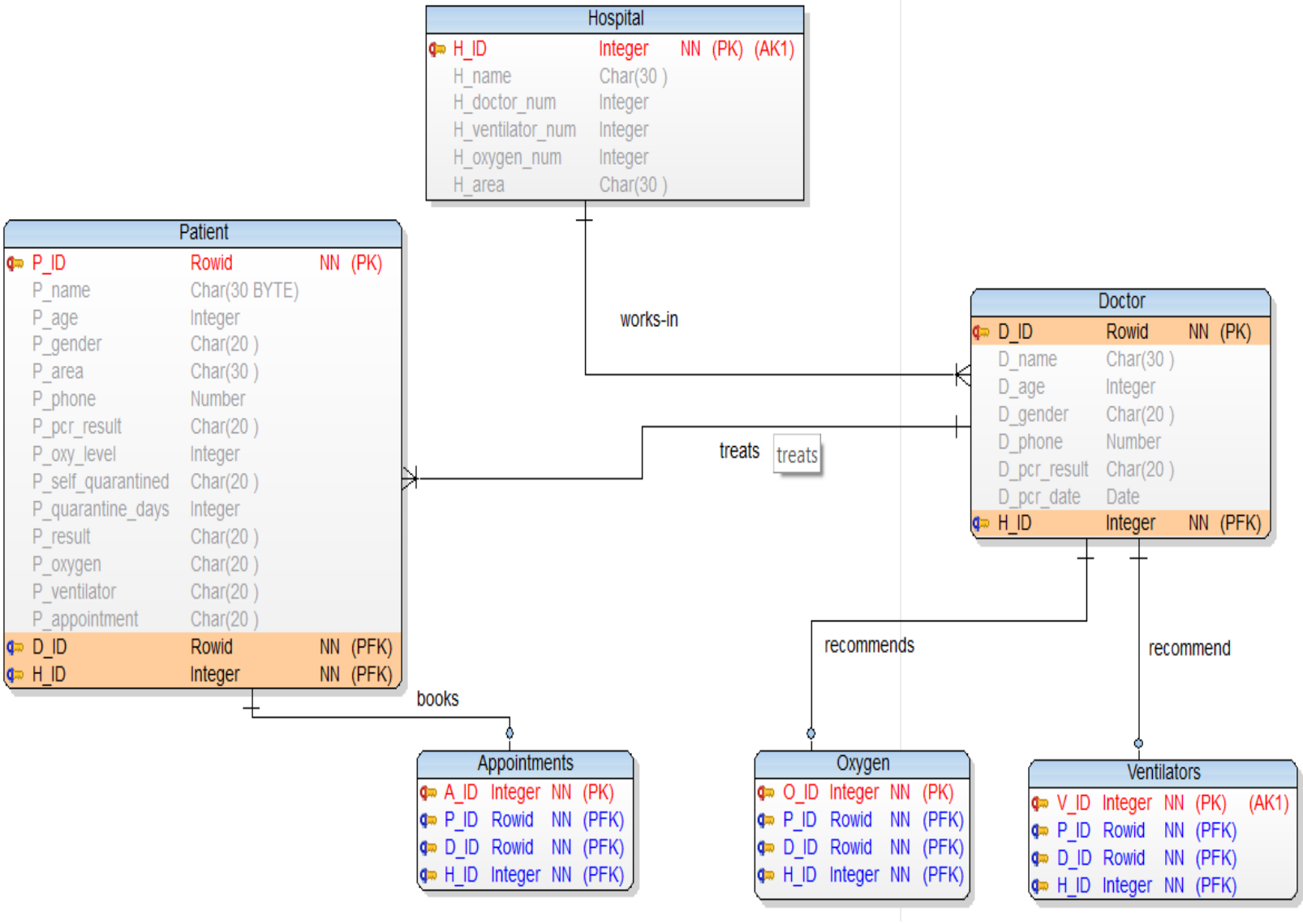
Relational Schema



Description

There are 6 tables created for the project namely Hospital, Doctor, Patient, Appointments, Oxygen, Ventilators. Hospital table create H_ID as Primary Key. It contains name, area, number of ventilators available, number of oxygen available and number of doctors. Doctor table is a child. There can be one or more than one doctors in hospital but a doctor cannot be in more than one hospital.

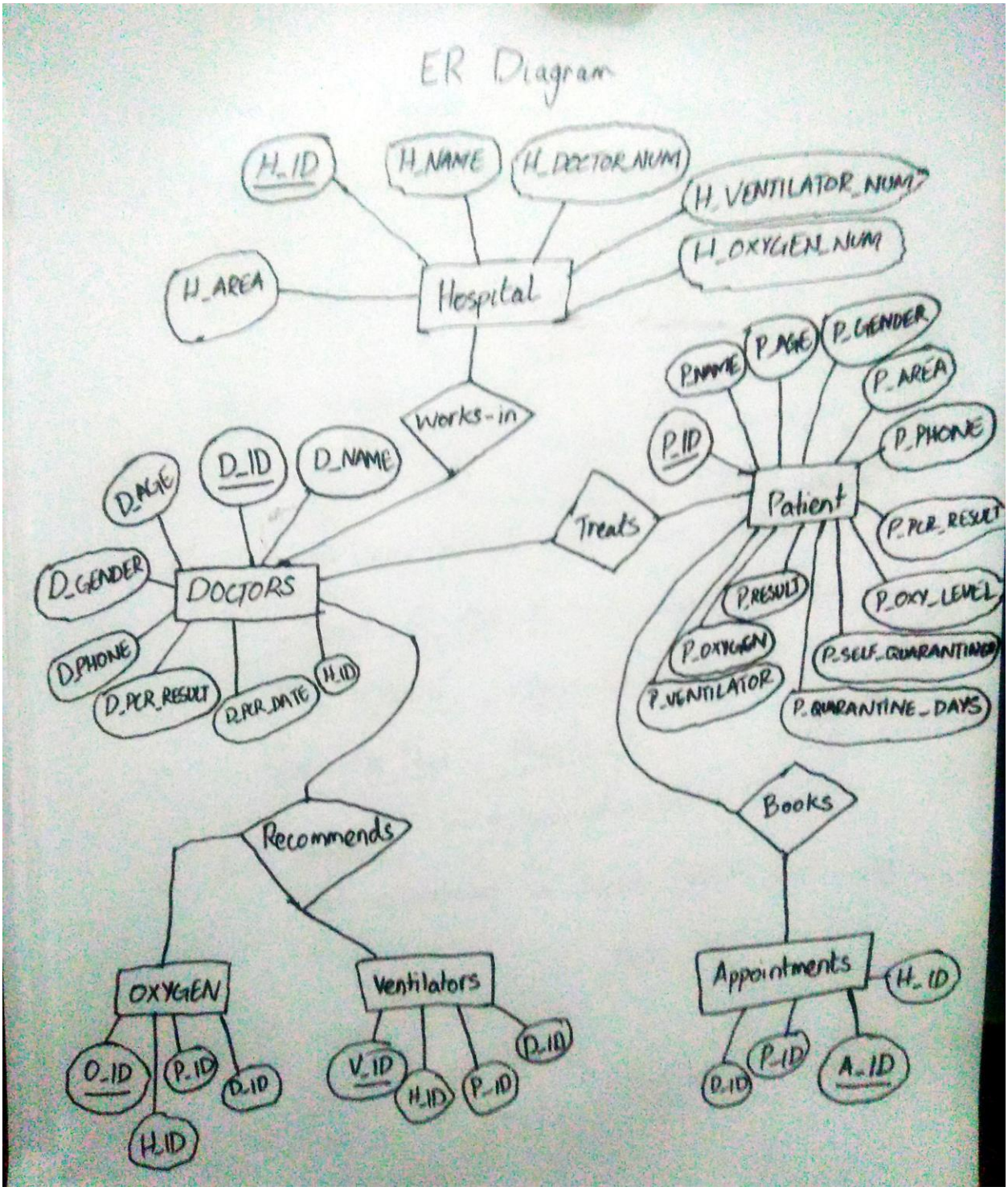
Doctor Table has D_ID as Primary key. It also contains all necessary information for the doctor. Patient Table is child of doctor table. A doctor can have many patients but a patient can only be assigned one doctor.

Appointments table has A_ID as Primary key. It inherits from Patient table. Patient can only have zero or one appointment at the time.

Oxygen Table has O_ID as primary key. This table stores the recommendation of the doctor for oxygen for a specific patient.

Ventilators table has V_ID as Primary Key. This table also stores the recommendation of doctor for ventilator for a specific patient.

ER Diagram


ER Diagram
H_ID
H_NAME
H_DOCTOR_NUM
H_VENTILATOR_NUM
H_OXYGEN_NUM
H_AREA
Hospital
Works-in
D_AGE
D_ID
D_NAME
D_GENDER
DOCTORS
D_PHONE
D_PCR_RESULT
D_PCR_DATE
H_ID
Treats
P_NAME
P_AGE
P_GENDER
P_AREA
P_ID
P_PHONE
Patient
P_PCR_RESULT
P_RESULT
P_OXY_LEVEL
P_OXYGEN
P_SELF_QUARANTINED
P_VENTILATOR
P_QUARANTINE_DAYS
Books
Recommends
OXYGEN
O_ID
P_ID
D_ID
H_ID
Ventilators
V_ID
H_ID
P_ID
D_ID
Appointments
H_ID
D_ID
P_ID
A_ID

Patient Portal Queries

Dashboard

select * from system.patient where P_name='".$db_user."'

This query used to get the information of the logged patient.

Name : jalal
Age : 28
Gender : Male
Area : G-11
Phone number : 3037580
PCR Result : positive
Oxygen Saturation Level : 75
Self Quarantined? : no
Quarantined Days : 11
Result : active

Appointment

select * from system.hospital

get the names of all hospitals to show on the list

select * from system.doctor

get names of all doctors to show in list

select d_id from system.doctor where d_name= '".$doctor."'

Getting the D_ID of doctor selected based on the name of doctor

select count(*) from system.appointments where p_id= ".$patient_ID

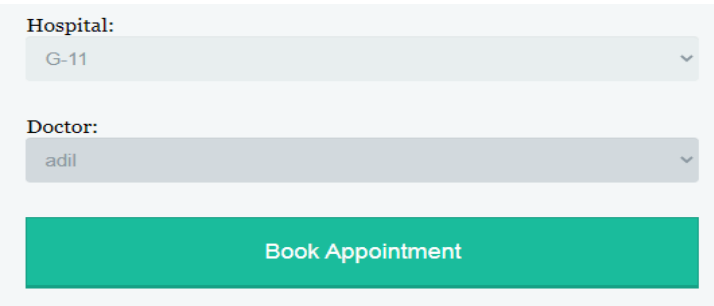
for checking if the patient has previously booked appointments.

select d_id from system.appointments where p_id= ".$patient_ID

getting the Doctor ID of the doctor which already has previous appointment with patient,

insert into system.appointments(A_ID,P_ID,D_ID,H_ID)
values(".rand().",".$patient_ID.",".$doctor_ID.",".$hospital_ID.")

inserting the appointment booking into the appointments table which stores Appointment ID, Patient ID, Doctor ID and Hospital ID.



Doctors Portal Queries

Dashboard

select * from system.doctor where D_name='".$db_user."'

This query used to get the information of the logged Doctor.

Patients

select * from system.patient where D_ID=".$doctor_ID

get list of all patients under treatment from the logged doctor.

select * from system.oxygen where P_ID=".$row['P_ID']

to check if there is already recommendation for oxygen sent by the doctor.

select * from system.ventilators where P_ID=".$row['P_ID']

to check if there is already recommendation for ventilator sent by the doctor.

select P_ID from system.patient where P_ID=".$row['P_ID']." and p_oxygen='yes'

to check if the patient is already assigned the oxygen

select P_ID from system.patient where P_ID=".$row['P_ID']." and p_ventilator='yes'

to check if the patient is already assigned a ventilator.

insert into system.ventilators (V_ID,P_ID,D_ID,H_ID) values (".rand().",".$P_ID.",".$D_ID.",".$H_ID.")

to insert the ventilator recommendation into the table ventilators.

insert into system.oxygen (O_ID,P_ID,D_ID,H_ID) values (".rand().",".$P_ID.",".$D_ID.",".$H_ID.")

to insert the oxygen recommendation into the table oxygen

P_ID	Name	Oxygen Level	Recommendation
3331	tahir	91	
3332	taj	72	oxygen
3333	tariq	50	ventilator

P_ID	Name	Oxygen Level	Recommendation
3331	tahir	91	
3332	taj	72	Oxygen Recommendation sent.
3333	tariq	50	Ventilator Recommendation sent.

P_ID	Name	Oxygen Level	Recommendation
3331	tahir	91	
3332	taj	72	Oxygen Assigned
3333	tariq	50	Ventilator Assigned

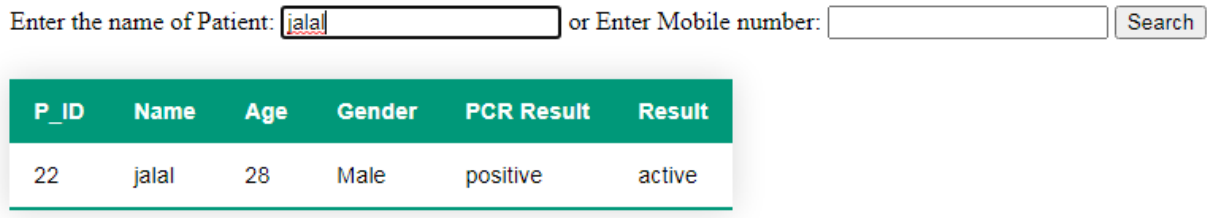
Search

select * from system.patient where P_name='".$_POST['name-search']."'

Searching by name of patient

select * from system.patient where P_phone=".$_POST['phone-search']

Searching by Phone number



P_ID	Name	Age	Gender	PCR Result	Result
22	jalal	28	Male	positive	active

Displaying All Patients

Select * from system.patient

Gets the list of all patients in table patient.

Adding Patient

insert into system.patient (P_ID,D_ID,H_ID,P_name,P_age,P_gender,P_area,P_phone, P_pcr_result,P_oxy_level,P_self_quarantined,P_quarantine_days,P_result,P_oxygen,P_ventilator)values(".$_POST['P_ID']."," .$_POST['doc-id']."," .$_POST['hosid']."," '".$_POST['P_name']."'," .$_POST['P_age']."," '".$_POST['P_gender']."'," '".$_POST['P_area']."'," .$_POST['P_phone']."," '".$_POST['P_pcr_result']."'," .$_POST['P_oxy_level']."," '".$_POST['P_self_quarantined']."'," .$_POST['P_quarantine_days']."," '".$_POST['P_result']."'," '".$_POST['P_oxygen']."'," '".$_POST['P_ventilator']."')

Inserting Patients from info collected in a form.

Admin Portal Queries

Dashboard

Select * from system.patient

List all the patients in database.

P_ID	Name	Age	Gender	Area	Phone	PCR Result	Oxygen Level	Self Quarantined?	Quarantined Days	Result
13	farah	19	Female	G-11	3037577	positive	98%	yes	3	active
14	imran	22	Male	G-11	3037578	positive	87%	no	2	active

Select * from system.doctor

List all Doctors

D_ID	Name	Age	Gender	Phone	PCR Result	Last PCR Date	Hospital ID
3	ratched	43	Female	33000033	negative	20-DEC-20	1
11	abbas	27	Male	4537347	negative	21-DEC-20	2

Select * from system.appointments

Lists all appointments booked by patients.

Appointments

Appointment ID	Patient Name	Doctor Name	Hospital Name
27868	imran	strange	G-11

Add Doctors

insert into system.doctor (D_ID,H_ID,D_name,D_age,D_gender,D_phone, D_pcr_result,D_pcr_date)values(".$d_id.",". $h_id.",'".$d_name."',". $d_age.",'".d_gender."',". $d_phone.",'".$d_pcr_result. "',to_date('".$d_pcr_date."','yyyy-mm-dd'))

Adding new doctors using info filled in a form.

Resources

update system.hospital set h_".$_POST['resource-sel']."_num=".$new_num." where h_id=".$_POST['row-id']

Adding and updating the record of the hospital. This statement adds oxygen or ventilators into hospital resources.

Patients

Patient Mangament

select * from system.ventilators

select * from system.oxygen

lists all recommendations of doctors for ventilators and oxygen.

update system.patient set p_oxygen='yes' where p_id=".$P_ID;

delete from system.oxygen where p_id=".$P_ID

update system.hospital set h_oxygen_num=".$oxy_num." h_id=".$H_ID

These statements assign the oxygen to the patient, delete the entry from recommendation table for oxygen and update the number of oxygen in the hospital by decrementing.

update system.patient set p_ventilator='yes' where p_id=".$P_ID;

delete from system.ventilators where p_id=".$P_ID

update system.hospital set h_ventilator_num=".$vent_num." h_id=".$H_ID

These statements assign the oxygen to the patient, delete the entry from recommendation table for oxygen and update the number of oxygen in the hospital by decrementing.

Reports

Statistics

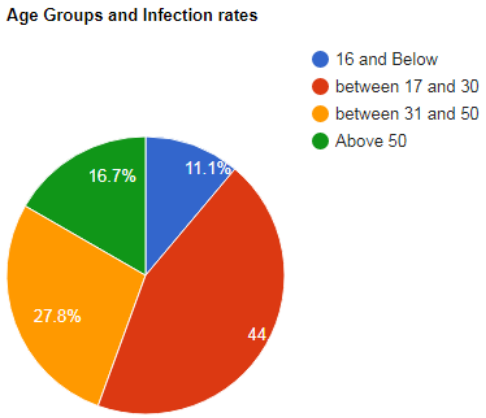
select count(*) as num_people from system.patient where p_age<=16 and p_pcr_result='positive'

select count(*) as num_people from system.patient where p_age>16 and p_age<=30 and p_pcr_result='positive'

select count(*) as num_people from system.patient where p_age>30 and p_age<=50 and p_pcr_result='positive'

select count(*) as num_people from system.patient where p_age>50 and p_pcr_result='positive'

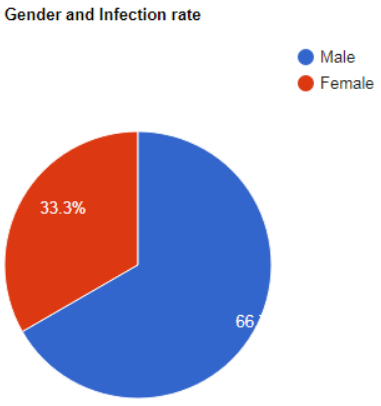
This gets the number of people in age groups of 16 and below, between 17 and 30,between 31 and 50, above 50 who were infected.



select count(*) as num_people from system.patient where p_gender='Male'

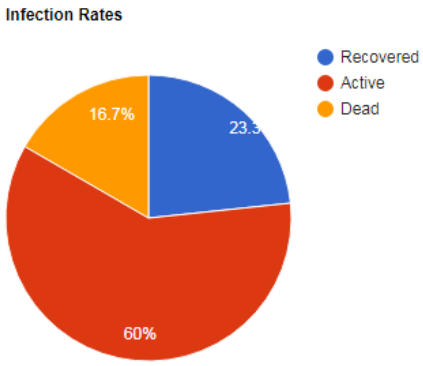
select count(*) as num_people from system.patient where p_gender='Female'

This gets the number of females and males infected.



select p_result,count(*) as mycount from system.patient group by p_result

getting the number of recovered, dead and active patients.



Hotspots and Lockdowns

select p_area,count(*) as mycount from system.patient where P_PCR_RESULT='positive' group by p_area

get the number of people infected in the area.