--Departments table

create table departments (

dept\_id int primary key,

dept\_name varchar2(50) unique

);

--Students table

create table students (

student\_id int primary key,

name varchar2(50),

dept\_id int,

gpa number(3,2),

fee number(10,2),

course\_id int,

foreign key (dept\_id) references departments(dept\_id)

);

--Courses table

create table courses (

course\_id int primary key,

course\_name varchar2(50),

dept\_id int,

foreign key (dept\_id) references departments(dept\_id)

);

--Faculty table

create table faculty (

faculty\_id int primary key,

name varchar2(50),

dept\_id int,

salary number(10,2),

foreign key (dept\_id) references departments(dept\_id)

);

--Enrollments table

create table enrollments (

student\_id int,

course\_id int,

primary key (student\_id, course\_id),

foreign key (student\_id) references students(student\_id),

foreign key (course\_id) references courses(course\_id)

);

--Departments

insert into departments values (1, 'AI');

insert into departments values (2, 'CS');

insert into departments values (3, 'CY');

--Courses

insert into courses values (101, 'DBMS', 1);

insert into courses values (102, 'DAA', 1);

insert into courses values (103, 'AP', 2);

-- Students

insert into students values (1, 'Alisha', 1, 3.8, 52335, 101);

insert into students values (2, 'Maha', 1, 2.9, 75643, 102);

insert into students values (3, 'Zara', 2, 3.1, 34566, 103);

insert into students values (4, 'Fasih', 3, 2.2, 87664, 101);

insert into students values (5, 'Zunaira', 1, 3.4, 67656, 101);

insert into students values (6, 'Amin', 1, 2.6, 34634, 102);

insert into students values (7, 'Anabiys', 2, 3.7, 48656, 103);

insert into students values (8, 'Dua', 3, 2.9, 40443, 101);

--Faculty

insert into faculty values (11, 'Dr. Kamran', 1, 93930);

insert into faculty values (12, 'Ms. Nazia', 2, 93724);

insert into faculty values (13, 'Ms. Kinza', 3, 782363);

-- Enrollments

insert into enrollments values (1, 101);

insert into enrollments values (1, 102);

insert into enrollments values (2, 101);

insert into enrollments values (3, 201);

insert into enrollments values (4, 101);

---Q1. List each department and the number of students in it

select dept\_id, count(student\_id) as total\_students from students group by dept\_id;

---Q2. Find departments where the average GPA of students is greater than 3.0

select dept\_id, avg(gpa) as avg\_gpa from students group by dept\_id having avg(gpa) > 3.0;

---Q3. Display the average fee paid by students grouped by course

select course\_id, avg(fee) as avg\_fee from students group by course\_id;

---Q4. Count how many faculty members are assigned to each department

select dept\_id, count(faculty\_id) as faculty\_count from faculty group by dept\_id;

---Q5. Find faculty members whose salary is higher than the average salary

select faculty\_id, name, salary from faculty where salary > (select avg(salary) from faculty);

---Q6. Show students whose GPA is higher than at least one student in the CS department

select student\_id, name, gpa from students where gpa > any (

select gpa from students

where dept\_id = (select dept\_id from departments where dept\_name = 'CS')

);

---Q7. Display the top 3 students with the highest GPA

select student\_id, name, gpa from (select student\_id, name, gpa from students order by gpa desc) where rownum <= 3;

---Q8. Find students enrolled in all the courses that student Ali is enrolled in

select s.student\_id, s.name from students where not exists (

select course\_id from enrollments e join students sa on e.student\_id = sa.student\_id where sa.name = 'Ali'

minus

select course\_id from enrollments e2 where e2.student\_id = s.student\_id

);

---Q9. Show the total fees collected per department

select dept\_id, sum(fee) as total\_fees from students group by dept\_id;

---Q10. Display courses taken by students who have GPA above 3.5

select distinct c.course\_id, c.course\_name from courses c join enrollments e on c.course\_id = e.course\_id join students s on e.student\_id = s.student\_id where s.gpa > 3.5;