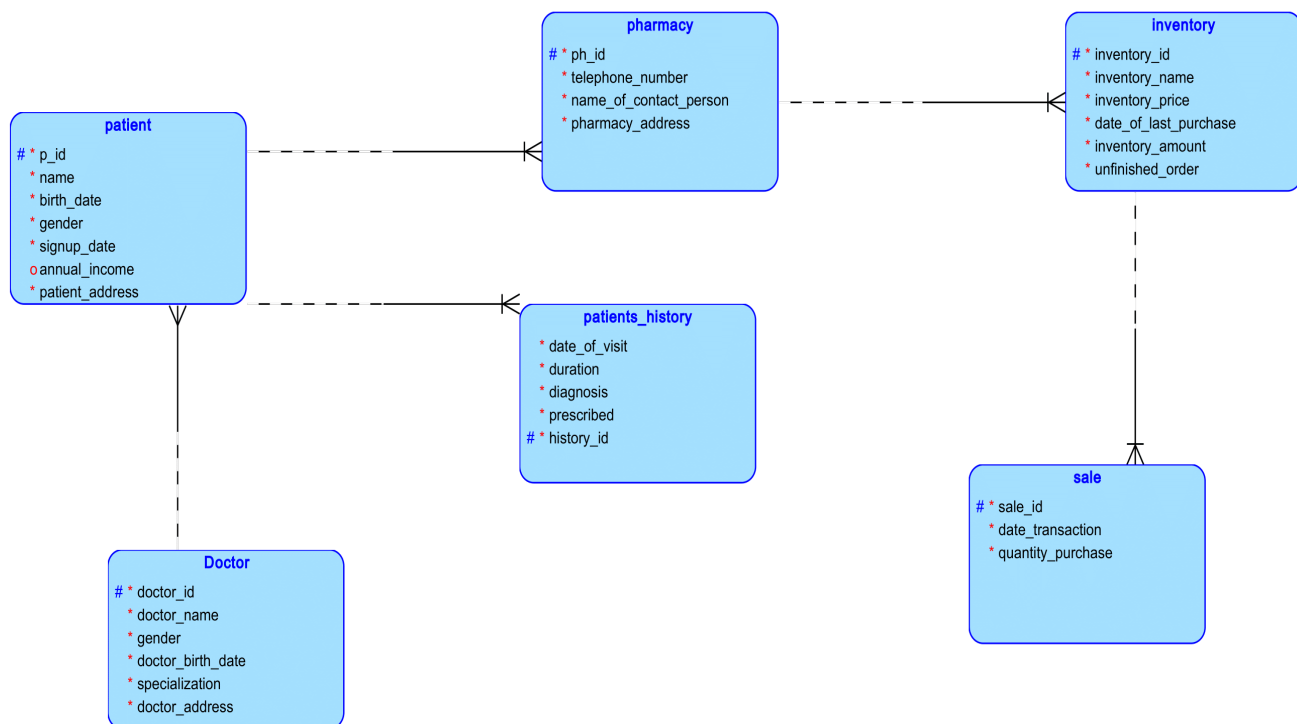


SQL Project

MD RAKIB HASAN

December 20, 2022

1 Entity relationship model



2 Create table

```
CREATE TABLE doctor (  
  doctor_id NUMBER NOT NULL,  
  doctor_name VARCHAR2(30) NOT NULL,  
  gender VARCHAR2(10) NOT NULL,  
  doctor_birth_date DATE NOT NULL,  
  specialization VARCHAR2(30) NOT NULL,  
  doctor_address VARCHAR2(50) NOT NULL  
);
```

```
ALTER TABLE doctor ADD CONSTRAINT doctor_pk PRIMARY KEY ( doctor_id );
```

```
CREATE TABLE inventory (  
  inventory_id NUMBER NOT NULL,  
  inventory_name VARCHAR2(30) NOT NULL,  
  pharmacy_ph_id NUMBER NOT NULL,  
  pharmacy_patient_patient_id NUMBER NOT NULL,  
  inventory_price NUMBER NOT NULL,  
  date_of_last_purchase DATE NOT NULL,  
  inventory_amount NUMBER NOT NULL,  
  unfinished_order NUMBER NOT NULL  
);
```

```
ALTER TABLE inventory  
ADD CONSTRAINT pharmacy_inventory_pk PRIMARY KEY ( inventory_id,  
  pharmacy_ph_id,  
  pharmacy_patient_patient_id );
```

```
CREATE TABLE patient (  
  p_id NUMBER NOT NULL,  
  name VARCHAR2(30) NOT NULL,  
  birth_date DATE NOT NULL,  
  gender VARCHAR2(10) NOT NULL,  
  signup_date DATE NOT NULL,  
  annual_income NUMBER(6, 3),  
  doctor_doctor_id NUMBER NOT NULL,  
  patient_address VARCHAR2(50) NOT NULL  
);
```

```
ALTER TABLE patient ADD CONSTRAINT patients_pk PRIMARY KEY ( p_id );
```

```
CREATE TABLE patients_history (  
  date_of_visit DATE NOT NULL,  
  duration NUMBER NOT NULL,  
  diagnosis VARCHAR2(30) NOT NULL,  
  prescribed VARCHAR2(30) NOT NULL,  
  history_id NUMBER NOT NULL,
```

```
patient_patient_id NUMBER NOT NULL
);
```

```
ALTER TABLE patients_history ADD CONSTRAINT patients_history_pk PRIMARY KEY (
history_id,
patient_patient_id );
```

```
CREATE TABLE pharmacy (
ph_id NUMBER NOT NULL,
telephone_number NUMBER(14) NOT NULL,
name_of_contact_person VARCHAR2(30) NOT NULL,
patient_patient_id NUMBER NOT NULL,
address_address_id NUMBER NOT NULL,
address_patient_patient_id NUMBER NOT NULL,
address_doctor_doctor_id NUMBER NOT NULL,
pharmacy_address VARCHAR2(50) NOT NULL
);
```

```
CREATE UNIQUE INDEX pharmacy_idx ON
pharmacy (
address_address_id
ASC,
address_patient_patient_id
ASC,
address_doctor_doctor_id
ASC );
```

```
ALTER TABLE pharmacy ADD CONSTRAINT pharmacy_pk PRIMARY KEY ( ph_id,
patient_patient_id );
```

```
CREATE TABLE sale (
sale_id NUMBER NOT NULL,
date_transaction DATE NOT NULL,
inventory_inventory_id NUMBER NOT NULL,
inventory_pharmacy_pharmacy_id NUMBER NOT NULL,
inventory_pharmacy_patient_patient_id NUMBER NOT NULL,
quantity_purchase NUMBER NOT NULL
);
```

```
ALTER TABLE sale
ADD CONSTRAINT sales_pk PRIMARY KEY ( sale_id,
inventory_inventory_id,
inventory_pharmacy_pharmacy_id,
inventory_pharmacy_patient_patient_id );
```

```
ALTER TABLE inventory
ADD CONSTRAINT inventory_pharmacy_fk FOREIGN KEY ( pharmacy_ph_id,
pharmacy_patient_patient_id )
```

```
REFERENCES pharmacy ( ph_id,  
patient_patient_id );
```

```
ALTER TABLE patient  
ADD CONSTRAINT patient_doctor_fk FOREIGN KEY ( doctor_doctor_id )  
REFERENCES doctor ( doctor_id );
```

```
ALTER TABLE patients_history  
ADD CONSTRAINT patients_history_patient_fk FOREIGN KEY ( patient_patient_id )  
REFERENCES patient ( p_id );
```

```
ALTER TABLE pharmacy  
ADD CONSTRAINT pharmacy_patient_fk FOREIGN KEY ( patient_patient_id )  
REFERENCES patient ( p_id );
```

```
ALTER TABLE sale ADD CONSTRAINT sale_inventory_fk FOREIGN KEY ( inventory_inventory_id,  
inventory_pharmacy_pharmacy_id,  
inventory_pharmacy_patient_patient_id )
```

```
REFERENCES inventory ( inventory_id,  
pharmacy_ph_id,  
pharmacy_patient_patient_id );
```

3 Insert data into table

3.1 doctor

```
insert into doctor values(1,'Anna','female','03MAR95','Cardiology','Lodz');  
insert into doctor values(2,'Weronika','female','04JUN92','Dermatology','Warsaw');  
insert into doctor values(3,'Angel','female','01JAN87','Neurology','Dhaka');  
insert into doctor values(5,'Angel','female','01Aug87','Something','London');  
insert into doctor values(7,'Messi','male','01Aug88','Something','Rosario');
```

3.2 patient

```
insert into patient values(11,'John','04MAR02','male','02MAR22',NULL,2,'Lodz');  
insert into patient values(12,'Monika','02Jun99','female','02JAN22',NULL,1,'Warsaw');  
insert into patient values(17,'Hasan','01MAR02','male','02JUL22',NULL,2,'Lodz')  
insert into patient values(1,'Hasan','01MAR02','male','02JUL22',NULL,2,'Lodz');  
insert into patient values(19,'Rakib','01MAR02','male','02JUL22',NULL,2,'Lodz');
```

3.3 patients history

```
insert into patients_history values('04MAR02',45,'diag','pes',16,11);  
insert into patients_history values('02Jun99',34,'nosis','scribed',45,12);
```

```
insert into patients_history values('01MAR02',60,'diagnosis','prescribed',87,17);
insert into patients_history values('02Jun99',34,'sis','scribed',5,19);
insert into patients_history values('01MAR02',60,'no','prescribed',107,17);
```

3.4 pharmacy

```
insert into pharmacy values(34,6789034566,'him',11,1,1,1,'tamka');
insert into pharmacy values(37,6789034545,'her',17,2,2,2,'centrum');
insert into pharmacy values(59,6789034566,'she',11,3,3,3,'tamka');
insert into pharmacy values(33,4566455676,'hhh',19,4,4,4,'Lodz');
insert into pharmacy values(30,67890345,'sss',17,5,5,5,'baluty');
```

3.5 inventory

```
insert into inventory values(78,'dr',34,11,450,'03JAN22',4567,34);
insert into inventory values(88,'ug',37,17,40,'03MAR22',467,4);
insert into inventory values(77,'drug',59,11,50,'03JUN22',567,74);
insert into inventory values(18,'ug',37,17,40,'03MAR22',467,4);
insert into inventory values(27,'drug',33,19,50,'03JUN22',567,74);
```

3.6 sale

```
insert into sale values(5,'03JAN22',78,34,11,20);
insert into sale values(6,'03MAR22',88,37,17,40);
insert into sale values(7,'03JUN22',77,59,11,2);
insert into sale values(4,'03MAR22',27,33,19,40);
insert into sale values(8,'03JUN22',18,37,17,2);
```

4 Operations over table

```
--select * from sale;

-- select name from patient;

-- select * from patient
-- where doctor_doctor_id > 1;

-- select sum(inventory_price) from inventory;

-- select avg(inventory_price) from inventory;

-- SELECT inventory_name, SUM(unfinished_order)
-- FROM inventory
-- GROUP BY inventory_name
```

```

-- HAVING SUM(unfinished_order)>20;

-- SELECT inventory_name, inventory_amount FROM inventory
-- ORDER BY inventory_amount desc;

SELECT inventory_name, inventory_amount FROM inventory
ORDER BY inventory_name DESC, inventory_amount ASC;

SELECT * FROM doctor
WHERE doctor_name LIKE '%nn%';

SELECT DISTINCT doctor_name FROM doctor;

SELECT doctor_name, specialization FROM doctor, patient
WHERE doctor_address = patient_address AND p_id = 12;

SELECT name, SUM(doctor_doctor_id) AS sum FROM patient
WHERE patient_address = 'Lodz'
GROUP BY name
HAVING SUM(doctor_doctor_id) > 1
ORDER BY sum ASC;

SELECT name, SUM(doctor_doctor_id) AS sum FROM patient
WHERE patient_address = 'Lodz'
GROUP BY name
HAVING SUM(doctor_doctor_id) >= 1
ORDER BY sum ASC
OFFSET 1 ROWS;

SELECT name, SUM(doctor_doctor_id) AS sum FROM patient
WHERE patient_address = 'Lodz'
GROUP BY name
HAVING SUM(doctor_doctor_id) >= 1
ORDER BY sum ASC
OFFSET 1 ROWS
FETCH NEXT 1 ROWS ONLY;

SELECT DISTINCT p.name, p.gender, p.doctor_doctor_id FROM patient p, doctor d
WHERE p.gender = d.gender;

SELECT doctor_id, doctor_name, name, patient_address FROM patient
INNER JOIN doctor
ON p_id = doctor_id;

SELECT name, patient_address, doctor_name FROM doctor
RIGHT JOIN patient
ON doctor_id = p_id;

```

```
SELECT name, patient_address, doctor_name FROM doctor
LEFT JOIN patient
ON doctor_id = p_id;
```

```
SELECT name, patient_address, doctor_name FROM doctor
FULL JOIN patient
ON doctor_id = p_id;
```

```
SELECT doctor_name, name FROM doctor
CROSS JOIN patient;
```

```
SELECT a.doctor_id, a.doctor_name, b.doctor_name, b.doctor_id
FROM doctor a, doctor b
WHERE a.doctor_id < b.doctor_id;
```

```
SELECT *
FROM doctor
NATURAL JOIN patient;
```

```
SELECT doctor_name, doctor_id, specialization FROM doctor
WHERE doctor_id IN
(SELECT doctor_doctor_id FROM patient WHERE patient_address = 'Warsaw');
```

```
SELECT * FROM doctor
WHERE doctor_address IN
('Lodz','Dhaka');
```

```
SELECT * FROM doctor
WHERE doctor_address NOT IN
('Lodz','Dhaka');
```

```
SELECT doctor_name, doctor_address FROM doctor
WHERE EXISTS
(SELECT p_id FROM patient
WHERE p_id = doctor_id);
```

```
SELECT doctor_id, doctor_name FROM doctor
WHERE doctor_id != ALL (SELECT doctor_doctor_id FROM patient
WHERE gender = 'female' OR patient_address = 'Warsaw');
```