**Database creation**

use practice;

**create table**

create table students(student\_id int primary key,name varchar(20) not null,email varchar(50) unique not null);

alter table students add column (department varchar(10),gender varchar(10) default 'm');

desc table students;

create table books(book\_id int primary key,title varchar(50) not null, author varchar(20) not null, category varchar(20),available\_copies int default 1);

create table librarians(librarian\_id int primary key,name varchar(20) not null, experience\_year int default 0);

create table borrow(borrow\_id int primary key,student\_id int ,foreign key(student\_id) references students(student\_id),

book\_id int ,foreign key(book\_id) references books(book\_id),

librarian\_id int,foreign key (librarian\_id) references librarians(librarian\_id),

borrow\_date date,return\_date date);

**inserting values in to the tables**

insert into students value(1,'suresh','suresh1@gmail.com','maths',default);

insert into students value(2,'ramya','ramya2@gmail.com','science','f'),(3,'ramesh','ramesh@gmail.com','socail','m'),(4,'divya','divya4@gmail.com','tamil','f'),(5,'ganesh','ganesh5@gmail.com','english','m');

insert into books value(101,'konar guide','kamesh','school',10),(102,'way to success','rajendran','fluency',50),(103,'dolphin guide','deva','mathematics',20),(104,'sura guide','surya','scientist',40),(105,'sura guide','sachin','earth',30);

insert into librarians value(111,'gokul',5),(222,'nakul',4),(333,'mukesh',3),(444,'vijay',6),(555,'ajith',10);

insert into borrow value(1000,1,101,555,'2025-01-01','2025-01-10');

insert into borrow value(1001,1,102,444,'2025-01-10','2025-01-20'),(1003,2,103,333,'2025-01-10','2025-01-20'),(1004,2,103,444,'2025-02-10','2025-03-20');

insert into borrow value(1005,4,102,111,'2025-03-10','2025-04-20'),(1006,4,104,444,'2025-03-10','2025-04-20');

insert into borrow value(1007,5,105,555,'2025-03-10','2025-04-20'),(1008,2,104,555,'2025-03-10','2025-04-20');

**CRUD OPERATION**

select student\_id,count(book\_id) from borrow group by student\_id;

select librarian\_id,count(borrow\_id) from borrow group by librarian\_id having count(borrow\_id)>1;

select student\_id,book\_id from borrow;

update books set available\_copies=60 where book\_id=103;

delete from borrow where borrow\_id=1004;

select\*from students;

**SQL JOIN**

select borrow.student\_id,books.title from borrow join books on borrow.book\_id=books.book\_id;

select borrow.borrow\_id,borrow.book\_id,librarians.name from borrow join librarians on borrow.librarian\_id=librarians.librarian\_id;

select\*from borrow join students on borrow.student\_id=students.student\_id where students.student\_id=1;

select student\_id,count(book\_id) as total\_books\_borrowed from borrow group by student\_id;

select books.title,count(borrow.book\_id) from borrow join books on books.book\_id=borrow.book\_id group by books.title order by count(borrow.book\_id) desc limit 1;

select avg(experience\_year) from librarians;

select count(student\_id) from students;

select min(borrow\_date),max(borrow\_date),books.title from borrow join books on books.book\_id=borrow.book\_id where books.book\_id=103;