Lab_10

202003018

202003019

Views

- Patient Prescription (Total)

Create View patient_prescription As

Select * from prescription where patient_id = X

Create View patient_prescription As

Select * from prescription where patient_id = 926722993945

Data Output | Explain | Messages | Notifications

	patient_id numeric (12)	doctor_id numeric (12)	medicine_id integer	from_date date	to_date date	morning_dose character varying (10)	noon_dose character varying (10)	night_dose character varying (10)
1	926722993945	131407887378	5	2020-12-04	2020-12-22	7	6	3
2	926722993945	986786537816	4	2020-12-04	2020-12-10	0	9	7
3	926722993945	540258634201	8	2020-12-10	2020-12-20	7	3	0
4	926722993945	131407887378	6	2020-12-04	2020-12-12	7	2	6

- Prescription from a particular Doctor to a Patient

Create View patient_doctor_prescription As

Select * from prescription where patient_id = X and doctor_id = Y

Create View patient_doctor_prescription As

Select * from prescription where patient_id = 107998063737 and doctor_id = 596818320348

Data Output | Explain | Messages | Notifications

	patient_id numeric (12)	doctor_id numeric (12)	medicine_id integer	from_date date	to_date date	morning_dose character varying (10)	noon_dose character varying (10)	night_dose character varying (10)
1	107998063737	596818320348	8	2020-09-05	2020-09-25	7	2	3

- Available medicines(cost_per_unit,medicine name, amount in unit, company name, amount available)

Create View available_meidcines As

Select * from medicines

Data Output | Explain | Messages | Notifications

	medicine_id integer	medicine_name character varying (40)	cost_per_unit numeric (8,2)	amount_in_unit smallint	amount_available integer	company_name character varying (40)
1	1	Lithium Carbonate	185.00	10	56	Krajcik Inc
2	2	Staples Instant Hand Sanitizer	715.00	20	65	Osinski Group
3	3	Hand Cleanser	236.00	20	43	Heller Group
4	4	Dexilant	275.00	5	100	Bins-Jacobi
5	5	Naproxen	460.00	10	49	Leuschke and Sons
6	6	MICRELL Sp	200.00	12	25	Aufderhar Inc
7	7	Less Relief	590.00	10	67	Lehner-Thompson
8	8	Levofloxacin	920.00	5	49	Hayes LLC
9	9	hyoscyamine sulfate	975.00	5	87	Kreiger-Greenholt
10	10	METFORMIN HYDROCHLORIDE	200.00	10	50	Hauck, Lowe and Steuber

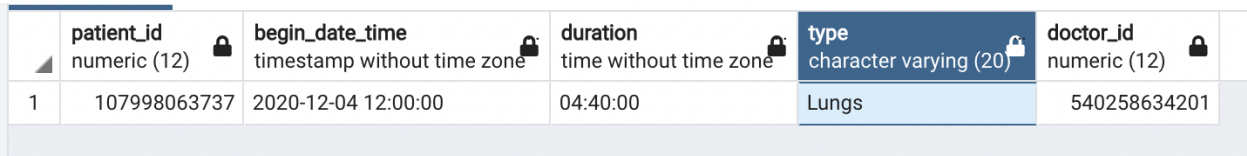
- operations done by a particular doctor

Create View operation_doctor As

Select * from operation where doctor_id = X

Create View operation_doctor As

Select * from operation where doctor_id = 540258634201



	patient_id numeric (12)	begin_date_time timestamp without time zone	duration time without time zone	type character varying (20)	doctor_id numeric (12)
1	107998063737	2020-12-04 12:00:00	04:40:00	Lungs	540258634201

- Operation of a patient = X

Create View operation_patient As
Select * from operation where patient_id = X

Create View operation_patient As
Select * from operation where patient_id = 713964268158

Data Output | Explain | Messages | Notifications

	patient_id numeric (12)	begin_date_time timestamp without time zone	duration time without time zone	type character varying (20)	doctor_id numeric (12)
1	713964268158	2021-04-07 09:00:00	05:24:00	Cancer	657596761672
2	713964268158	2021-04-07 09:00:00	05:24:00	Cancer	131407887378
3	713964268158	2021-04-07 09:00:00	05:24:00	Cancer	220195004338

Queries

- Given a doctor id = X, one can obtain the data of patients which have been operated by him/her in an operation.

$\pi_{\text{aadhar\_id, fname, mname, lname, dob, gender, blood\_group}} (\sigma_{\text{doctor\_id = X}} (\text{operation} \bowtie_{\text{<operation.patient\_id=patient\_details.aadhar\_id>}} \text{patient\_details}))$

select aadhar_id, fname,mname,lname, dob, gender, blood_group from operation join patient_details on operation.patient_id = patient_details.aadhar_id where doctor_id = X

select aadhar_id, fname,mname,lname, dob, gender, blood_group from operation join patient_details on operation.patient_id = patient_details.aadhar_id where doctor_id = '220195004338'

Data Output | Explain | Messages | Notifications

	aadhar_id [PK] numeric (12)	fname character varying (20)	mname character varying (20)	lname character varying (20)	dob date	gender character (1)	blood_group character varying (3)
1	713964268158	Shelli	Basilio	Febvre	1976-10...	M	AB+
2	107998063737	Konstantine	Derron	Spadoni	1950-10...	F	O+

- One can get list of patients with similar disease = ‘X’.

$\pi_{\text{patient\_id}} (\sigma_{\text{upper(disease) = 'X'}} (\text{patient\_disease}))$

select patient_id from patient_disease where upper(disease) = ‘X’

select patient_id from patient_disease where upper(disease) = 'DENGUE'

	patient_id numeric (12)
1	923692306899
2	578283562069

- One can know in how much amount a medicine with medicine id = X is available in the hospital.

$\pi_{\text{medicine\_id,amount\_in\_unit,amount\_available}} (\sigma_{\text{medicine\_id=X}} (\text{medicines}))$

select medicine_id, amount_in_unit, amount_available from medicines where medicine_id = X;

select medicine_id, amount_in_unit, amount_available from medicines where medicine_id = 4;

Data Output | Explain | Messages | Notifications

	medicine_id [PK] integer	amount_in_unit smallint	amount_available integer
1	4	5	100

- Prescriptions mentioned by the doctor id = X to the patien tid = Y will be saved and will be accessible to patients and nurses.

$\sigma_{\text{doctor\_id =X and patient\_id = Y}} (\text{prescription})$

select * from prescription where doctor_id = X and patient_id = Y

select * from prescription where doctor_id = 131407887378 and patient_id = 926722993945

Data Output | Explain | Messages | Notifications

	patient_id [PK] numeric (12)	doctor_id [PK] numeric (12)	medicine_id [PK] integer	from_date [PK] date	to_date date	morning_dose character varying (10)	noon_dose character varying (10)	night_dose character varying (10)
1	926722993945	131407887378	5	2020-12-04	2020-12-22	7	6	3
2	926722993945	131407887378	6	2020-12-04	2020-12-12	7	2	6

- Given a doctor id = X one can obtain all the details of that doctor.

$\sigma_{doctor\_id = X}$ (doctor)

select * from doctor where aadhar_id = X

select * from doctor where aadhar_id = 131407887378

Data Output | Explain | Messages | Notifications

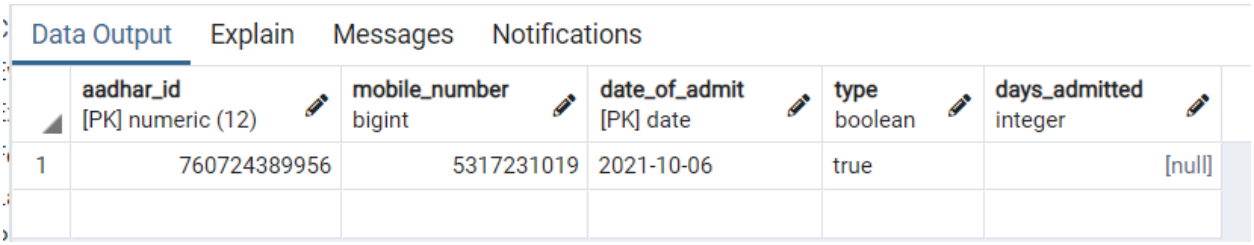
	aadhar_id [PK] numeric (12)	fname character varying (20)	mname character varying (20)	lname character varying (20)	speciality character varying (30)	office_number integer	dob date	gender character (1)	status boolean	mobile_number bigint
1	131407887378	Darryl	Carlota	Riccardelli	General	996310	1975-10...	M	false	2045737006

- Given a patient id = X one can find if he is currently admitted or not. (To check by running on the data)

$\sigma_{aadhar\_id = X \text{ and } days\_admitted \text{ is Null}}$ (patient_records)

Select * from patient_records where aadhar_id = X and days_admitted IS NULL

Select * from patient_records where aadhar_id = 760724389956 and days_admitted IS NULL



Data Output | Explain | Messages | Notifications

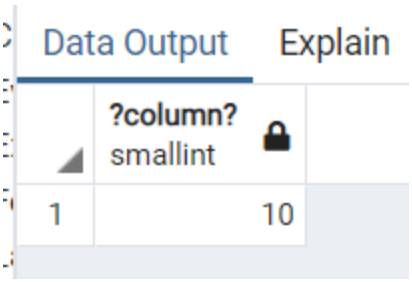
	aadhar_id [PK] numeric (12)	mobile_number bigint	date_of_admit [PK] date	type boolean	days_admitted integer
1	760724389956	5317231019	2021-10-06	true	[null]

- One can find number of empty beds for a given room_no = X.

$\pi_{number\_of\_beds - number\_of\_beds\_occupied}(\sigma_{room\_no = X}(room))$

Select number_of_beds – number_of_beds_occupied from room where room_no = X

Select number_of_beds - number_of_beds_occupied from room where room_no = 1

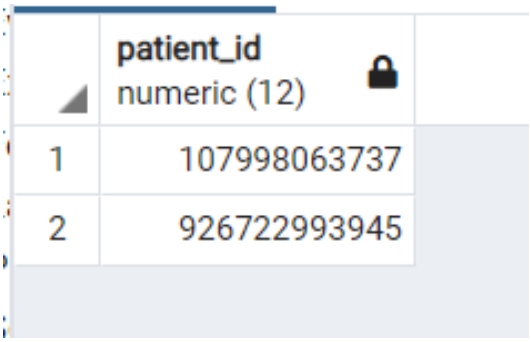


- One can find patients who are given a particular medicine.

$\pi_{patient\_id}(\sigma_{medicine\_id = X}(prescription))$

Select patient_id from prescription where medicine_id = X

Select patient_id from prescription where medicine_id = 6

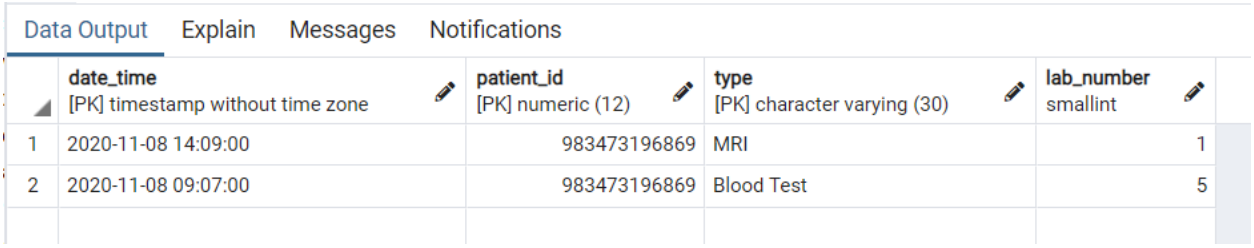


- By the patient ID, one can get the details of his/her lab tests.

$\sigma_{patient\_id = X}(lab\_reports)$

select * from lab_reports where patient_id = X

select * from lab_reports where patient_id = 983473196869



Data Output | Explain | Messages | Notifications

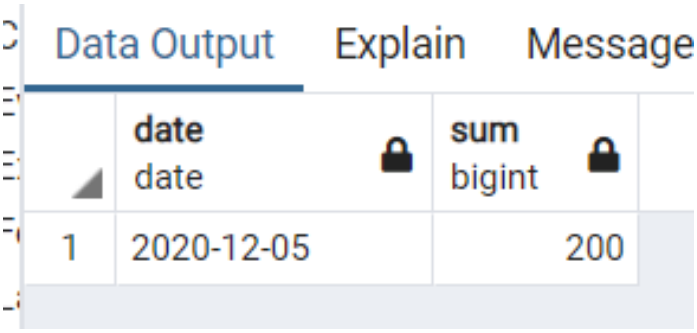
	date_time [PK] timestamp without time zone	patient_id [PK] numeric (12)	type [PK] character varying (30)	lab_number smallint
1	2020-11-08 14:09:00	983473196869	MRI	1
2	2020-11-08 09:07:00	983473196869	Blood Test	5

- Using patient ID = X, one can find amount of blood transfused for a given date = Y.

$_{\text{Date}}\mathcal{F}_{\text{date,Sum(amount\_ml)}}(\sigma_{\text{patient\_id = X and date = Y}}(\text{ blood\_transfusion }))$

select date, Sum(amount_ml) from blood_transfusion where patient_id = X and date = Y Group by date

select date, Sum(amount_ml) from blood_transfusion where patient_id = 926722993945 and date = '05/12/2020' Group by date



Data Output | Explain | Message

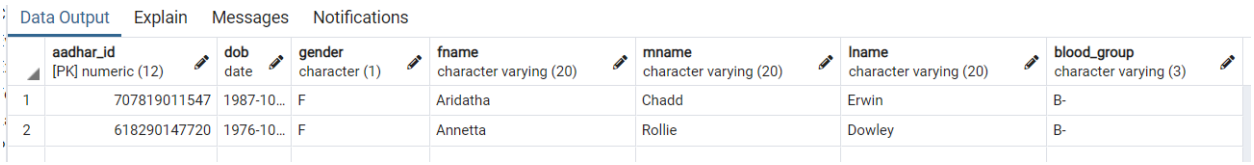
	date date	sum bigint
1	2020-12-05	200

- One can obtain patients with same blood group.

$\sigma_{blood\_group = X}$ (patient_details)

select * from patient_details where blood_group = X

select * from patient_details where blood_group = 'B-'



Data Output | Explain | Messages | Notifications

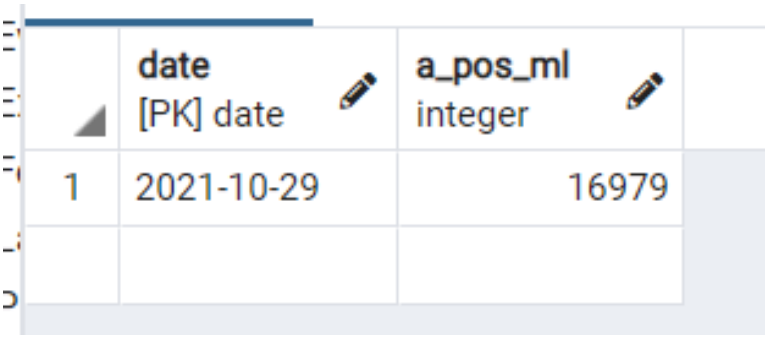
	aadhar_id [PK] numeric (12)	dob date	gender character (1)	fname character varying (20)	mname character varying (20)	lname character varying (20)	blood_group character varying (3)
1	707819011547	1987-10...	F	Aridatha	Chadd	Erwin	B-
2	618290147720	1976-10...	F	Annetta	Rollie	Dowley	B-

- One can find amount of blood (blood group = X) currently available in blood bank.

$\pi_{date,X}$ ($\sigma_{date = (cast\ GETDATE()\ as\ Date)}$ (blood_bank))

select date, X from blood_bank where date = current_date

select date, a_pos_ml from blood_bank where date = current_date



	date [PK] date	a_pos_ml integer
1	2021-10-29	16979

- We can get patient details who are admitted in a particular room.

patient_details SEMI-INTERSECTION$_{<aadhar_id = patient_id>}$(σ $_{room\_no = X}$ (admitted_patients_ids))

select * from patient_details where aadhar_id in (select patient_id from admitted_patients_ids where room_no = X)

select * from patient_details where aadhar_id in (select patient_id from admitted_patients_ids where room_no = 1)

Data Output | Explain | Messages | Notifications

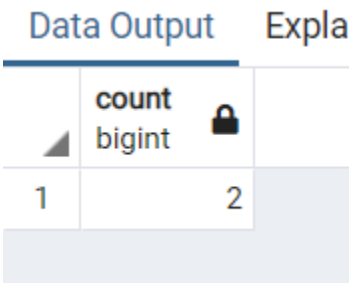
	aadhar_id [PK] numeric (12)	dob date	gender character (1)	fname character varying (20)	mname character varying (20)	lname character varying (20)	blood_group character varying (3)
1	926722993945	1981-10...	M	Jakob	Erek	Downes	A+

- We can find number of patients which are currently admitted in the hospital.

$\mathcal{F}_{\text{Count(*)}}(\sigma_{\text{days\_admitted IS NULL}}(\text{patient\_records}))$

select count(*) from patient_records where days_admitted is NULL

select count(*) from patient_records where days_admitted is NULL

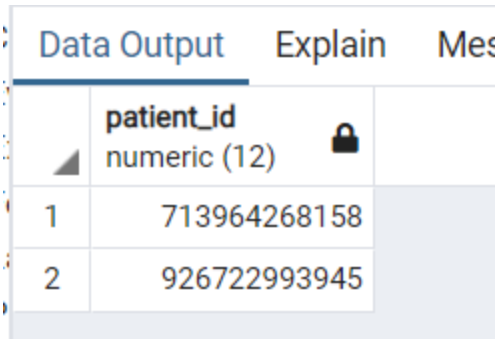


- We can get details of all the patient who have done lab tests from a particular lab

$\pi_{\text{patient\_id}}(\sigma_{\text{lab\_no = X}}(\text{lab\_reports}))$

Select patient_id from lab_reports where lab_number= X

Select patient_id from lab_reports where lab_number = 51



- We can find details of all the lab tests of a specific date.

$\sigma_{date = X}$ (lab_reports)

Select * from lab_reports where cast(date_time as DATE) = X

Select * from lab_reports where cast(date_time as DATE) = '04/12/2020'

	date_time [PK] timestamp without time zone	patient_id [PK] numeric (12)	type [PK] character varying (30)	lab_number smallint
1	Fri 04 Dec 10:30:00 2020	926722993945	Blood Test	20
2	Fri 04 Dec 10:00:00 2020	926722993945	Urine Test	51

- We get details of doctors which were present in every operation of a patient id = X.

- We can get the total amount of bills which are unpaid for a particular patient.

$_{\text{patient\_id}}\mathcal{F}_{\text{patient\_id, (Sum(medicine\_charges) + Sum(operation\_charges) + Sum(blood\_t\_charges) + Sum(lab\_charges)) } \rightarrow \text{total)}} (\sigma_{\text{ patient\_id = X and status = false}}(\text{ bill }))$

Select patient_id,Sum(medicine_charges) + Sum(operation_charges) + Sum(blood_t_charges) + Sum(lab_charges) + Sum(service_charges) as Total From bill where patient_id = X and status = false group by patient_id

Select patient_id,Sum(medicine_charges) + Sum(operation_charges) + Sum(blood_t_charges) + Sum(lab_charges) + Sum(service_charges) as Total from bill where patient_id = 618290147720 and status = false group by patient_id

Data Output | Explain | Messages | N

	patient_id numeric (12)	total numeric
1	618290147720	34343.00

- We can get the details of the bills which are unpaid.

$\sigma_{\text{ status = false}}(\text{ bill })$

select * from bill where status = false

select * from bill where status = false

	patient_id [PK] numeric (12)	date_time [PK] timestamp without time zone	status boolean	medicine_charges numeric (10,2)	blood_t_charges numeric (10,2)	operation_charges numeric (10,2)	lab_charges numeric (10,2)	service_charges numeric (10,2)
1	760724389956	Sun 17 Oct 11:15:00 2021	false	2340.00	9784.00	0.00	800.00	9000.00
2	618290147720	Wed 20 Oct 20:30:00 2021	false	8504.00	1839.00	0.00	0.00	3000.00

- We can get the patients whose unpaid amount of bill is greater than amount X

patient_details SEMI-INTERSECTION<aadhar_id = patient_id>

ρ(R, π patient_id (

patient_id$\mathcal{F}$patient_id, (Sum(medicine_charges) + Sum(operation_charges) + Sum(blood_t_charges) + Sum(lab_charges)) →total) (σ (Sum(medicine_charges) + Sum(operation_charges) + Sum(blood_t_charges) + Sum(lab_charges)) > X and status = false(bill))))

select * from patient_details where aadhar_id in

(select patient_id from

(Select patient_id,(Sum(medicine_charges) + Sum(operation_charges) + Sum(blood_t_charges) + Sum(lab_charges) + Sum(service_charges)) as Total

From bill where status = false Group by patient_id Having (Sum(medicine_charges) + Sum(operation_charges) + Sum(blood_t_charges) + Sum(lab_charges) + Sum(service_charges)) > X)

as R)

select * from patient_details where aadhar_id in

(select patient_id from

(Select patient_id,(Sum(medicine_charges) + Sum(operation_charges) + Sum(blood_t_charges) + Sum(lab_charges) + Sum(service_charges)) as Total from bill where status = false group by patient_id Having (Sum(medicine_charges) + Sum(operation_charges) + Sum(blood_t_charges) + Sum(lab_charges) + Sum(service_charges)) > 30000) as R)

Data Output | Explain | Messages | Notifications

	aadhar_id [PK] numeric (12)	dob date	gender character (1)	fname character varying (20)	mname character varying (20)	lname character varying (20)	blood_group character varying (3)
1	618290147720	08-10-1...	F	Annetta	Rollie	Dowley	B-