Ebram Rasmy ----------postgres--------lab1---------

----------1----------

```
create table track (
    id SERIAL primary key,
    track_name varchar(100) not null
);

create table student (
    id serial primary key,
    e_name varchar(100) not null,
    email varchar(100) unique not null,
    address text,
    track_id int,
    foreign key (track_id) references track(id)
);
create table subject (
    id serial primary key,
    sub_name varchar(100) not null,
    max_score int not null
);

create table exam (
    id serial primary key,
    date date not null
);

create table grades (
    stu_id int,
    sub_id int,
    exam_id int,
    grade int check (grade >= 0),
    primary key (stu_id, sub_id, exam_id),
    foreign key (stu_id) references student(id),
    foreign key (sub_id) references subject(id),
    foreign key (exam_id) references exam(id)
);

create table stu_sub (
    stu_id int,
    sub_id int,
    primary key (stu_id, sub_id),
    foreign key (stu_id) references student(id),
    foreign key (sub_id) references subject(id)
);


create table track_sub (
    track_id int,
    sub_id int,
    primary key (track_id, sub_id),
    foreign key (track_id) references track(id),
```

```
    foreign key (sub_id) references subject(id)
);

----------------------------------2-------------------------------------------------------
insert into track (track_name) values ('web development'),('data analysis'),('os');

insert into student (e_name, email, address, track_id) values
('Ebram Rasmy', 'ebram@gmail.com', 'assiut', 1),
('Ebram1', 'ebram1@gmail.com', 'alexandria', 2),
('kareem magdy', 'kareem@gmail.com', 'giza', 1);


insert into subject (sub_name, max_score) values ('html', 100),('python', 100),('sql', 100);

insert into exam (date) values
('2025-05-01'),
('2025-06-01'),
('2025-07-01');

insert into grades (stu_id, sub_id, exam_id, grade) values
(1, 1, 1, 90),
(1, 2, 1, 85),
(2, 2, 2, 88),
(3, 1, 1, 70),
(3, 3, 2, 77);

insert into stu_sub (stu_id, sub_id) values
(1, 1),
(1, 2),
(2, 2),
(3, 1),
(3, 3);


insert into track_sub (track_id, sub_id) values
(1, 1),
(1, 3),
(2, 2),
(3, 2),
(3, 3);

-------------------------3---------------------
alter table student add column birth_date date;

------------------------4-----------------------

create type gender_enum as enum ('Male', 'Female');
alter table student add column gender gender_enum;

-------add data to student birth_date and gender----------

update student
```

```
set birth_date = case
                  when id = 1 then '1989-01-15'::date    --We used ::date to convert the text to a date.
                  when id = 2 then '2001-01-15'::date
                  when id = 3 then '2000-01-15'::date
                 end,
   gender = case
              when id = 1 then 'Male'::gender_enum        --We used ::gender_enum to convert the text
to the custom type we created.
              when id = 2 then 'Male'::gender_enum
              when id = 3 then 'Male'::gender_enum
            end;
--كان بيجيلي ايرور في الجزئية دي يا بشمهندس وحطيت الايرور علي شات جي بي تي اداني الحل اني استخدم
--(::date -- ::gender_enum)
-------------------------------------5-------------------------------------------
--It was done in creating tables.
-------------------------------------6-------------------------------------------
select * from student where gender = 'Male' and birth_date < '1991-10-01';
-------------------------------------7-------------------------------------------
select e_name from student where e_name like 'A%';
-------------------------------------8---------------------------------
select sub_name, max_score from subject order by max_score;
-------------------------------------9---------------------------------
select sub_name, max_score from subject order by max_score desc limit 1;
--or
select sub_name, max_score
from subject
where max_score = (select max(max_score) from subject);
-------------------------------------lab2-----------------------------

---------------------------------1---------------------------------------
select count(*) from student where e_name = 'Mohammed';

---------------------------------2---------------------------------------
select gender , count(*) from student group by gender ;
---------------------------------3---------------------------------------
select split_part(e_name, ' ', 1) as first_name, count(*) as count
from student
group by first_name
having count(*) > 2;
--we use split_part(e_name, ' ', 1) because we add e_name Compound name

---------------------------------4---------------------------------------
select student.e_name, track.track_name
from student
join track on student.track_id = track.id;
---------------------------------5---------------------------------------
select e_name , track_name
from student join track on student.track_id = track.id
where track_name != 'os';
```