DBMS

LAB SHEET – 3

ROLL NO – 20BCS077

AIM:-

The Aim of this project was to create tables, applying primary key to each table, declaring foreign keys, relating tables, adding tuples and writing a single SQL query for each of the following based on the database.

EXPERIMENTS:-

- **Creating a database named Assignment_3.**

```
create database Assignment_3;
USEAssignment_3;
```

- **Creating Employee, Department, Project, Workson tables with primary key.**

```
create table Assignment_3.Employee(
EmployeeID numeric(9) primary key,
firstname varchar(10),
lastname varchar(20),
deptcode char(5),
salary numeric(9,2));
```

```
create table Assignment_3.Department(
code char(5) primary key,
name varchar(30),
managerID numeric(9),
subdeptof char(5));
```

```
create table Assignment_3.Project(
ProjectID char(8) primary key,
deptcode char(5),
description varchar(200),
startdate date,
stopdate date,
revenue numeric(12,2));


create table Assignment_3.Workson(
EmployeeID numeric(9),
projectID char(8),
assignedtime numeric(3,2));
```

- **Adding foreign keys between Employees and Department.**

```
alter table Assignment_3.Employee
add foreign key (deptcode)
references Department(code);

alter table Assignment_3.Department
add foreign key (managerID)
references Employee(EmployeeID),
add foreign key (subdeptof)
references Department(code);
```

- **Adding foreign keys between Workson and Employees.**

```
alter table Assignment_3.Workson
add foreign key (EmployeeID)
references Employee(EmployeeID),
add foreign key (projectID)
references Project(ProjectID);
```

- **Adding foreign keys between Projects and Department.**

```
alter table Assignment_3.Project
add foreign key (deptcode)
references Department(code);
```

- **Entering 8 rows of data in each table.**

```
insert into Employee
(EmployeeID, firstname, lastname, salary)
values
(1, 'Narendra',  'Gandhi',  40000),
```

(2, 'Rahul', 'Kejriwal', 50000),
(3, 'Arvind', 'Yadav', 34500),
(4, 'Akhilesh', 'Modi', 100000),
(5, 'Joe', 'Clint', 55000),
(6, 'Taylor', 'Swift', 70000),
(7, 'Camila', 'Cabello', 48500),
(8, 'Hailee', 'Steinfeld', 160000);

insert into Department
(Code, name, managerID, subdeptof)
values
('GEM', 'General Management', 1, 'GEM'),
('MKT', 'Marketing', 2, 'GEM'),
('OPT', 'Operations', 3, 'GEM'),
('FIN', 'Finance', 4, 'GEM'),
('HRD', 'Human Resource', 5, 'GEM'),
('PUR', 'Purchasing', 6, 'GEM'),
('PRE', 'Public Relations', 7, 'GEM'),
('SAL', 'Sales', 8, 'GEM');

insert into Project
(ProjectID, deptcode, description, startdate, stopdate, revenue)
values
('H1', 'HRD', 'Policies, procedures, safety rules and other important information design to overcome language and cultural barriers', '2021-10-26', '2022-03-14', 74700),
('M1', 'MKT', 'A study on the factors affecting dealer performance to evolve a strategy for increasing market share', '2022-01-29', '2023-03-29', 50000),
('M2', 'MKT', 'Emergence of Internet Marketing -Origins, Needs, Challenges and Opportunities', '2021-12-05', '2022-11-02', 34500),
('S1', 'SAL', 'IMPACT OF CELEBRITY ENDORSEMENT ON CONSUMER BEHAVIOR AND SALES VOLUME OF AN ORGANIZATION', '2022-02-13', '2023-06-12', 60000),
('S2', 'SAL', 'DIGITAL MARKETING AS A KEY DRIVER OF SALES IMPROVEMENT AMONG SMALL AND MEDIUM SCALE ENTERPRISES', '2021-09-30', '2022-04-07', 55000),
('P1', 'PUR', 'To provide quality services to business joining hands with new and emerging technologies.', '2021-07-16', '2022-09-28', 70000),
('H2', 'HRD', 'A study on identification of non performing dealers and measures to be taken to convert them into performing dealers', '2022-01-01', '2023-06-04', 148500),
('F1', 'FIN', 'Investment awareness in financial asset and preference of financial intermediaries in equities trading', '2021-11-11', '2022-08-22', 750000);

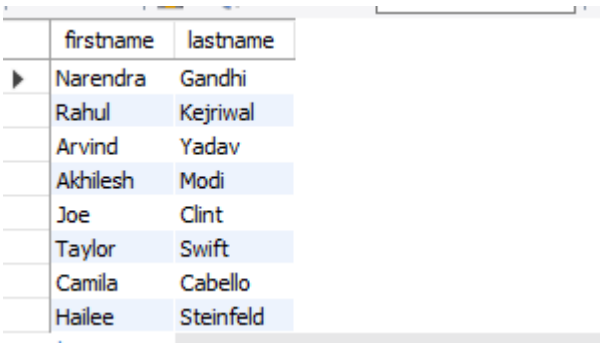
```
insert into Workson
(EmployeeID, projectid, assignedtime)
values
(1, 'H1', 1.32),
(2, 'M1', 4.55),
(3, 'M2', 3.00),
(4, 'S1', 2.15),
(5, 'S2', 8.22),
(6, 'P1', 9.30),
(7, 'H2', 6.20),
(8, 'F1', 5.45);
```

```
update Employee
set deptcode='GEM' where EmployeeID=1;
update Employee
set deptcode='MKT' where EmployeeID=2;
update Employee
set deptcode='OPT' where EmployeeID=3;
update Employee
set deptcode='FIN' where EmployeeID=4;
update Employee
set deptcode='HRD' where EmployeeID=5;
update Employee
set deptcode='PUR' where EmployeeID=6;
update Employee
set deptcode='PRE' where EmployeeID=7;
update Employee
set deptcode='SAL' where EmployeeID=8;
```

EXERCISE:

1. **List the first name and last of all employees.**

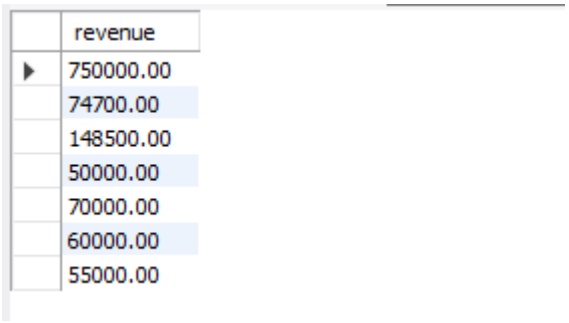
```
select firstname, lastname from Employee
```



firstname	lastname
Narendra	Gandhi
Rahul	Kejriwal
Arvind	Yadav
Akhilesh	Modi
Joe	Clint
Taylor	Swift
Camila	Cabello
Hailee	Steinfeld

2. **List all attributes of the projects with revenue greater than $40,000.**

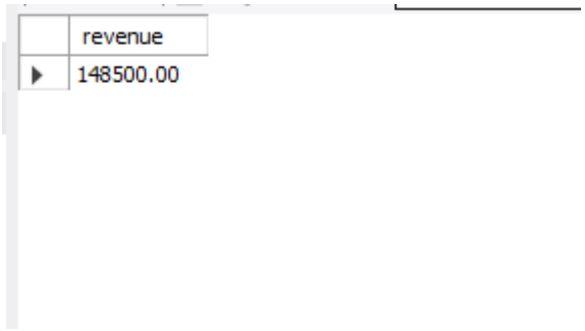
select revenue from Project where revenue>40000;



revenue
750000.00
74700.00
148500.00
50000.00
70000.00
60000.00
55000.00

3. **List the department codes of the projects with revenue between $100,000 and $150,000.**

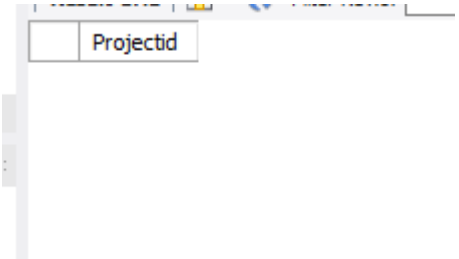
select revenue from Project where (revenue>100000 and revenue<150000);



revenue
148500.00

4. **List the project IDs for the projects that started on or before July 1, 2004.**

select Projectid from Project where startdate <= '2004-07-01';



Projectid

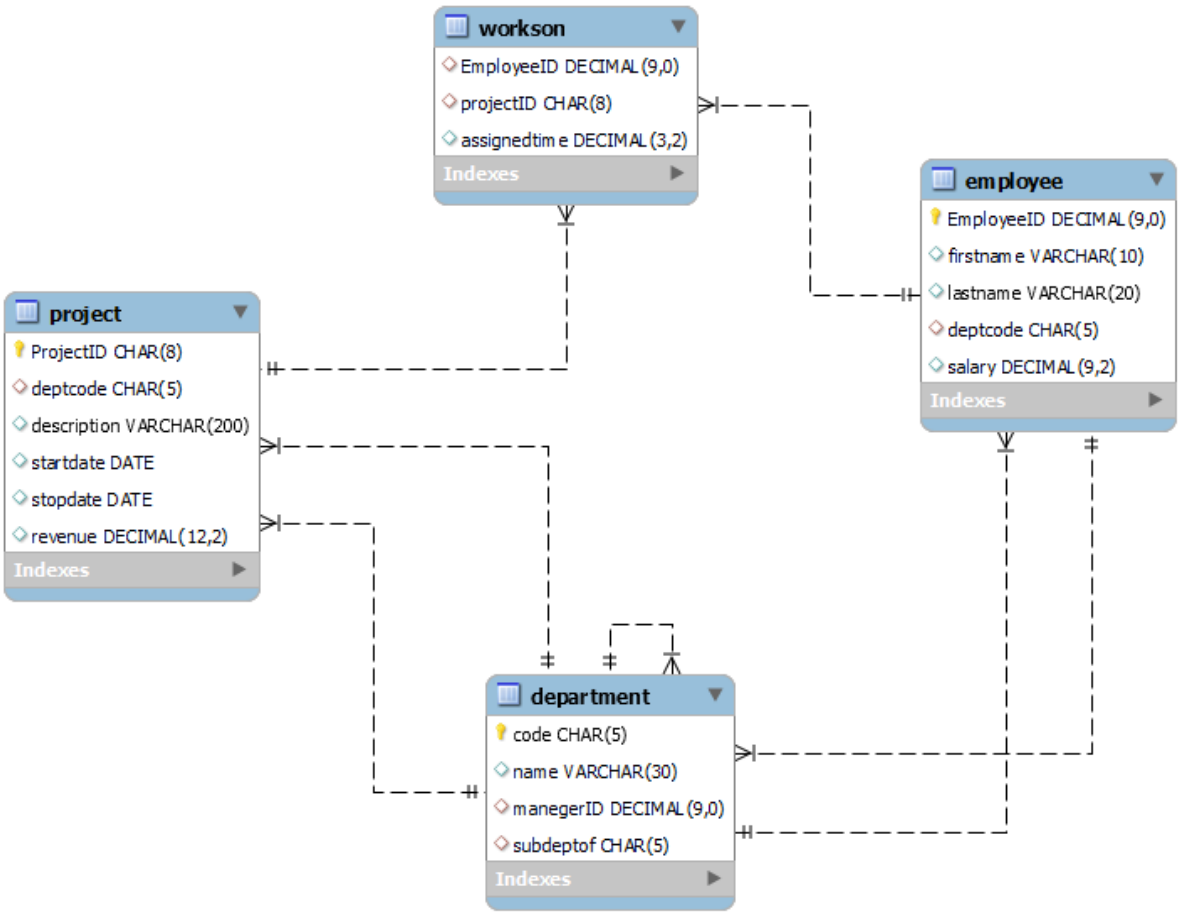
5. **List all the department codes assigned to a project. Remove all duplicates.**

select distinct deptcode from Project;

deptcode
FIN
HRD
MKT
PUR
SAL

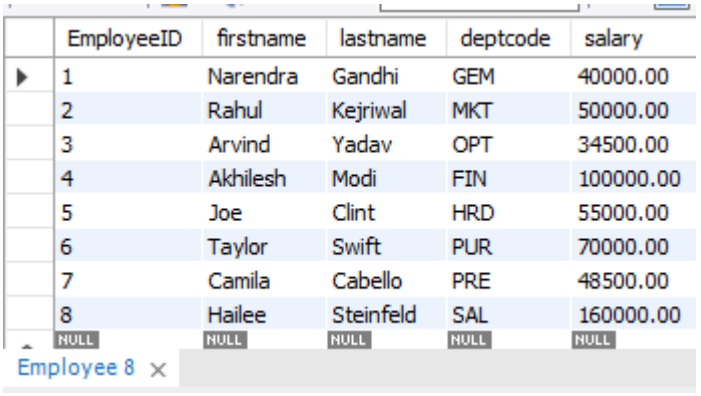
RESULT:

1. Schema Diagram



2. Tables

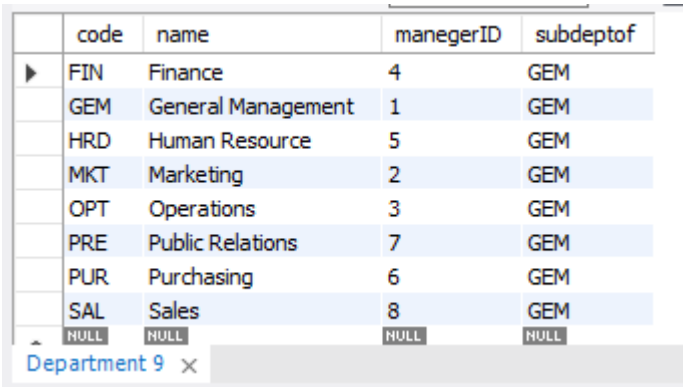
- **Employee**



EmployeeID	firstname	lastname	deptcode	salary
1	Narendra	Gandhi	GEM	40000.00
2	Rahul	Kejriwal	MKT	50000.00
3	Arvind	Yadav	OPT	34500.00
4	Akhilesh	Modi	FIN	100000.00
5	Joe	Clint	HRD	55000.00
6	Taylor	Swift	PUR	70000.00
7	Camila	Cabello	PRE	48500.00
8	Hailee	Steinfeld	SAL	160000.00
NULL	NULL	NULL	NULL	NULL

Employee 8

- **Department**



code	name	manegerID	subdeptof
FIN	Finance	4	GEM
GEM	General Management	1	GEM
HRD	Human Resource	5	GEM
MKT	Marketing	2	GEM
OPT	Operations	3	GEM
PRE	Public Relations	7	GEM
PUR	Purchasing	6	GEM
SAL	Sales	8	GEM
NULL	NULL	NULL	NULL

Department 9

- **Project**

ProjectID	deptcode	description	startdate	stopdate	revenue
F1	FIN	Investment awareness in financial asset and pr...	2021-11-11	2022-08-22	750000.00
H1	HRD	Policies, procedures, safety rules and other imp...	2021-10-26	2022-03-14	74700.00
H2	HRD	A study on identification of non performing deal...	2022-01-01	2023-06-04	148500.00
M1	MKT	A study on the factors affecting dealer perform...	2022-01-29	2023-03-29	50000.00
M2	MKT	Emergence of Internet Marketing -Origins, Nee...	2021-12-05	2022-11-02	34500.00
P1	PUR	To provide quality services to business joinING ...	2021-07-16	2022-09-28	70000.00
S1	SAL	IMPACT OF CELEBRITY ENDORSEMENT ON CO...	2022-02-13	2023-06-12	60000.00
S2	SAL	DIGITAL MARKETING AS A KEY DRIVER OF SAL...	2021-09-30	2022-04-07	55000.00
NULL	NULL	NULL	NULL	NULL	NULL

Project 10 ×

- **Workson**

EmployeeID	projectID	assignedtime
1	H1	1.32
2	M1	4.55
3	M2	3.00
4	S1	2.15
5	S2	8.22
6	P1	9.30
7	H2	6.20
8	F1	5.45

Workson 11 ×

CONCLUSION:

SQL databases are known as relational databases, and have a table-based data structure, with a strict, predefined schema required to be inserted in the form of tables with the help of some commands. Through these commands one can create tables, and in each table, one can declare some entities. We can have entities named primary keys which are used to identify rows/tuples uniquely and foreign keys which are used to relate two different tables. These two keys can have constraints with or without constraint names. The entities can also be added, modified, or dropped even after tables are declared. With the 'insert' command we can add the tuples/rows with carefully chosen primary and foreign keys. The 'select' statement is used to select data from a database with or without conditions which gives us a better option to render data . The data returned is stored in a result table, called the result-set.