One to Many relationship

Task 1

mysql> Create table dept(dno int primary key,dname varchar(50) Not Null,location varchar(50) Not Null);

mysql> desc dept;

Field	Type	Null	Key	Default	Extra
dno	int	NO	PRI	NULL	
dname	varchar(50)	NO		NULL	
location	varchar(50)	NO		NULL	

mysql> Insert into dept values(101,'Computer','Pune'), (102,'Statistics','Mumbai'), (103,'Quality','Satara'),(104,'Finance','Pune'),(105,'Computer','Mumbai');

mysql> Select * from dept;

dno	dname	location
101	Computer	Pune
102	Statistics	Mumbai
103	Quality	Satara
104	Finance	Pune
105	Computer	Mumbai

mysql> Create table employee(eno int primary key,ename varchar(100) Not Null,designation varchar(50),salary float check(salary>0),date_of_joining date, dno int references dept(dno));

mysql> desc employee;

Field	Type	Null	Key	Default	Extra
eno	int	NO	PRI	NULL	
ename	varchar(100)	NO		NULL	
designation	varchar(50)	YES		NULL	
salary	float	YES		NULL	
date_of_joining	date	YES		NULL	
dno	int	YES		NULL	

mysql> insert into employee values(1,'Mr.Advait','Assistant',54000,'2002-03-23',104), (2,'Mr.Roy','ceo',50000,'2019-06-15',102), (3,'Mr.Abhay','manager',60000,'2013-06-10',102), (4,'Mr.Raghav','manager',42000,'2003-03-01',103), (5,'Mr.Ram','CEO',400000,'2000-12-12',101);
mysql> select * from employee;

eno	ename	designation	salary	date_of_joining	dno
1	Mr.Advait	Assistant	54000	2002-03-23	104
2	Mr.Roy	ceo	50000	2019-06-15	102
3	Mr.Abhay	manager	60000	2013-06-10	102
4	Mr.Raghav	manager	42000	2003-03-01	103
5	Mr.Ram	CEO	400000	2000-12-12	101

1) Add column phone_No into the Employee table with data type int.
mysql > Alter table employee add column phone_no int;
mysql > desc employee;

Field	Type	Null	Key	Default	Extra
eno	int	NO	PRI	NULL	
ename	varchar(100)	NO		NULL	
designation	varchar(50)	YES		NULL	
salary	float	YES		NULL	
date_of_joining	date	YES		NULL	
dno	int	YES		NULL	
phone_no	int	YES		NULL	

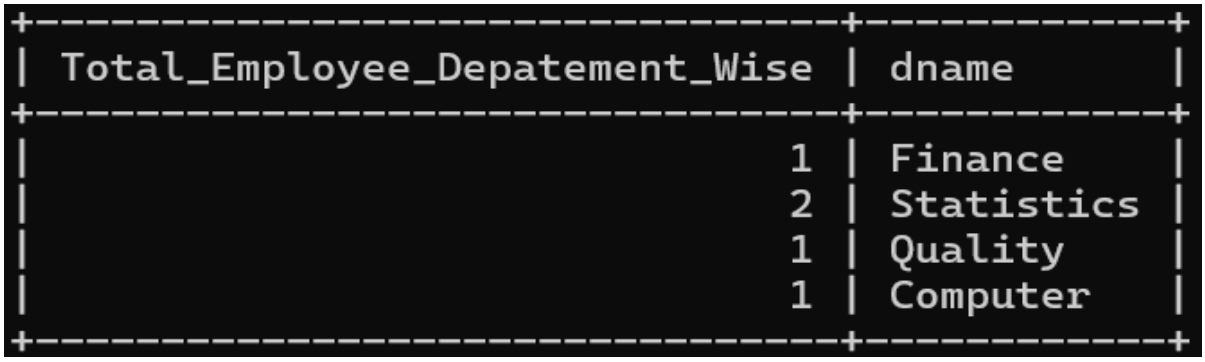
2) Update phone_no column
mysql> update employee set phone_no=786590987 where eno=1;
mysql> update employee set phone_no=896691967 where eno=2;
mysql> update employee set phone_no=967397851 where eno=3;
mysql> update employee set phone_no=730373965 where eno=4;
mysql> update employee set phone_no=877396678 where eno=5;
mysql> select * from employee;

eno	ename	designation	salary	date_of_joining	dno	phone_no
1	Mr.Advait	Assistant	54000	2002-03-23	104	786590987
2	Mr.Roy	ceo	50000	2019-06-15	102	896691967
3	Mr.Abhay	manager	60000	2013-06-10	102	967397851
4	Mr.Raghav	manager	42000	2003-03-01	103	730373965
5	Mr.Ram	CEO	400000	2000-12-12	101	877396678

3) Delete the details of Employee whose designation is ‘Manager’.
mysql> Delete from employee where designation=’Manager’.

4) Display the count of employees department wise.

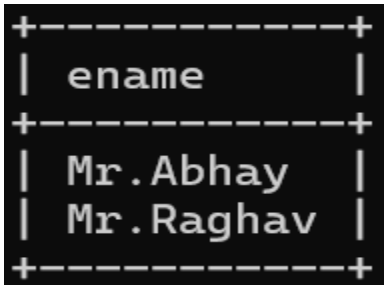
mysql> select count(eno)as Total_Employee_Depatement_Wise,dname from employee,dept where employee.dno=dept.dno group by dname;



Total_Employee_Depatement_Wise	dname
1	Finance
2	Statistics
1	Quality
1	Computer

5) Display the name of the employee who is 'Manager' of the "Account" Department.

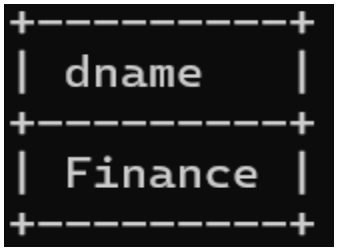
mysql> select ename from employee,dept where employee.dno=dept.dno and designation='Manager' or dname='Account';



ename
Mr.Abhay
Mr.Raghav

6) Display the name of department whose location is "Pune" and "Mr. Advait" is working in it.

mysql> select dname from dept,employee where dept.dno=employee.dno and location='Pune' and ename='Mr.Advait';



dname
Finance

7) Display the names of employees whose salary is greater than 50000 and the department is "Quality".

mysql> select ename from employee,dept where employee.dno=dept.dno and salary>50000 and dname='Quality';

Empty set (0.00 sec)

8) Update Dateofjoining of employee to ‘15/06/2019’ whose department is ‘computer science’ and name is “Mr. Roy’.

mysql> update employee,dept set date_of_joining='2020-07-10' where employee.dno=dept.dno and dname='Computer' and ename='Mr.Roy';

Query OK, 0 rows affected (0.00 sec)

Rows matched: 0 Changed: 0 Warnings: 0

Task 2

mysql> create table client(clientNo int primary key,clientName varchar(100) Not Null,address varchar(50) Not Null);

mysql> desc client;

Field	Type	Null	Key	Default	Extra
clientNo	int	NO	PRI	NULL	
clientName	varchar(100)	NO		NULL	
address	varchar(50)	NO		NULL	

mysql> INSERT INTO client (clientNo, clientName, address) VALUES
-> ('CN001', 'Mr.Ram', 'Pune'),
-> ('CN002', 'Mr.Raghav', 'Satara'),
-> ('CN003', 'Mr.Roy', 'pimpri'),
-> ('CN004', 'Mr.Nilesh', 'Mumbai'),
-> ('CN005', 'Mr.Tushar', 'Solapur');

mysql> select * from client;

clientNo	clientName	address
CN001	Mr.Ram	Pune
CN002	Mr.Raghav	Satara
CN003	Mr.Roy	pimpri
CN004	Mr.Nilesh	Mumbai
CN005	Mr.Tushar	Solapur

mysql> create table sales_order(ordNo int primary key,ordDate date Not Null,sale_order varchar(100) Not Null,clientNo varchar(50) references client(clientNo));

mysql> desc sales_order;

Field	Type	Null	Key	Default	Extra
ordNo	int	NO	PRI	NULL	
ordDate	date	NO		NULL	
sale_order	varchar(100)	NO		NULL	
clientNo	varchar(50)	YES		NULL	

mysql> INSERT INTO sales_order (ordNo, ordDate, sale_order, clientNo) VALUES
-> (1, '2019-03-18', 'Laptop', 'CN001'),
-> (2, '2024-07-02', 'Pizza', 'CN002'),
-> (3, '2024-07-03', 'Bag', 'CN003'),
-> (4, '2022-01-22', 'Mobile', 'CN004'),
-> (5, '2002-01-31', 'Watch', 'CN005');
mysql> select * from sales_order;

ordNo	ordDate	sale_order	clientNo
1	2019-03-18	Laptop	CN001
2	2024-07-02	Pizza	CN002
3	2024-07-03	Bag	CN003
4	2022-01-22	Mobile	CN004
5	2002-01-31	Watch	CN005

1) Add column amount into sales_amt table with data type float.
mysql> alter table sales_order add column sale_amt float;
mysql> select * from sales_order;

ordNo	ordDate	sale_order	clientNo	sale_amt
1	2019-03-18	Laptop	CN001	NULL
2	2024-07-02	Pizza	CN002	NULL
3	2024-07-03	Bag	CN003	NULL
4	2022-01-22	Mobile	CN004	NULL
5	2002-01-31	Watch	CN005	NULL

2) Delete the details of the clients whose names start with ‘A’ character.
mysql> delete from client where clientName Like 'A%';
Query OK, 0 rows affected (0.00 sec)

3) Delete sales order details of a client whose name is “Patil” and order date is “09/08/2019”.
mysql> DELETE FROM sales_order WHERE clientNo IN (SELECT clientNo FROM client

WHERE clientName = 'Patil') AND ordDate = '2019-08-09';
Query OK, 1 row affected (0.01 sec)
mysql> select * from sales_order;

ordNo	ordDate	sale_order	clientNo	sale_amt
1	2019-03-18	Laptop	CN001	21100
3	2024-07-03	Bag	CN003	850
4	2022-01-22	Mobile	CN004	12999
5	2002-01-31	Watch	CN005	2599

4) Change the order date of client_No ‘CN001’ ‘18/03/2019’.
mysql> update client,sales_order set ordDate='2019-12-31' where client.clientNo=sales_order.clientNo and client.clientNo='CN001' and ordDate='2019-03-18';
mysql> select * from sales_order;

ordNo	ordDate	sale_order	clientNo	sale_amt
1	2019-12-31	Laptop	CN001	21100
3	2024-07-03	Bag	CN003	850
4	2022-01-22	Mobile	CN004	12999
5	2002-01-31	Watch	CN005	2599

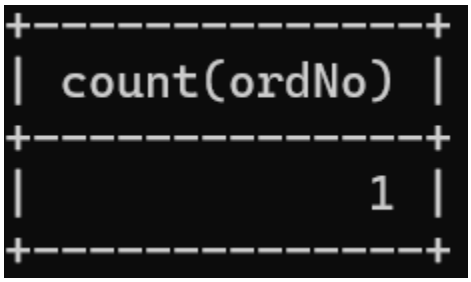
5) Delete all sales_record having an order date is before ‘10 /02/2018’.
mysql> delete from sales_order where ordDate='2018-02-10';
Query OK, 0 rows affected (0.00 sec)

6) Update the address of client to “Pimpri” whose name is ‘Mr. Roy’.
mysql> update client set address='pimpri' where clientName='Mr.Roy';

clientNo	clientName	address
CN001	Mr.Ram	Pune
CN002	Patil	Satara
CN003	Mr.Roy	pimpri
CN004	Mr.Nilesh	Mumbai
CN005	Mr.Tushar	Solapur

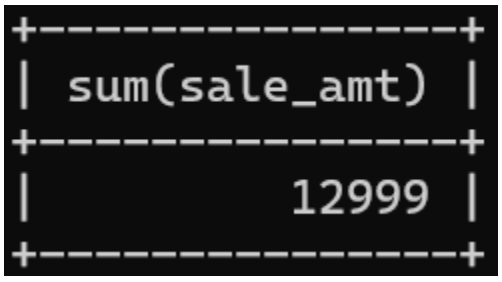
7) display totals orders between 1jan2022 to 31 jan 2022.

mysql> select count(ordNo) from sales_order where ordDate Between '2022-01-01' and '2022-01-31';



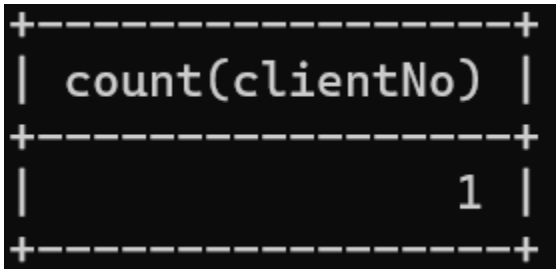
count(ordNo)
1

8) display totals sale amount between 1jan2022 to 31 jan 2022.
mysql> select sum(sale_amt) from sales_order where ordDate Between '2022-01-01' and '2022-01-31';



sum(sale_amt)
12999

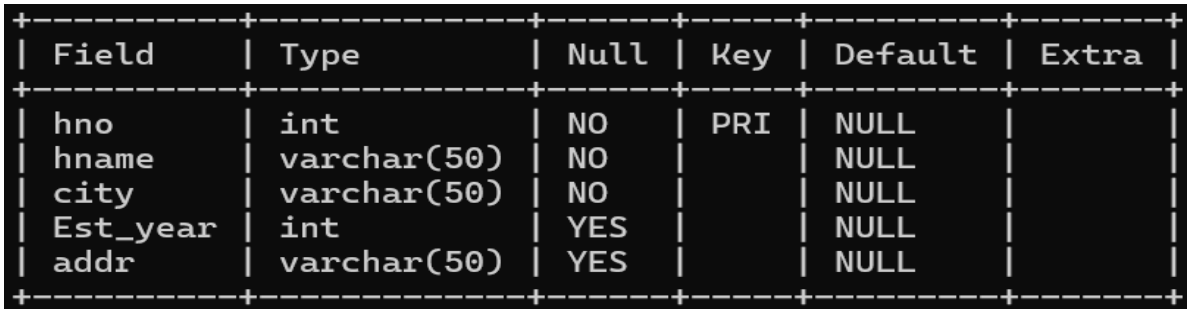
9) display total no of customers from pune location.
mysql> select count(clientNo) from client where address='pune';



count(clientNo)
1

Task 3

mysql> Create table hospital(hno int primary key,hname varchar(50) Not Null,city varchar(50) Not Null,Est_year int,addr varchar(50));



Field	Type	Null	Key	Default	Extra
hno	int	NO	PRI	NULL	
hname	varchar(50)	NO		NULL	
city	varchar(50)	NO		NULL	
Est_year	int	YES		NULL	
addr	varchar(50)	YES		NULL	

mysql> insert into hospital values(1,'City Hospital','Pune',1990,'Pune'),(2,'Apollo Hospital','Mumbai',1983,' '),(3,'CNS','Solapur',2017,'Soalpur'),(4,'Mauli Hospital','Satara',2014,'Satara'),(5,'Fortis Hospital','Delhi',1996,'Delhi');

hno	hname	city	Est_year	addr
1	City Hospital	Pune	1990	Pune
2	Apollo Hospital	Mumbai	1983	
3	Birla	chinchwad	2017	Soalpur
4	Mauli Hospital	Pimple Gurav	2014	Satara
5	Ruby	Delhi	2000	Delhi

mysql> Create table doctor(dno int primary key,dname varchar(100) Not Null,addr varchar(100) Not Null,speciality varchar(100) Not Null,salary float check(salary>0),hno int references hospital(hno));
mysql> desc doctor;

Field	Type	Null	Key	Default	Extra
dno	int	NO	PRI	NULL	
dname	varchar(100)	NO		NULL	
addr	varchar(100)	NO		NULL	
speciality	varchar(100)	NO		NULL	
salary	float	YES		NULL	
hno	int	YES		NULL	

1) Delete addr column from Hospital table.
mysql> Alter table hospital drop addr;
mysql> desc hospital;

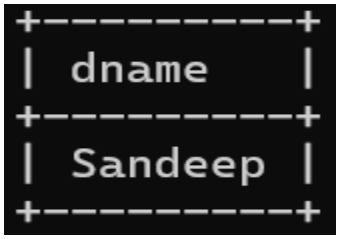
Field	Type	Null	Key	Default	Extra
hno	int	NO	PRI	NULL	
hname	varchar(50)	NO		NULL	
city	varchar(50)	NO		NULL	
Est_year	int	YES		NULL	

2) Display doctor name, Hospital name and specialty of doctors from “Pune City” .
mysql> SELECT doctor.dname, hospital.hname, doctor.speciality FROM doctor, hospital WHERE doctor.hno = hospital.hno AND hospital.city = 'Pune';

dname	hname	speciality
Praveen	City Hospital	MD

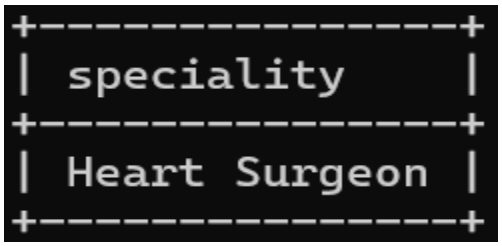
3) Display the names of the hospitals which are located in “Pimpri” city.
mysql> select hname from hospital where city='pimpri';
Empty set (0.00 sec)

4) Display the names of doctors who are working in “Birla” Hospital and the city name is “Chinchwad”.
mysql> select doctor.dname from doctor,hospital where doctor.hno=hospital.hno and hospital.hname='Birla' and hospital.city='chinchwad';



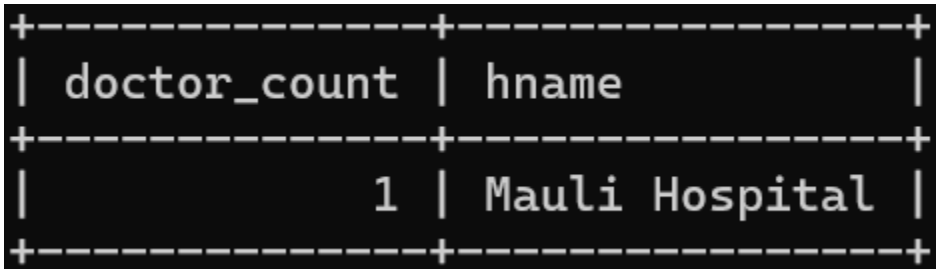
dname
Sandeep

5) Display the speciality of the doctors who are working in “Ruby” hospital.
mysql> select speciality from doctor,hospital where doctor.hno=hospital.hno and hospital.hname='Ruby';



speciality
Heart Surgeon

6) Give the count of doctor’s hospital wise which are located at “Pimple Gurav”.
mysql> select count(dno) as doctor_count,hname from doctor,hospital where doctor.hno=hospital.hno and hospital.city='pimple gurav' group by hospital.hname;



doctor_count	hname
1	Mauli Hospital

7) Update the address of the Doctor to “Pimpri” whose hospital is “Ruby clinic”.
mysql> update doctor,hospital set addr='Pimpri' where doctor.hno=hospital.hno and hname='Ruby' ;
mysql> select * from doctor;

dno	dname	addr	speciality	salary	hno
121	Naresh	Satara	MBBS	45000	2
122	Sandeep	Pune	Dermatology	53000	3
123	Praveen	Mumbai	MD	95000	1
124	Ramdip	Pimpri	Heart Surgeon	76000	5
125	Ashok	Solapur	Orthopaedics	56000	4

8) display doctor details whose speciality is Heart Surgeon and who belong to a hospital from pune.

mysql> select * from doctor,hospital where doctor.hno=hospital.hno and doctor.speciality='Heart Surgeon' and hospital.city='Pune';

Empty set (0.00 sec)

9) Update the address of the hospital to "Pimpri" whose hospital was established in "2000".

mysql> update hospital set city='Pimpri' where Est_year=2000;

mysql> select * from hospital;

hno	hname	city	Est_year
1	City Hospital	Pune	1990
2	Apollo Hospital	Mumbai	1983
3	Birla	chinchwad	2017
4	Mauli Hospital	Pimple Gurav	2014
5	Ruby	Pimpri	2000

10) Display Total salary of all doctors hospital wise.

mysql> select sum(salary) as Salary_Sum, hname from doctor,hospital where doctor.hno=hospital.hno group by hospital.hname;

Salary_Sum	hname
45000	Apollo Hospital
53000	Birla
95000	City Hospital
76000	Ruby
56000	Mauli Hospital

11) Display the annual salary of a doctor who lives in Pune.

mysql> select salary*12 as Annual_Salary from doctor where addr='Pune';

dno	dname	addr	speciality	salary	hno
121	Naresh	Satara	MBBS	45000	2
122	Sandeep	Pune	Dermatology	53000	3
123	Praveen	Mumbai	MD	95000	1
124	Ramdip	Pimpri	Heart Surgeon	76000	5
125	Ashok	Solapur	Orthopaedics	56000	4

Task 4

mysql> Create table department(dno int primary key,dname varchar(100),HOD varchar(100),loc varchar(50));

mysql> desc department;

Field	Type	Null	Key	Default	Extra
dno	int	NO	PRI	NULL	
dname	varchar(100)	YES		NULL	
HOD	varchar(100)	YES		NULL	
loc	varchar(50)	YES		NULL	

mysql> insert into department values(1, 'Research','Mr.Desai','Pune'),(2, 'Development','Mr.Sham','Mumbai'), (3, 'Marketing','Mr.Yash','Satara'),(4, 'Statistic','Mr.Shah','Kolhapur');

mysql> Create table project(pno int primary key,pname varchar(100) Not Null,start_date date,budget float,status varchar(100),dno int references department(dno));

mysql> desc project;

Field	Type	Null	Key	Default	Extra
pno	int	NO	PRI	NULL	
pname	varchar(100)	NO		NULL	
start_date	date	YES		NULL	
budget	float	YES		NULL	
status	varchar(100)	YES		NULL	
dno	int	YES		NULL	

mysql> Insert into project values(101, 'Student Management', '2023-01-01',20000,'Progressive',2), (102,'Currency Converter', '2024-11-21', 5000, 'Completed',

4), (103,'Snake Game','2024-07-28',15000,'Active',1),(104,'ATM System', '2024-06-03', 120000, 'Completed',3);

mysql> select * from project;

pno	pname	start_date	budget	status	dno
101	Student Management	2023-01-01	20000	Progressive	2
102	Currency Converter	2024-11-21	5000	Completed	4
103	Snake Game	2024-07-28	15000	Active	1
104	ATM System	2024-06-03	120000	Completed	3

1) Drop loc column from department table.

mysql> Alter table department drop loc;

mysql> desc department;

Field	Type	Null	Key	Default	Extra
dno	int	NO	PRI	NULL	
dname	varchar(100)	YES		NULL	
HOD	varchar(100)	YES		NULL	

2) Display the details of projects whose start_date is before one month and status is "Progressive" .

mysql> Select * from project where start_date<CURRENT_DATE - INTERVAL 1 MONTH and status='Progressive';

pno	pname	start_date	budget	status	dno
101	Student Management	2023-01-01	20000	Progressive	2

3) Display the names of projects and departments who are working on projects whose status is 'Completed'.

mysql> select pname,dname from project,department where project.dno=department.dno and project.status='Completed';

pname	dname
Currency Converter	Statistic
ATM System	Marketing

4) Display total budget of each department.

mysql> Select sum(budget),dname from project,department where project.dno=department.dno group by dname;

sum(budget)	dname
20000	Development
5000	Statistic
15000	Research
120000	Marketing

5) Display incomplete projects of each department.

mysql> select pname,dname from project,department where project.dno=department.dno and status IN('Progressive','Active') group by dname,pname;

pname	dname
Student Management	Development
Snake Game	Research

6) Display all project working under 'Mr.Desai'.

mysql> select pname from project,department where project.dno=department.dno and department.HOD='Mr.Desai';

pname
Snake Game

7) Display department wise HOD.

mysql> select HOD,dname from project,department where project.dno=department.dno group by dname,HOD;

HOD	dname
Mr.Sham	Development
Mr.Shah	Statistic
Mr.Desai	Research
Mr.Yash	Marketing

8) Display project details where the project name starts with A and whose budget is >10000 in descending order.

mysql> Select * from project where pname Like 'A%' and budget>10000 order by pno desc;

pno	pname	start_date	budget	status	dno
104	ATM System	2024-06-03	120000	Completed	3

9) Display the project details which have the highest budget.

mysql> select * from project where budget=(select Max(budget) from project);

pno	pname	start_date	budget	status	dno
104	ATM System	2024-06-03	120000	Completed	3