DBMS PROJECT
ELECTRONIC COMPANYDATA BASE:

Designed By:

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INTRODUCTION:

The **electronics industry** emerged in the 20th century and is today one of the largest global industries.
Contemporary society uses a vast array of electronic devices built in automated or semi-automated factories operated by the industry.

NEED OF DATA BASE FOR ELECTRONIC DATA BASE:

Electronic companies play an important role in our day to day life and they sell and produce large numbers of products everyday to various customers and Distributors and to store this information simple file system is not efficient so Data Base is used to Store and retrieve information whenever required. The background of this project is to provide an easy and efficient database that stores the information of customers and products and how they are related to each other etc. The employee has his details stored and other details such as his department ,contact number and salary etc. The customer has his details stored and his premise and meters and equipment he has in the premise are stored and based on his consumption billing is generated.

Assumptions:

This company produces vast variety of products from Headphones to laptop .

ENTITIES AND RELATIONSHIPS: -

1) **DEPARTMENT:**

This entity stores the info of employees with their respective departments

- Dept_id : Stores department Ids of the company
- Dept_Name : Stores Department name

2) **Employee:**

This entity stores the info of employees .

- Emp_id : Gives ID of the Employee
- Name: Employee's Name
- Address : Employee's city
- Salary: Employee's Salary
- DOJ: Date of joining of the Employee

3) **Retailer:**

This entity stores the information of the Retailer. Retailer acts as Direct link between Distributor and Customer .

- Reatiler_id : Retailer's id
- Addrs : Address of the Retailer
- Retailer_Name: Name of the Retailer
- Cell No: Retailer's Contact Number

4) **Customer:**

This entity stores basic information of the customer like date of purchase, product's details and retailer's details.

- Customer_id: Customer's id
- Customer_Name: Customer's Name
- Transaction_id : Customer's Transaction details
- DOP: date of purchase
- Phone_no: Customers Contact details
- Area: locality of customer
- City: Customer's city
- Pincode: Zip code

5) Product:

This entity stores product details

- Product_id : unique id given to the Product
- Warranty : Warranty of the product in years
- Price: Price of the product
- Type_of_device: Type of product like laptop,headphone etc.
- Quantiy: quantity of the products
- Model name: Model name of the specific device

6) Product_Review:

This entity stores the review given by the customer for the product.

- Response : Response of the customer
- Rating : Rating given by the customer for the product out of five.

7) **Distributor:**

This entity stores the information of the Distributor . Distributor is one who buys products from the company in bulk and sells to different retailers

- Distributor_id:Unique Id of the Distributor
- Purchase_id: Unique id given by company to Distributor at the time of purchase.
- Quantiy: Quantity of the products
- Device_price: the lowered price at which distributor buys from company
- Purchase_price: total price i.e Quantity multiplied by Device_price

8) **Complaints:**

This entity stores the complaints given by cutomers .

- Complaint_id: Unique ID given by Company to the complaints
- Product_id: Id of the product
- Problem: Problem of the Customer
- Emp_id: Id of employee who receives the complaint

9) **Contacts:** Because mobile number is an multi-valued attribute this table is created to store the phone numbers of the employees

- Emp_id: Id of the Employee
- Contact_number: Phone number of the Employee.

10) Distributed_to:

Because of M to N relationship between Product and Distributor this table is created

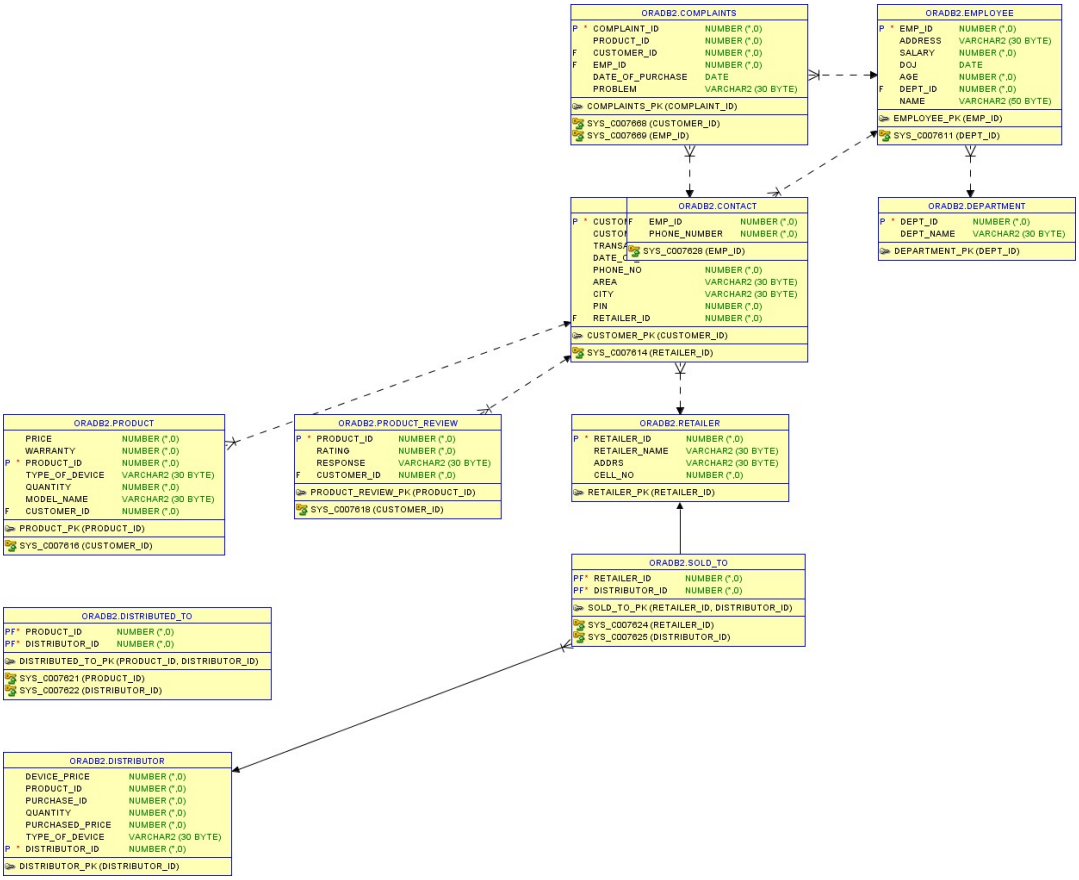
- Product_id : Id of the Product
- Distributor_id: Distributor's Id

11) Sold_to:

Because of M to N relationship between Distributor and Retailer this table is created

- Distributor_id: Distributor's Id
- Retailer_id : Retailer's Id

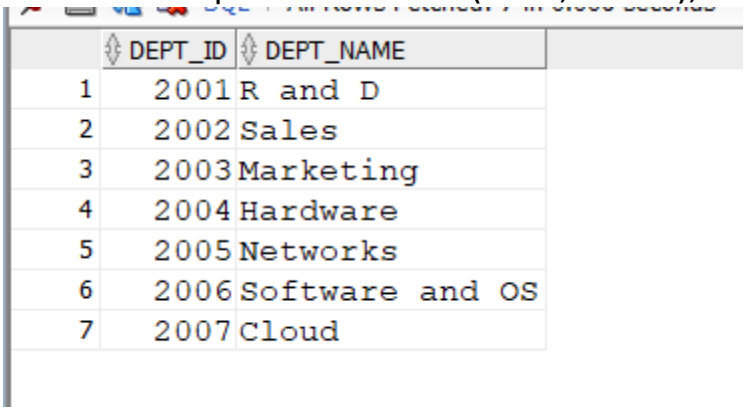
ER Diagram(Relational Schema):



Creation Of Tables:

1.

```
CREATE Table Department
(
Dept_id int, Dept_name varchar(30),
Primary key(Dept_id)
);
insert into department values(2001,'R and D');
insert into department values(2002,'Sales');
insert into department values(2003,'Marketing');
insert into department values(2004,'Hardware');
insert into department values(2005,'Networks');
insert into department values(2006,'Software and OS');
insert into department values(2007,'Cloud');
```



	DEPT_ID	DEPT_NAME
1	2001	R and D
2	2002	Sales
3	2003	Marketing
4	2004	Hardware
5	2005	Networks
6	2006	Software and OS
7	2007	Cloud

2.

```
CREATE TABLE Employee
(
Emp_id int,
Address varchar(30),
salary int, DOJ date,
age int, Dept_id int,
Name varchar(20), Primary key(Emp_id),
FOREIGN key(Dept_id) references Department(Dept_id)
);
insert into employee
values(1001,'Hyderabad',20000,'10-01-2020',25,'2001','Kishore');
insert into employee
values(1002,'Ranchi',25000,'10-01-2005',35,'2001','Mahi');
insert into employee
values(1003,'Delhi',27000,'10-01-2010',30,'2002','virat');
insert into employee
values(1004,'Hyderabad',22000,'10-01-2015',31,'2003','Rohith');
```

```
insert into employee
values(1005,'Hyderabad',23000,'16-01-2019',25,'2002','Rahul');
insert into employee
values(1006,'karimnagar',20200,'10-01-2020',22,'2006','Abhishek');
insert into employee
values(1007,'kazipet',20500,'10-01-2002',39,'2007','Chahal');
insert into employee
values(1008,'Bangalore',20500,'10-02-2020',30,'2005','Jaswanth');
insert into employee
values(1009,'guargaon',30000,'10-01-2002',38,'2004','Rahul');
insert into employee
values(1010,'Chennai',20500,'25-01-2020',27,'2007','Ramesh')
```

	EMP_ID	ADDRESS	SALARY	DOJ	AGE	DEPT_ID	NAME
1	1001	Hyderabad	20000	10-01-20	25	2001	Kishore
2	1002	Ranchi	25000	10-01-05	35	2001	Mahi
3	1003	Delhi	27000	10-01-10	30	2002	virat
4	1004	Hyderabad	22000	10-01-15	31	2003	Rohith
5	1005	Hyderabad	23000	16-01-19	25	2002	Rahul
6	1006	karimnagar	20200	10-01-20	22	2006	Abhishek
7	1007	kazipet	20500	10-01-02	39	2007	Chahal
8	1008	Bangalore	20500	10-02-20	30	2005	Jaswanth
9	1009	guargaon	30000	10-01-02	38	2004	Rahul
10	1010	Chennai	20500	25-01-20	27	2007	Ramesh

3.

```
CREATE Table Retailer
(
Retailer_Id int,
Retailer_name varchar(30),
Addrs varchar(30),
Cell_No  int,
Primary Key(Retailer_Id)
);
insert into Retailer values(6001,'Reliance','Kukutpally',9112233445);
insert into Retailer values(6002,'Rama Roa','Hyderabad',9221133554);
insert into Retailer values(6003,'Navtha','Mumbai',9331122446);
insert into Retailer values(6004,'Jk Iyer','Chennai',9001133447);
insert  into Retailer values(6005,'Reliance','Karnataka',9123456789);
insert into Retailer values(6006,'laxmi ltd','Hyderabad',9112233449);
insert into Retailer values(6007,'Sharwana','chennai',9112287698);
```

insert into Retailer values(6008,'Navayuga','mangalore',9112233448);
insert into Retailer values(6009,'Sharmas','noida',9112233489);
insert into Retailer values(6010,'Modern','bangalore',9112233478);
insert into Retailer values(6011,'Iyers','cochi',9390012802);

	RETAILER_ID	RETAILER_NAME	ADDRS	CELL_NO
1	6001	Reliance	Kukutpally	9112233445
2	6002	Rama Roa	Hyderabad	9221133554
3	6003	Navtha	Mumbai	9331122446
4	6004	Jk Iyer	Chennai	9001133447
5	6005	Reliance	Karnataka	9123456789
6	6006	laxmi ltd	Hyderabad	9112233449
7	6007	Sharwana	chennai	9112287698
8	6008	Navayuga	mangalore	9112233448
9	6009	Sharmas	noida	9112233489
10	6010	Modern	bangalore	9112233478
11	6011	Iyers	cochi	9390012802

4.

```
Create Table Customer
(
Customer_id  Int,
Customer_name varchar(30),
Transaction_id int,
Date_of_purchase Date,
Phone_no int,
Area varchar(30),
city varchar(30),
pin int,
Retailer_Id int,
Primary key(Customer_id),
Foreign key (Retailer_Id) References Retailer(Retailer_Id)
);
insert into customer
values(40001,'Sanju',1110001001,'01-01-2021',9390012802,'Kukatpally',
'Hyderabad',500037,6001);
insert into customer values(40002,'Surya
Kumar',1110001002,'02-09-2020',9390012803,'South
Bombay','Mumbai',40007,6003);
insert into customer
values(40003,'Devdutt',1110001003,'01-02-2021',9390012804,'Lal
Bagh','Bangalore',560008,6005);
```

```
insert into customer
values(40004,'Sreesanth',1110001004,'01-05-2019',9390012805,'Cochi','
Trivandrum',685004,6011);
insert into customer
values(40005,'Rahul',1110001005,'11-06-2020',9390012806,'Gandhi
Nagar','Mangalore',5600003,6008);
insert into customer
values(40006,'ravi',1110001006,'02-02-2021',9390012888,'anna
nagar','chennai',500072,6005);
insert into customer
values(40007,'ramu',1110001007,'03-01-2021',9390012889,'udipi','man
galore',500042,6006);
insert into customer
values(40008,'rahul',1110001008,'01-04-2021',9390012890,'sector374','
noida',500018,6007);
insert into customer
values(40009,'Sashi',1110001009,'05-01-2021',9390012891,'t
nagar','chennai',500135,6005);
insert into customer
values(40010,'Saaho',1110001010,'01-06-2021',9390012892,'erode','coc
hi',500056,6011);
```

	CUSTOMER_ID	CUSTOMER_NAME	TRANSACTION_ID	DATE_OF_PURCHASE	PHONE_NO	AREA	CITY	PIN	RETAILER_ID
1	40001	Sanju	1110001001	01-01-21	9390012802	Kukatpally	Hyderabad	500037	6001
2	40002	Surya Kumar	1110001002	02-09-20	9390012803	South Bombay	Mumbai	40007	6003
3	40003	Devdutt	1110001003	01-02-21	9390012804	Lal Bagh	Bangalore	560008	6005
4	40004	Sreesanth	1110001004	01-05-19	9390012805	Cochi	Trivandrum	685004	6011
5	40005	Rahul	1110001005	11-06-20	9390012806	Gandhi Nagar	Mangalore	5600003	6008
6	40006	ravi	1110001006	02-02-21	9390012888	anna nagar	chennai	500072	6005
7	40007	ramu	1110001007	03-01-21	9390012889	udipi	mangalore	500042	6006
8	40008	rahul	1110001008	01-04-21	9390012890	sector374	noida	500018	6007
9	40009	Sashi	1110001009	05-01-21	9390012891	t nagar	chennai	500135	6005
10	40010	Saaho	1110001010	01-06-21	9390012892	erode	cochi	500056	6011

5.

```
Create table product
(
price int,
warranty int,
product_id int,
type_of_device varchar(30),
quantity int,
model_name varchar(30),
customer_id int,
```

```
primary key(product_id),
foreign key (Customer_id) references Customer(Customer_id)
);
insert into Product values(100000,5,70001,'Laptop',1,'Apple L14',40001);
insert into Product values(100000,5,70002,'ipad',1,'Apple 10',40002);
insert into Product values(5000,5,70003,'ipod',2,'Apple 19',40003);
insert into Product values(45000,5,70004,'android mobile',3,'Apple
m14',40004);
insert into Product values(5000,5,70005,'headphone',1,'Apple
r14',40005);
insert into Product values(55000,5,70008,'mobile',1,'12 mini',40006);
insert into Product values(60000,3,70006,'Laptop',1,'m1 air',40007);
insert into Product values(70000,5,70007,'airpods',1,'pro',40008);
insert into Product values(80000,2,70009,'smart
assistant',1,'homepodmini',40009);
insert into Product
values(100000,5,70010,'earphones',1,'appleearphones',40010);
```

	PRICE	WARRANTY	PRODUCT_ID	TYPE_OF_DEVICE	QUANTITY	MODEL_NAME	CUSTOMER_ID
1	100000	5	70001	Laptop	1	Apple L14	40001
2	100000	5	70002	ipad	1	Apple 10	40002
3	5000	5	70003	ipod	2	Apple 19	40003
4	45000	5	70004	android mobile	3	Apple m14	40004
5	5000	5	70005	headphone	1	Apple r14	40005
6	55000	5	70008	mobile	1	12 mini	40006
7	60000	3	70006	Laptop	1	m1 air	40007
8	70000	5	70007	airpods	1	pro	40008
9	80000	2	70009	smart assistant	1	homepodmini	40009
10	100000	5	70010	earphones	1	appleearphones	40010

6.

```
CREATE Table Product_review
(
Product_id int,
Rating int,
Response varchar(30),
Customer_id int,
Primary key(Product_id),
Foreign key(Customer_id) references Customer(Customer_id)
);
insert into product_review values(70001,3,'good',40001);
insert into product_review values(70002,5,'Excellent',40002);
insert into product_review values(70003,3,'Average',40003);
insert into product_review values(70004,5,'Satisfying',40004);
insert into product_review values(70005,3,'good',40005);
```

```
insert into product_review values(70006,5,'excellent',40006);
insert into product_review values(70007,4,'very good',40007);
insert into product_review values(70008,2,'good',40008);
insert into product_review values(70009,4,'ok',40009);
insert into product_review values(70010,1,'verybad',40010);
```

	PRODUCT_ID	RATING	RESPONSE	CUSTOMER_ID
1	70001	3	good	40001
2	70002	5	Excellent	40002
3	70003	3	Average	40003
4	70004	5	Satisfying	40004
5	70005	3	good	40005
6	70006	5	excellent	40006
7	70007	4	very good	40007
8	70008	2	good	40008
9	70009	4	ok	40009
10	70010	1	verybad	40010

7.

```
CREATE TABLE Distributor
(
Device_price  int,
Product_id int,
Purchase_id int,
Quantity int,
Purchased_price int,
Type_of_Device Varchar(30),
Distributor_id int,
Primary key(Distributor_id)
);
insert into Distributor
values(90000,70001,2111001001,100,9000000,'Laptop',80001);
insert into Distributor
values(95000,70001,2111001002,100,9500000,'Laptop',80002);
insert into Distributor
values(90000,70002,2111001003,100,9000000,'ipad',80003);
insert into Distributor
values(4500,70003,2111001004,1000,4500000,'ipod',80004);
```

```
insert into Distributor
values(3500,70003,2111001005,1000,3500000,'ipod',80005);
insert into Distributor
values(40000,70004,2111001006,100,4000000,'Android mobile',80006);
insert into Distributor
values(50000,70005,2111001007,100,5000000,'Headphone',80007);
insert into Distributor
values(45000,70005,2111001008,100,4500000,'Headphone',80008);
insert into Distributor
values(50000,70006,2111001009,100,5000000,'MOBILE',80009);
insert into Distributor
values(55000,70007,2111001010,100,5500000,'Laptop',80010);
insert into Distributor
values(65000,70008,2111001011,100,6500000,'Airpods',80011);
insert into Distributor
values(75000,70009,2111001012,100,7500000,'Laptop',80012);
insert into Distributor
values(95000,70010,2111001013,100,9500000,'Laptop',80013);
insert into Distributor
values(90000,70010,2111001014,100,9000000,'Laptop',80014);
```

	DEVICE_PRICE	PRODUCT_ID	PURCHASE_ID	QUANTITY	PURCHASED_PRICE	TYPE_OF_DEVICE	DISTRIBUTOR_ID
1	90000	70001	2111001001	100	9000000	Laptop	80001
2	95000	70001	2111001002	100	9500000	Laptop	80002
3	90000	70002	2111001003	100	9000000	ipad	80003
4	4500	70003	2111001004	1000	4500000	ipod	80004
5	3500	70003	2111001005	1000	3500000	ipod	80005
6	40000	70004	2111001006	100	4000000	Android mobile	80006
7	50000	70005	2111001007	100	5000000	Headphone	80007
8	45000	70005	2111001008	100	4500000	Headphone	80008
9	50000	70006	2111001009	100	5000000	MOBILE	80009
10	55000	70007	2111001010	100	5500000	Laptop	80010
11	65000	70008	2111001011	100	6500000	Airpods	80011
12	75000	70009	2111001012	100	7500000	Laptop	80012
13	95000	70010	2111001013	100	9500000	Laptop	80013
14	90000	70010	2111001014	100	9000000	Laptop	80014

8.

```
Create Table Distributed_to(
Product_id int,
Distributor_id int,
Primary key(Product_id,Distributor_id),
Foreign key(Product_id) REFERENCES Product(Product_id),
FOREIGN key(Distributor_id) REFERENCES Distributor(Distributor_id)
);
insert into Distributed_to values(70001,80001);
insert into Distributed_to values(70001,80002);
insert into Distributed_to values(70002,80003);
```

```
insert into Distributed_to values(70003,80004);
insert into Distributed_to values(70003,80005);
insert into Distributed_to values(70004,80006);
insert into Distributed_to values(70005,80007);
insert into Distributed_to values(70005,80008);
insert into Distributed_to values(70006,80009);
insert into Distributed_to values(70007,80010);
insert into Distributed_to values(70008,80011);
insert into Distributed_to values(70009,80012);
insert into Distributed_to values(70010,80013);
insert into Distributed_to values(70010,80014);
```

	PRODUCT_ID	DISTRIBUTOR_ID
1	70001	80001
2	70001	80002
3	70002	80003
4	70003	80004
5	70003	80005
6	70004	80006
7	70005	80007
8	70005	80008
9	70006	80009
10	70007	80010
11	70008	80011
12	70009	80012
13	70010	80013
14	70010	80014

9.

```
CREATE TABLE Sold_to(
Retailer_id int,
Distributor_id int,
Primary key(Retailer_id,Distributor_id),
FOREIGN key(Retailer_id) REFERENCES Retailer(Retailer_id),
FOREIGN key(Distributor_id) REFERENCES Distributor(Distributor_id)
);
INSERT INTO Sold_to VALUES(6001,80001);
INSERT INTO Sold_to VALUES(6002,80002);
INSERT INTO Sold_to VALUES(6002,80003);
INSERT INTO Sold_to VALUES(6003,80004);
INSERT INTO Sold_to VALUES(6004,80005);
INSERT INTO Sold_to VALUES(6004,80006);
INSERT INTO Sold_to VALUES(6005,80007);
```

```
INSERT INTO Sold_to VALUES(6006,80008);
INSERT INTO Sold_to VALUES(6007,80009);
INSERT INTO Sold_to VALUES(6007,80010);
INSERT INTO Sold_to VALUES(6008,80011);
INSERT INTO Sold_to VALUES(6008,80012);
INSERT INTO Sold_to VALUES(6009,80013);
INSERT INTO Sold_to VALUES(6010,80014);
```

	RETAILER_ID	DISTRIBUTOR_ID
1	6001	80001
2	6002	80002
3	6002	80003
4	6003	80004
5	6004	80005
6	6004	80006
7	6005	80007
8	6006	80008
9	6007	80009
10	6007	80010
11	6008	80011
12	6008	80012
13	6009	80013
14	6010	80014

10.

```
Create Table Complaints(
Complaint_id int,
Product_id int,
Customer_id int,
Date_of_purchase date,
PRIMARY key(Complaint_id),
FOREIGN key(Customer_id) REFERENCES Customer(Customer_id)
);
insert into complaints
values(90001,70004,40004,'01-05-19',1005,'Battery Problem');
insert into complaints
values(90002,70002,40002,1003,'02-09-20','Screen  Problem');
insert into complaints
values(90003,70007,40007,1003,'03-01-21','Speaker  Problem');
```

insert into complaints values(90004,70010,40010 ,1005,'01-06-21',
1,'Battery Problem');

	COMPLAINT_ID	PRODUCT_ID	CUSTOMER_ID	EMP_ID	DATE_OF_PURCHASE	PROBLEM
1	90001	70004	40004	1005	01-05-19	Battery Problem
2	90002	70002	40002	1003	02-09-20	Screen Problem
3	90003	70007	40007	1003	03-01-21	Speaker Problem
4	90004	70010	40010	1005	01-06-21	Battery Problem

11.

```
Create Table Contact
(
Emp_id int,
Phone_number int,
Foreign key(Emp_id) References Employee(Emp_id)
);
insert into Contact values(1001,9490012802);
insert into Contact values(1002,9390403001);
insert into Contact values(1002,9390403002);
insert into Contact values(1003,9390403003);
insert into Contact values(1004,9390403004);
insert into Contact values(1005,9390403005);
insert into Contact values(1006,9390403006);
insert into Contact values(1006,9390403020);
insert into Contact values(1007,9390403018);
insert into Contact values(1008,9390403015);
insert into Contact values(1009,9390403013);
insert into Contact values(1010,9390403012);
```

	EMP_ID	PHONE_NUMBER
1	1001	9490012802
2	1002	9390403001
3	1002	9390403002
4	1003	9390403003
5	1004	9390403004
6	1005	9390403005
7	1006	9390403006
8	1006	9390403020
9	1007	9390403018
10	1008	9390403015
11	1009	9390403013
12	1010	9390403012

SOME EXAMPLE QUERIES PERFROMED ON THE DATABASE:

1)TO FIND NAMES OF CUSTOMERS FROM CHENNAI.

QUERY:

select Customer_name from Customer where City='chennai';

OUTPUT:

	CUSTOMER_NAME
1	ravi
2	Sashi

2)TO FIND DEVICE PRICE AND IDS OF DISTRIBUTOR WHO DISTRIBUTE LAPTOPS:

QUERY:

select Device_price,Distributor_id from Distributor where Type_of_device='Laptop';

OUTPUT:

	DEVICE_PRICE	DISTRIBUTOR_ID
1	90000	80001
2	95000	80002
3	55000	80010
4	75000	80012
5	95000	80013
6	90000	80014

3)FIND OUT CUSTOMER NAMES WHO HAVE BATTERY PROBLEMS:

QUERY:

```
SELECT C.CUSTOMER_NAME FROM CUSTOMER
C,COMPLAINTS CP WHERE WHERE
C.CUSTOMER_ID=CP.CUSTOMER_ID AND
CP.PROBLEM='BATTERY PROBLEM';
```

	CUSTOMER_NAME
1	Sreesanth
2	Saaho

4) **SELECT NAMES OF EMPLOYEES WHO WORK IN RESEARCH AND DEVELOPMENT DEPARTMENT:**

QUERY:

```
SELECT E.NAME  FROM EMPLOYEE E,DEPARTMENT D
WHERE E.DEPT_ID=D.DEPT_ID AND DEPT_NAME='R AND
D';
```

	NAME
1	Kishore
2	Mahi

5) **PRINT RETAILERS WHO ARE FROM HYDERABAD:**

QUERY:

```
Select distinct(R.retailer_name) from Distributor D,Product
P,Retailer R,sold_to S
where S.Retailer_id=R.Retailer_id and
D.Product_id=p.product_id     and r.addrs='Hyderabad';
```

OUTPUT:

	RETAILER_NAME
1	Rama Roa
2	laxmi ltd

Conclusion:-

We have built a fully functional Data base management model of an electronic company which stores information related to their employees, products, ditsributors, retailers and cutomers.