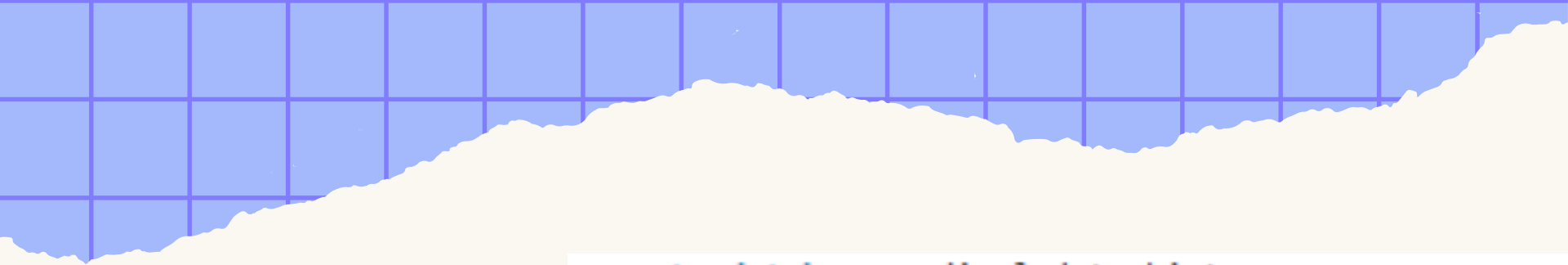# MEDICAL DATA HISTORY

```sql
create database medical_data_history;
use medical_data_history;



-- for admissions--

alter table admissions
modify column admission_date date;
alter table admissions
modify column discharge_date date;
alter table admissions
modify column diagnosis varchar(100);
alter table admissions
change attending_doctor_id doctor_id int;
alter table admissions
add constraint fk_doctor_id
foreign key (doctor_id)
references doctors(doctor_id);
alter table admissions
add constraint fk_patient_id
foreign key(patient_id)
references patients(patient_id);
```
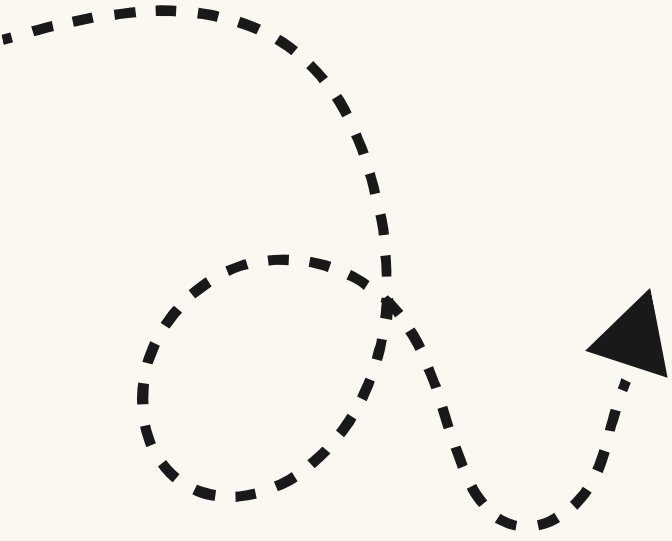
```sql
update admissions
set admission_date = case
    when admission_date like '%/%' then date_format(str_to_date(admission_date,"%Y/%m/%d"),"%Y-%m-%d")
    when admission_date like '%-%' then date_format(str_to_date(admission_date,"%Y-%m-%d"),"%Y-%m-%d")
end;
update admissions
set discharge_date = case
    when discharge_date like '%/%' then date_format(str_to_date(discharge_date,"%Y/%m/%d"),"%Y-%m-%d")
    when discharge_date like '%-%' then date_format(str_to_date(discharge_date,"%Y-%m-%d"),"%Y-%m-%d")
end;
desc admissions;
```
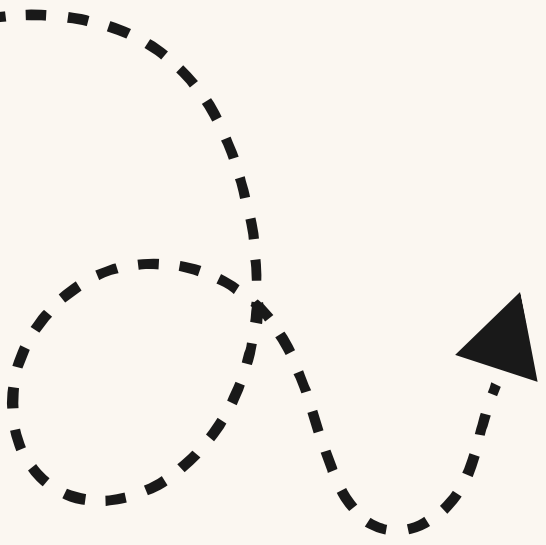
```sql
--  for doctors---

alter table doctors
modify column first_name varchar(50);
alter table doctors
modify column last_name varchar(50);
alter table doctors
change specialty speciality varchar(50);
alter table doctors
add constraint pk_doctor_id
primary key(doctor_id);
desc doctors;
```
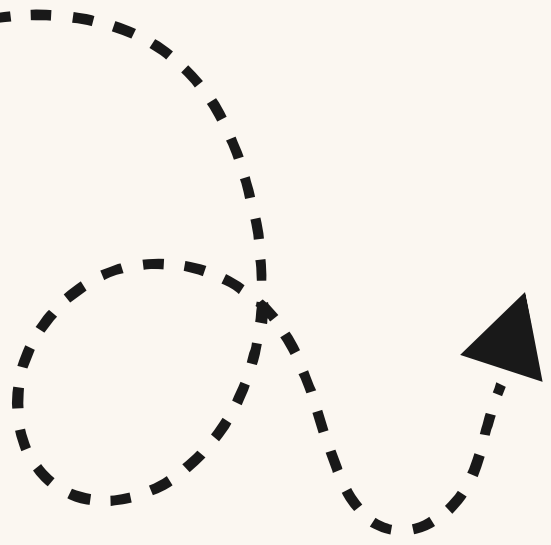
```sql
--  for patients--

alter table patients
modify column first_name varchar(50);
alter table patients
modify column last_name varchar(50);
alter table patients
modify column gender varchar(10);
alter table patients
modify column birth_date date;
alter table patients
modify column city varchar(50);
alter table patients
modify column province_id varchar(10);
alter table patients
modify column allergies varchar(50);
alter table patients
add constraint pk_patient_id
primary key(patient_id);
```
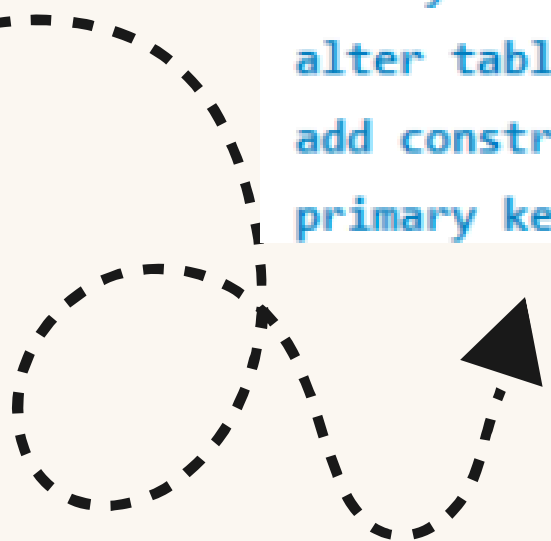
```sql
alter table patients
add constraint fk_province_id
foreign key(province_id)
references province_names(province_id);
update patients
set birth_date = case
    when birth_date like '%/%' then date_format(str_to_date(birth_date,"%Y/%m/%d"),"%Y-%m-%d")
    when birth_date like '%-%' then date_format(str_to_date(birth_date,"%Y-%m-%d"),"%Y-%m-%d")
end;
desc patients;
```
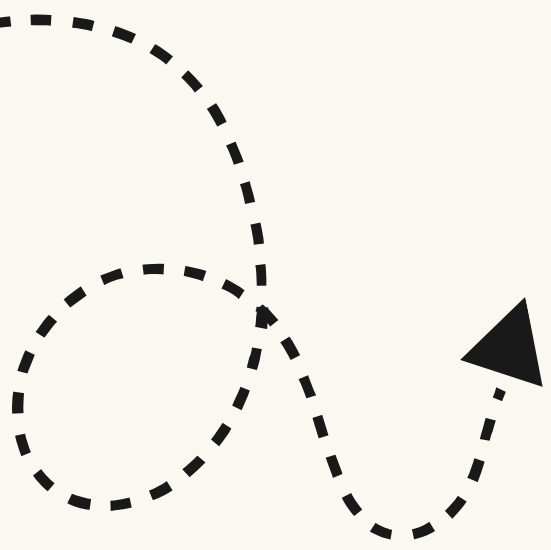
```sql
-- for province_names ---
alter table province_names
modify column province_id varchar(10);
alter table province_names
modify column province_name varchar(50);
alter table province_names
add constraint pk_province_id
primary key(province_id);
desc province_names;
```
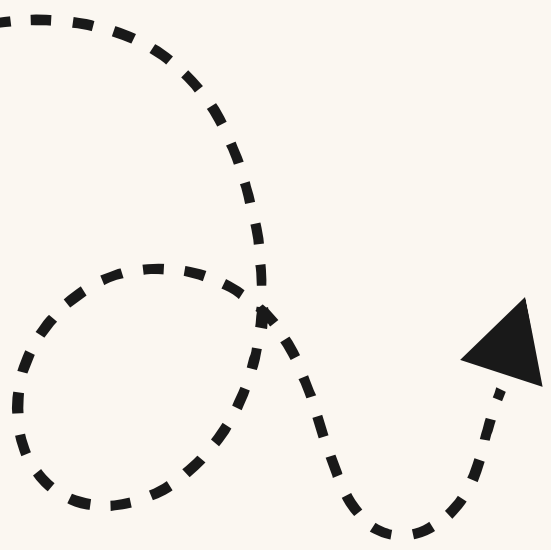
```sql
-- 1. Show first name, last name, and gender of patients who's gender is 'M'

select first_name,last_name,gender
from patients
where gender = "M";


-- 2. Show first name and last name of patients who does not have allergies.

select first_name,last_name
from patients
where allergies is null;


-- 3. Show first name of patients that start with the letter 'C'

select first_name
from patients
where first_name like "C%";
```
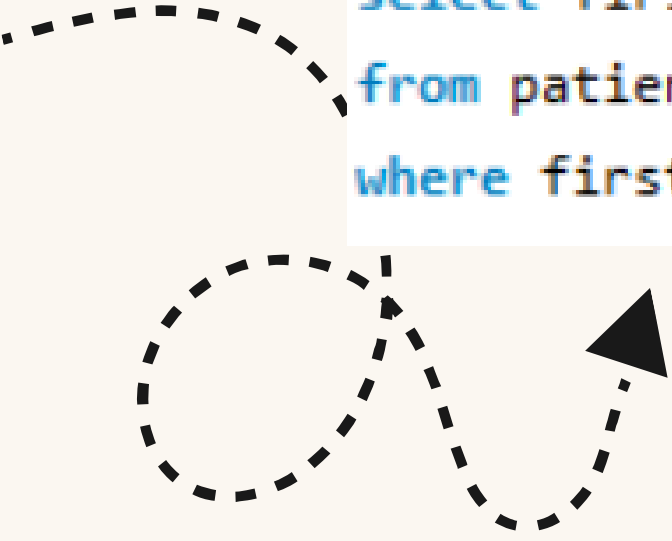
```sql
-- 4. Show first name and last name of patients that weight within the range of 100 to 120 (inclusive)

select first_name,last_name,weight
from patients
where weight between 100 and 120;


-- 5. Update the patients table for the allergies column. If the patient's allergies is null then replace it with 'NKA'

update patients
set allergies = case
    when allergies is null then 'NKA'
    else allergies
end;


select * from patients;


-- 6. Show first name and last name concatenated into one column to show their full name.

select concat(first_name," ",last_name) as full_name
from patients; -- for patients

select concat(first_name," ",last_name) as full_name
from doctors; -- for doctors
```
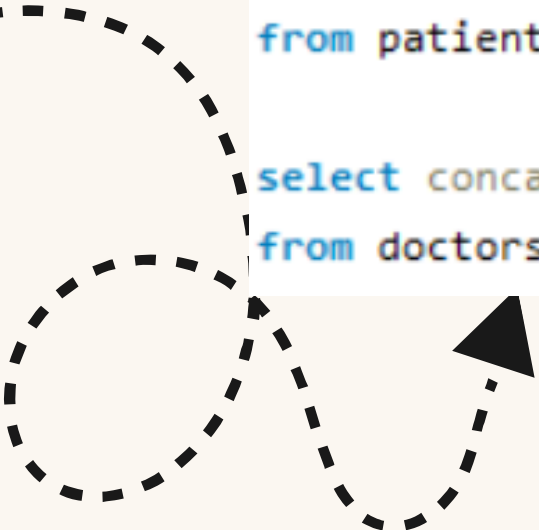
```sql
-- 7. Show first name, last name, and the full province name of each patient.

select * from
(select a.first_name,a.last_name,b.province_name
from patients as a
join
province_names as b
on a.province_id = b.province_id) r
order by province_name asc;


-- 8. Show how many patients have a birth_date with 2010 as the birth year.

select first_name,count(patient_id) as no_of_patients
from patients
where year(birth_date) = 2010
group by first_name;


-- 9. Show the first_name, last_name, and height of the patient with the greatest height.

select first_name,last_name,height
from patients
where height =
(select max(height) from patients);
```

```sql
-- 10. Show all columns for patients who have one of the following patient_ids: 1,45,534,879,1000

select *
from patients
where patient_id in (1,45,534,879,1000);


-- 11. Show the total number of admissions

select count(patient_id) as total_no_of_admissions
from admissions;


-- 12. Show all the columns from admissions where the patient was admitted and discharged on the same day.

select *
from admissions
where admission_date = discharge_date;
```

```sql
-- 13. Show the total number of admissions for patient_id 579.

select count(patient_id) as total_no_of_admissions_by_patient_id_579
from admissions
where patient_id = 579;


-- 14. Based on the cities that our patients live in, show unique cities that are in province_id 'NS'?

select distinct(city)
from patients
where province_id = "NS";


-- 15. Write a query to find the first_name, last name and birth date of patients who have height more than 160 and weight more than 70

select first_name,last_name,birth_date
from patients
where height > 160
and weight > 70;
```
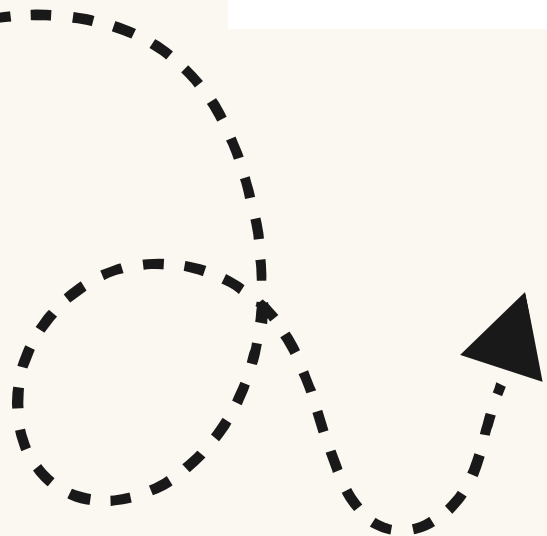
```sql
-- 16. Show unique birth years from patients and order them by ascending.

select distinct(year(birth_date)) as distinct_year
from patients
order by distinct_year asc;


-- 17. Show unique first names from the patients table which only occurs once in the list.

select first_name
from patients
group by first_name
having count(first_name) = 1;


-- 18. Show patient_id and first_name from patients where their first_name start and ends with 's' and is at least 6 characters long.

select patient_id,first_name
from patients
where first_name like "S%s"
and length(first_name) >= 6;
```

```sql
-- 19. Show patient_id, first_name, last_name from patients whos diagnosis is 'Dementia'.    Primary diagnosis is stored in the admissions table.

select a.patient_id,a.first_name,a.last_name
from patients as a
join
admissions as b
on a.patient_id = b.patient_id
where b.diagnosis = "Dementia";


-- 20. Display every patient's first_name. Order the list by the length of each name and then by alphbetically.

select first_name
from patients
order by length(first_name) asc,first_name asc;


-- 21. Show the total amount of male patients and the total amount of female patients in the patients table. Display the two results in the same row.

select
    sum(case when gender = "M" then 1 else 0 end) as male_patients,
    sum(case when gender = "F" then 1 else 0 end) as female_patients
from patients;
```
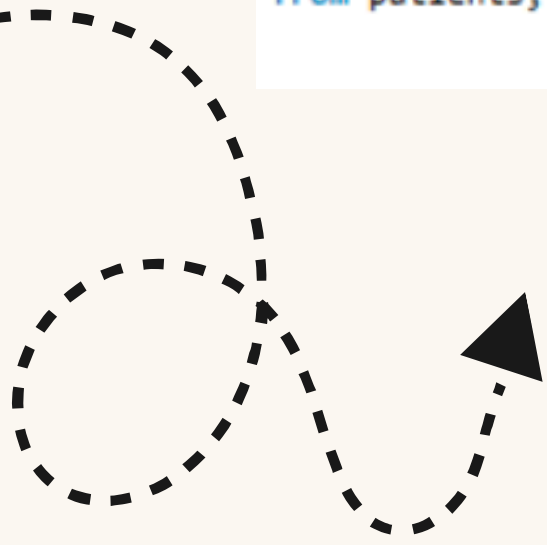
```sql
/*22. Show the total amount of male patients and the total amount of female patients in the patients table.
 Display the two results in the same row.*/


select
    sum(case when gender = "M" then 1 else 0 end) as male_patients,
    sum(case when gender = "F" then 1 else 0 end) as female_patients
from patients;


-- 23. Show patient_id, diagnosis from admissions. Find patients admitted multiple times for the same diagnosis.

select patient_id,diagnosis,count(*) as admission_count
from admissions
group by diagnosis,patient_id
having count(*)>=2;


-- 24. Show the city and the total number of patients in the city. Order from most to least patients and then by city name ascending.

select count(patient_id),city
from patients
group by city
order by count(patient_id) desc,city asc;
```
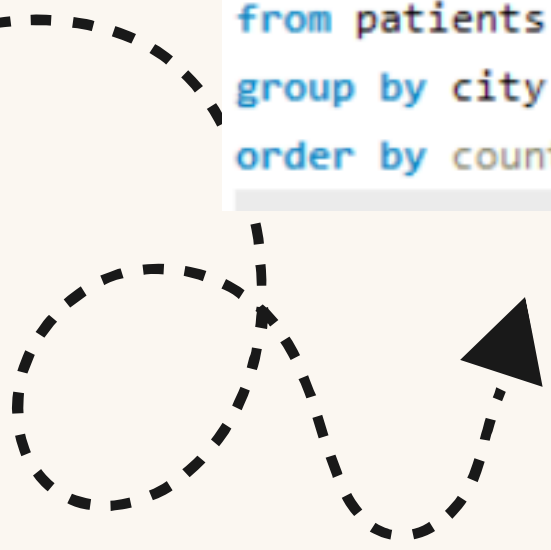
```sql
-- 25. Show first name, last name and role of every person that is either patient or doctor.    The roles are either "Patient" or "Doctor"

SELECT first_name, last_name, 'Patient' AS role
FROM patients
UNION
SELECT first_name, last_name, 'Doctor' AS role
FROM doctors;


-- 26. Show all allergies ordered by popularity. Remove NULL values from query.

select allergies,count(*) as popularity
from patients
where allergies is not null
group by allergies
order by popularity desc;


-- 27. Show all patient's first_name, last_name, and birth_date who were born in the 1970s decade. Sort the list starting from the earliest birth_date.

select first_name,last_name,birth_date
from patients
where year(birth_date) between 1970 and 1979
order by birth_date asc;
```

```sql
/* 28. We want to display each patient's full name in a single column.
Their last_name in all upper letters must appear first, then first_name in all lower case letters.
Separate the last_name and first_name with a comma. Order the list by the first_name in decending order
EX: SMITH,jane */

select concat(upper(last_name),",",lower(first_name)) as full_name
from patients
order by first_name desc;


-- 29. Show the province_id(s), sum of height; where the total sum of its patient's height is greater than or equal to 7,000.

select province_id,sum(height) as total_height
from patients
group by province_id
having total_height >= 7000;


-- 30. Show the difference between the largest weight and smallest weight for patients with the last name 'Maroni'

select last_name,(max(weight)-min(weight)) as difference_weight
from patients
where last_name = "Maroni"
group by last_name;
```
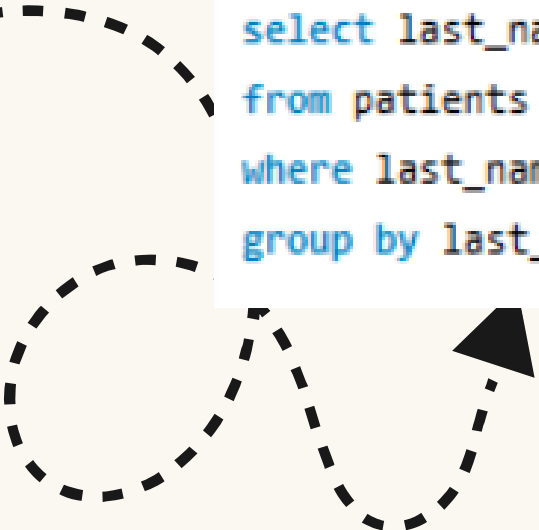
```sql
/* 31. Show all of the days of the month (1-31) and how many admission_dates occurred on that day.
Sort by the day with most admissions to least admissions.*/

select day(admission_date) as day_inclusive,count(admission_date) as count_of_admissions
from admissions
group by day_inclusive
order by day_inclusive asc,count_of_admissions desc;


/* 32. Show all of the patients grouped into weight groups.
Show the total amount of patients in each weight group. Order the list by the weight group decending.
 e.g. if they weight 100 to 109 they are placed in the 100 weight group, 110-119 = 110 weight group, etc.*/

select floor(weight/10)*10 as weight_g,count(*) as total_patients
from patients
group by weight_g
order by weight_g desc;
```
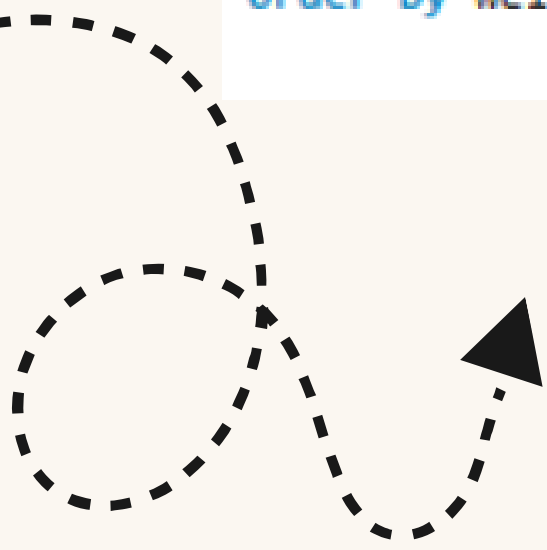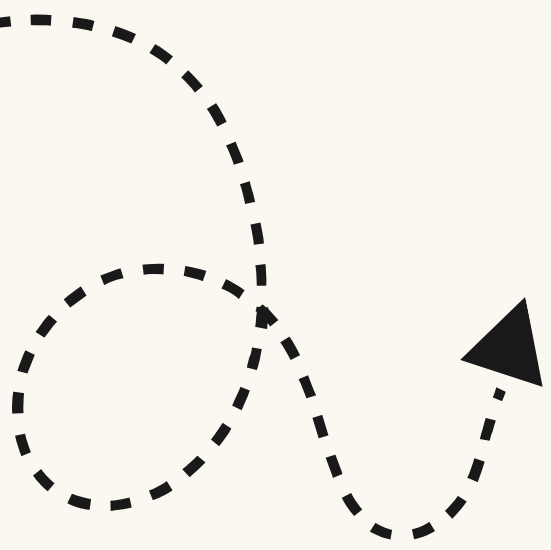
```
/* 33. Show patient_id, weight, height, isObese from the patients table.
Display isObese as a boolean 0 or 1. Obese is defined as weight(kg)/(height(m).
Weight is in units kg. Height is in units cm.*/


select patient_id,weight,height,(weight/((height/100)*(height/100))>=30) as isObese
from patients;
```

```sql
/* 34. Show patient_id, first_name, last_name, and attending doctor's specialty.
 Show only the patients who has a diagnosis as 'Epilepsy' and the doctor's first name is 'Lisa'.
 Check patients, admissions, and doctors tables for required information.*/

select a.patient_id,a.first_name,a.last_name,c.speciality
from patients as a
join
admissions as b
on a.patient_id = b.patient_id
join
doctors as c
on b.doctor_id = c.doctor_id
where b.diagnosis = 'Epilepsy'
and c.first_name = 'Lisa';
```
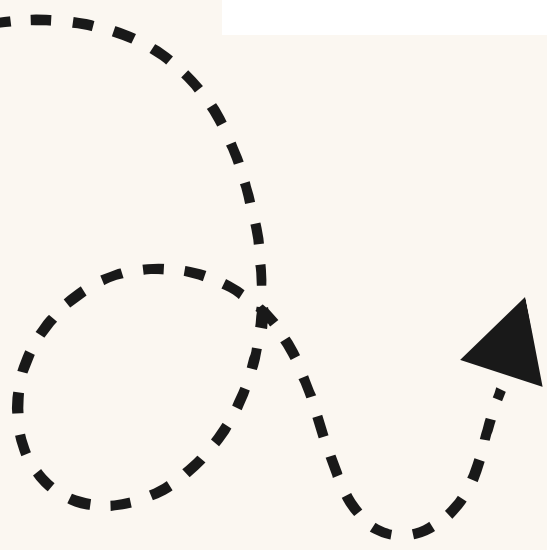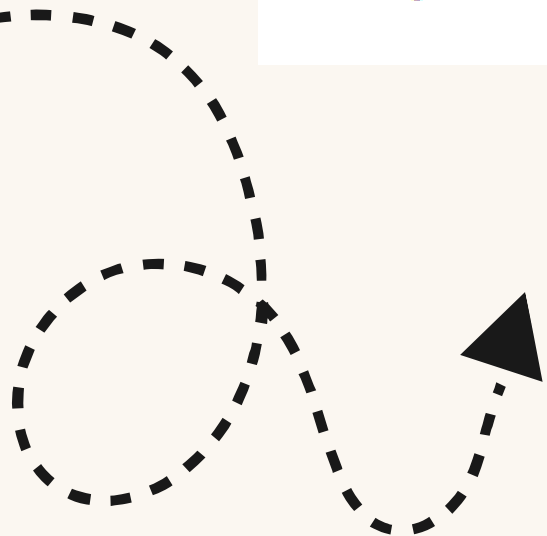
```sql
/* 35. All patients who have gone through admissions, can see their medical documents on our site.
Those patients are given a temporary password after their first admission.
Show the patient_id and temp_password.*/

/* The password must be the following, in order:
    - patient_id
    - the numerical length of patient's last_name
    - year of patient's birth_date
*/

select distinct(b.patient_id),concat(b.patient_id,length(a.last_name),year(a.birth_date)) as temp_password
from patients as a
join
admissions as b
on a.patient_id = b.patient_id;
```

THANK YOU!