TATA ELECTRIC CAR MANAGEMENT SYSTEM

TATA

ER-DIAGRAM OF TATA ELECTRIC CAR MANAGEMENT SYSTEM

PRODUCT

ID

Product_Name

Price

Mileage

SALES

ID

Product_Name

Cust_Id

e_id

EMPLOYEE

ID

Name

City

Email

Phone

Salary

D_Id

TATA ELECTRIC CAR MANAGEMENT

CUSTOMER

ID

F_Name

L_Name

City

Email

Phone

Finance

P_Id

DEPARTMENT

ID

D_Name

Working_Employee

Mileage
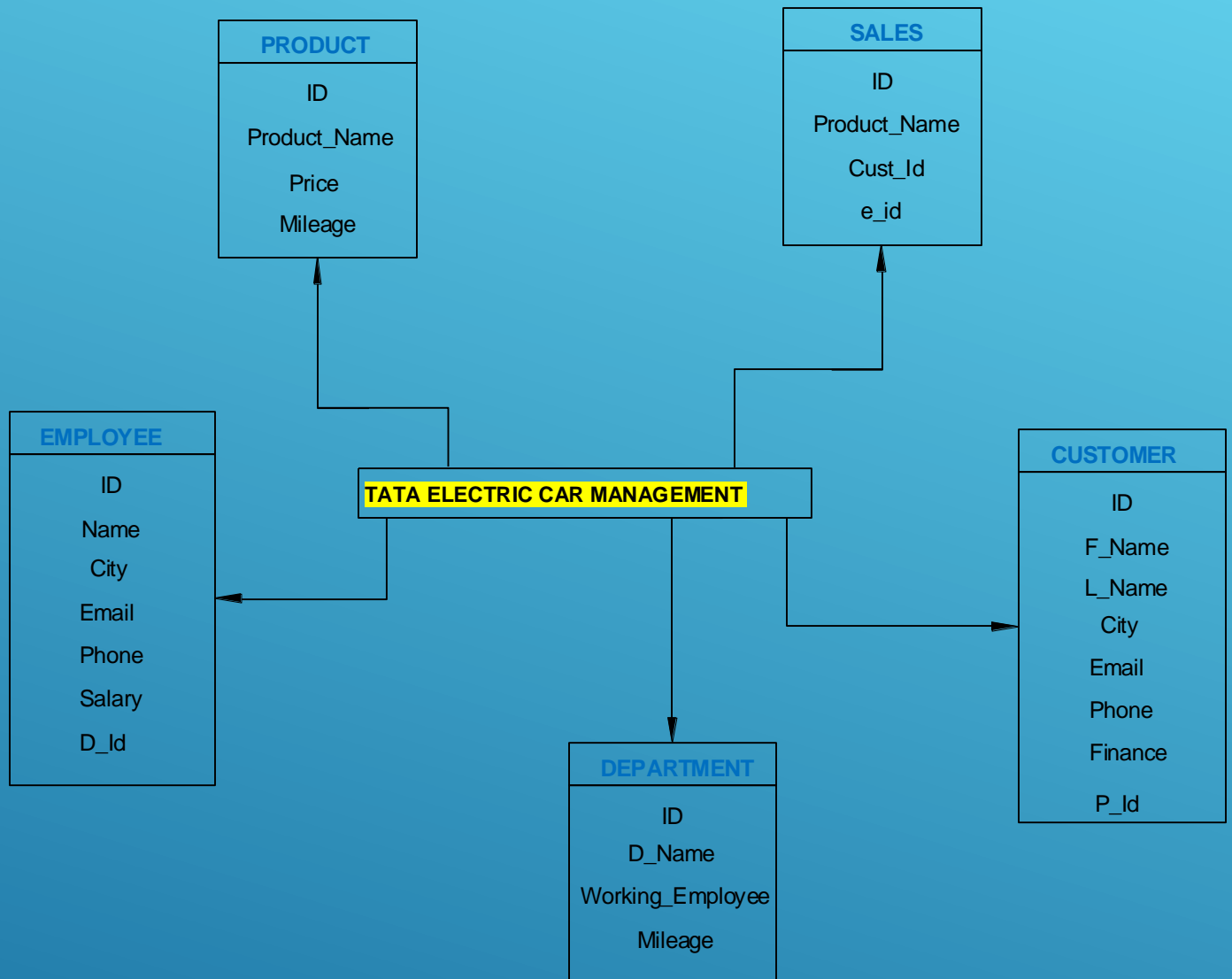
ABSTRACT

Electric vehicles (EV), as a promising way to reduce the greenhouse effect, have been researched extensively. With improvements in the areas of power electrics, energy storage and support, the plug-in hybrid electric vehicle (PHEV) provides competitive driving range and fuel economy compared to the internal combustion engine vehicle (ICEV).

Operating with optimised control strategies or utilising the concept of the energy management system (EMS), the efficiency of the PHEV could be significantly improved. In this review paper, the operating process of the various types of EVs will be explained. Battery technology and supercapacitor technology will also be discussed as a possibility to increase the energy capacity of PHEV.

INTRODUCTION

Electric carIntroduction:Both commercially and in terms of research and development, automobiles are one of the world'smost important industries. Automakers are progressively adopting cutting-edge safety technologies to better safeguard passengers and pedestrians. Now that there are more vehicles onthe road, we can travel faster and more pleasantly. As a result of this surge, urban air pollution has significantly increased (i.e., pollutants such as PM, NOX, CO, SO_2, etc.). Data from the European Union shows that road transportation accounts for more than 70 percent of industry emissions. Most developed countries' governments are promoting the use of electric vehicles (EVs) as a means of reducing air pollution, carbon dioxide (CO_2), and other greenhouse gas emissions. The promotion of environmentally friendly and energy-efficient transportation may take the form of tax incentives, financial assistance with purchases, or other unique initiatives such as the provision of free public parking or roads (Gelmanova et al 2018).

Products

Tigor EV :-

In October 2019, Tata Motors has launched the Tigor EV for taxi owners. It has an extended the range from 142 km to 213 km on a single charge according to ARAI certification. It is reported that the Tigor EV will be the cheapest electric car available for commercial buyers. In 2021 the Tata Tigor EV was renamed as XPRES-T.[10][11] On 31st August 2021, Tata Motors has launched the new Tigor EV in India with 4 variants XE, XM, XZ+ and XZ+ (O), with ARAI claimed range of 306 km in a single charge, which adopts the brand's ZipTron powertrain shared with the Nexon EV.[12] On 23 November 2022, Tata Motors has launched the new Tigor.ev with an extended ARAI claim range of 315 km. This updated version gets some new tech and features to the car

Nexon EV:-

In May 2022, Tata launched the long range version of the Nexon EV's the Nexon EV Max. The electric motor produces 106.64 kW (143 hp; 145 PS) and 250 N·m (184 lbf·ft) of torque and 0–100 under 9 seconds. It has a 40.5 kWh battery with an ARAI rated range of up to 437 km (272 mi).

Tata Tiago EV:-

The Tata Tiago.ev was launched in 2022. The LR version has a range of 315 km with battery capacity of 24 kWh while the MR version has a certified range of 250 km with a battery capacity of 19.2 kWh. The battery can be charged in 3.6 hours with a normal charger and in 57 min with fast charger. It can go from 0-60 km/h in just 5.7 seconds. It can generate torque up to 114 Nm and power up to 73.75 Bhp

PRODUCT:

This table contains the details of all the student. Id, Product Name, Price, Mileage etc.

```
mysql> desc product;
+--------------+-------------+------+-----+---------+-------+
| Field        | Type        | Null | Key | Default | Extra |
+--------------+-------------+------+-----+---------+-------+
| id           | int         | NO   | PRI | NULL    |       |
| product_name | varchar(30) | YES  |     | NULL    |       |
| price        | varchar(30) | YES  |     | NULL    |       |
| mileage      | varchar(30) | YES  |     | NULL    |       |
+--------------+-------------+------+-----+---------+-------+
4 rows in set (0.01 sec)
```

STRUCTURE OF TABLES

DEPARTMENT:

This table contains the details of all the Departmnet such as their ID, D_Name and Working_employee

```
mysql> desc department;
+------------------+-------------+------+-----+---------+-------+
| Field            | Type        | Null | Key | Default | Extra |
+------------------+-------------+------+-----+---------+-------+
| id               | int         | NO   | PRI | NULL    |       |
| d_name           | varchar(30) | YES  |     | NULL    |       |
| working_employee | varchar(30) | YES  |     | NULL    |       |
+------------------+-------------+------+-----+---------+-------+
3 rows in set (0.00 sec)
```

EMPLOYEE:

This table contains the details of all the Employee. Id, name, city, email, phone, salary and d_id

```
mysql> desc employee;
+--------+-------------+------+-----+---------+-------+
| Field  | Type        | Null | Key | Default | Extra |
+--------+-------------+------+-----+---------+-------+
| id     | int         | NO   | PRI | NULL    |       |
| name   | varchar(30) | YES  |     | NULL    |       |
| city   | varchar(30) | YES  |     | NULL    |       |
| email  | varchar(30) | YES  |     | NULL    |       |
| phone  | varchar(30) | YES  |     | NULL    |       |
| salary | int         | YES  |     | NULL    |       |
| d_id   | int         | YES  | MUL | NULL    |       |
+--------+-------------+------+-----+---------+-------+
7 rows in set (0.00 sec)
```

CUSTOMER:

This table contains the details of all the Employee. Id, name, city, email, phone, salary and d_id

```
mysql> desc customer;
+---------+-------------+------+-----+---------+-------+
| Field   | Type        | Null | Key | Default | Extra |
+---------+-------------+------+-----+---------+-------+
| id      | int         | NO   | PRI | NULL    |       |
| f_name  | varchar(30) | YES  |     | NULL    |       |
| l_name  | varchar(30) | YES  |     | NULL    |       |
| city    | varchar(30) | YES  |     | NULL    |       |
| email   | varchar(30) | YES  | UNI | NULL    |       |
| phone   | varchar(20) | YES  |     | NULL    |       |
| finance | varchar(30) | YES  |     | NULL    |       |
| p_id    | int         | YES  | MUL | NULL    |       |
+---------+-------------+------+-----+---------+-------+
8 rows in set (0.00 sec)
```

SALES:

This table contains the details of all the Employee. Id, name, city, email, phone, salary and d_id

```
mysql> desc sales;
+--------------+-------------+------+-----+---------+-------+
| Field        | Type        | Null | Key | Default | Extra |
+--------------+-------------+------+-----+---------+-------+
| id           | int         | NO   | PRI | NULL    |       |
| Product_name | varchar(30) | YES  | MUL | NULL    |       |
| cust_id      | int         | YES  | MUL | NULL    |       |
| e_id         | int         | YES  | MUL | NULL    |       |
+--------------+-------------+------+-----+---------+-------+
4 rows in set (0.00 sec)
```

CONTENTS OF TABLES

PRODUCT:

```
mysql> select * from product;
+----+---------------+--------+---------+
| id | product_name  | price  | mileage |
+----+---------------+--------+---------+
|  1 | tata_tigor    | 6.10l  | 142km   |
|  2 | tata_nexon_ev | 17.19l | 312km   |
|  3 | tata_tiago    | 8.53l  | 315km   |
+----+---------------+--------+---------+
3 rows in set (0.00 sec)
```

DEPARTMENT:

```
mysql> select * from department;
+----+-----------+------------------+
| id | d_name    | working_employee |
+----+-----------+------------------+
|  1 | marketing | 10               |
|  2 | opration  | 12               |
|  3 | finance   | 7                |
|  4 | HR        | 4                |
|  5 | purches   | 5                |
|  6 | sales     | 10               |
+----+-----------+------------------+
6 rows in set (0.00 sec)
```

EMPLOYEE:

```
mysql> select * from employee;
+----+-------------------+--------------+----------------------+------------+--------+------+
| id | name              | city         | email                | phone      | salary | d_id |
+----+-------------------+--------------+----------------------+------------+--------+------+
|  1 | ajit_kumar        | kolhapur     | ajit@123             | 8564741221 |  25000 |    1 |
|  2 | rajiv_sharma      | mumbai       | rs@1232              | 8564009293 |  28000 |    3 |
|  3 | mohan_ravat       | mumbai       | mr@007               | 8007937274 |  30000 |    5 |
|  4 | alok_mitra        | mumbai       | alkm@007             | 8830358543 |  30000 |    5 |
|  5 | pramita_pal       | sangli       | pr007@gmail.com      | 8830354243 |  26700 |    4 |
|  6 | pintu_ram         | panvel       | pntr@gmail.com       | 8454890092 |  35000 |    6 |
|  7 | swarup_bose       | uttar_pradesh| srb@gmail.com        | 8454891256 |  35000 |    4 |
|  8 | rohit_yadav       | aitawade_kh  | rby@gmail.com        | 9158355423 |  45000 |    4 |
|  9 | vyenakatesh_patil | bhedasgav    | vp@gmail.com         | 9152638911 |  45850 |    4 |
| 10 | manoj_lakra       | bhedasgav    | mjl@gmail.com        | 914572169  | 289000 |    2 |
| 11 | deepak_sharma     | thane        | nmk556@gmail.com     | 885676169  | 289000 |    2 |
| 12 | rahul_patil       | sangli       | rp476@gmail.com      | 8605860865 |  19000 |    5 |
| 13 | ajay_patil        | pune         | ap211@gmail.com      | 9011427002 |  22000 |    5 |
| 14 | goutam_ghosh      | pune         | gg583@gmail.com      | 9045123536 |  22500 |    3 |
| 15 | pranita_gaikwad   | mankhurd     | pg12@gmail.com       | 7383401045 |  30000 |    6 |
| 16 | rutuja_chavan     | mankhurd     | rc912@gmail.com      | 7383895214 |  30000 |    6 |
| 17 | ratnaprabha_aadhav| malvan       | rba@gmail.com        | 8830364546 |  30000 |    6 |
| 18 | akshay_mane       | islampur     | akm@gmail.com        | 9158302628 |  35000 |    1 |
| 19 | pradeep_ram       | kalva        | bks@gmail.com        | 8008727476 |  35900 |    1 |
| 20 | nand_gond         | thane        | kk@gmail.com         | 9930353832 |  35900 |    1 |
| 21 | somnath_sarkar    | thane        | gh56@gmail.com       | 9930424850 |  38500 |    1 |
| 22 | pradeep_sharma    | borivali     | jk6@gmail.com        | 7990000545 |  29000 |    2 |
| 23 | avjit_shaha       | malad        | tr69@gmail.com       | 9218171652 |  29900 |    2 |
| 24 | aditya_dhara      | malad        | er59@gmail.com       | 9225788896 |  23000 |    2 |
| 25 | ranjit_roy        | vashi        | ranjit59@gmail.com   | 9254261232 |  25000 |    6 |
| 26 | asish_ram         | vashi        | ar59@gmail.com       | 9254551232 |  30000 |    6 |
| 27 | monika_bhatacharya| nerul        | monu59@gmail.com     | 8825551232 |  32000 |    3 |
| 28 | nirupama_haldar   | sanpada      | niru59@gmail.com     | 8868411232 |  35000 |    3 |
| 29 | gautam_das        | mansarvor    | gautam21@gmail.com   | 8181411232 |  25000 |    2 |
| 30 | raghunath_bhaskar | juinagar     | bhaskar44@gmail.com  | 8888881232 |  40000 |    1 |
| 31 | sameer_shukla     | ulhas_nagar  | mba@gmail.com        | 8856231456 |  41250 |    1 |
| 32 | rohit_aanand      | goregav      | ba45@gmail.com       | 9922171516 |  41000 |    2 |
| 33 | prasad_rane       | wadala       | bkc45@gmail.com      | 8456167474 |  38000 |    3 |
| 34 | vikas_valive      | kolhapur     | vm545@gmail.com      | 9168113003 |  38500 |    2 |
| 35 | ankita_shete      | kolhapur     | kl545@gmail.com      | 8845454342 |  38500 |    3 |
| 36 | rohan_kadam       | goregav      | rk25@gmail.com       | 9922171551 |  40000 |    2 |
| 37 | rohit_lohar       | borivali     | rohit25@gmail.com    | 8710171551 |  35000 |    1 |
| 38 | rohan_ghatage     | kandivali    | rg25@gmail.com       | 8710170025 |  37000 |    1 |
| 39 | atish_patil       | pune         | atish25@gmail.com    | 7500170025 |  42000 |    1 |
| 40 | sayali_dinde      | kolhapur     | sayli03@gmail.com    | 7500452025 |  41000 |    6 |
| 41 | ankita_shirke     | kolhapur     | ankita03@gmail.com   | 8768452025 |  40000 |    6 |
| 42 | rutuja_patil      | vashi        | rutu28@gmail.com     | 8768685400 |  45000 |    3 |
| 43 | avantika_patil    | airoli       | avp02@gmail.com      | 8768456202 |  45000 |    6 |
| 44 | nisha_patil       | airoli       | nisha04@gmail.com    | 7404456202 |  40000 |    6 |
| 45 | ankita_bomble     | ghatkopar    | anku24@gmail.com     | 8745961235 |  35000 |    5 |
| 46 | rajaram_shewale   | kolhapur     | rajaram24@gmail.com  | 8745962525 |  30000 |    2 |
| 47 | gajanan_lohar     | kolhapur     | gajanan02@gmail.com  | 8888962525 |  34000 |    2 |
| 48 | vishal_tambe      | panvel       | vishu24@gmail.com    | 7785461234 |  35000 |    2 |
+----+-------------------+--------------+----------------------+------------+--------+------+
48 rows in set (0.00 sec)
```

```
mysql> select * from customer;
```

id	f_name	l_name	city	email	phone	finance	p_id
1	rohit	yadav	sangli	ry95@gmail.com	8007937274	no	1
2	ajay	patil	islampur	bkc58@gmail.com	8007935652	no	2
3	akshay	mane	kplhapur	ak468@gmail.com	8830352543	yes	3
4	mohan	shukla	thane	bd12@gmail.com	9158355423	yes	2
5	kunal	sharma	mumbai	kr5@gmail.com	9158565245	no	1
6	karan	sharma	mumbai	hjg5@gmail.com	8605924562	no	3
7	rahul	patil	sangli	rp56@gmail.com	9657900506	no	2
8	vikram	sing	borivali	ajp@gmail.com	9011427002	yes	1
9	swpnil	chavan	aitawade	swp@gmail.com	9158302692	yes	3
10	suraj	khan	andheri	kl@gmail.com	9156231478	no	1
11	pranita	rane	mankhurd	pg@gmail.com	7387404145	no	1
12	rutuja	gaikwad	kolhapur	rk@gmail.com	8747355851	yes	3
13	rushi	lohar	satara	uo@gmail.com	8956421523	yes	2
14	aaradhna	sathe	diva	as@gmail.com	9922181232	yes	1
15	priti	sharma	malad	akp@gmail.com	9922171819	no	2
16	bhakti	kamble	goregav	su58@gmail.com	8545226389	no	3
17	nikita	jadhav	bandra	priya58@gmail.com	7875103610	yes	2
18	rehana	mulla	mahim	lg98@gmail.com	8454830092	yes	1
19	sid	malhotra	matunga	klm23@gmail.com	8455008992	no	1
20	akshay	kumar	dadar	mla89@gmail.com	9292453003	yes	2
21	rohit	pawar	parel	kpo2@gmail.com	8082835658	no	1
22	vaibhav	patil	charkop	gk5@gmail.com	8956231478	yes	3
23	khushal	chavan	kalyan	ert4@gmail.com	8745129623	no	1
24	swpnil	joshi	mumbra	8vb@gmail.com	8574562314	no	2
25	sushant	yadav	ghatkopar	sy90@gmail.com	8605860865	yes	1
26	parth	patil	pune	parth99@gmail.com	9905860865	yes	2
27	atul	naik	kolhapur	atul97@gmail.com	9905860245	no	3
28	anish	bhaldar	pune	anish97@gmail.com	9587860245	no	3
29	pramod	shikhare	kolhpur	pramod07@gmail.com	9587864545	yes	2
30	shredhar	naik	wakad	naik85@gmail.com	9999864545	yes	3
31	ankita	shirke	pune	shirke20@gmail.com	8475124545	no	1
32	sayali	dinde	kolhapur	sayali03@gmail.com	8546712644	no	2
33	prajwal	jadhav	vashi	jadhav97@gmail.com	8854712644	yes	1
34	sandip	patil	pune	sandip45@gmail.com	8854712546	yes	3
35	prashant	chougule	panvel	prashant94@gmail.com	9565712546	no	3
36	pramod	chougule	kharghar	pramod92@gmail.com	8546712546	no	2
37	rohan	kadam	airoli	rohan99@gmail.com	9457712546	yes	1
38	rohit	lohar	thane	rohit98@gmail.com	9457712020	yes	3
39	rohan	ghatage	ghansoli	rohan2002@gmail.com	8564712020	yes	3
40	atish	patil	nerul	atish97@gmail.com	8864712020	no	1
41	vishal	tambe	panvel	vishu97@gmail.com	8864717576	no	1
42	pradip	katake	ghatkopar	pradip25@gmail.com	8585746123	yes	2
43	suraj	tambe	ghatkopar	suraj21@gmail.com	8574632147	yes	2
44	ruturaj	patil	pune	rutu@gmail.com	7564632147	yes	3
45	shreedhar	patil	pune	shree@gmail.com	8574632147	no	3
46	shubham	patil	mankhurad	sp2002@gmail.com	9854632147	no	2
47	abhijeet	shelake	kolhapur	abhi97@gmail.com	9854632525	yes	1
48	shubhash	mohite	pune	mohite23@gmail.com	8854632525	yes	2
49	santosh	patl	pune	santya99@gmail.com	8585632525	yes	3
50	vyankatesh	patl	airoli	vyanky97@gmail.com	9960685194	yes	3

SALES:

```
mysql> select * from sales;
+------+------------------+---------+------+
| id   | product_name     | cust_id | e_id |
+------+------------------+---------+------+
|   1  | tata_trigger_ev  |       1 |    6 |
|   2  | tata_nexon_ev    |       2 |   15 |
|   3  | tata_tiago       |       3 |   16 |
|   4  | tata_nexon_ev    |       4 |   17 |
|   5  | tata_trigger_ev  |       5 |   25 |
|   6  | tata_tiago       |       6 |   26 |
|   7  | tata_nexon_ev    |       7 |   40 |
|   8  | tata_trigger_ev  |       8 |   41 |
|   9  | tata_tiago       |       9 |   43 |
|  10  | tata_trigger_ev  |      10 |   44 |
|  11  | tata_trigger     |      11 |   44 |
|  12  | tata_tiago       |      12 |   43 |
|  13  | tata_nexon_ev    |      13 |   41 |
|  14  | tata_trigger_ev  |      14 |   40 |
|  15  | tata_nexon_ev    |      15 |   26 |
|  16  | tata_tiago       |      16 |   25 |
|  17  | tata_nexon_ev    |      17 |   17 |
|  18  | tata_trigger_ev  |      18 |   16 |
|  19  | tata_trigger_ev  |      19 |   15 |
|  20  | tata_nexon_ev    |      20 |    6 |
|  21  | tata_trigger_ev  |      21 |   25 |
|  22  | tata_tiago       |      22 |   44 |
|  23  | tata_trigger_ev  |      23 |   17 |
|  24  | tata_nexon_ev    |      24 |    6 |
|  25  | tata_trigger_ev  |      25 |   15 |
|  26  | tata_nexon_ev    |      26 |   15 |
|  27  | tata_tiago       |      27 |   44 |
|  28  | tata_tiago       |      28 |   40 |
|  29  | tata_nexon_ev    |      29 |   41 |
|  30  | tata_tiago       |      30 |    6 |
|  31  | tata_trigger_ev  |      31 |   43 |
|  32  | tata_nexon_ev    |      32 |   44 |
|  33  | tata_trigger_ev  |      33 |   16 |
|  34  | tata_tiago       |      34 |   15 |
|  35  | tata_tiago       |      35 |   17 |
|  36  | tata_nexon_ev    |      36 |   25 |
|  37  | tata_trigger_ev  |      37 |   26 |
|  38  | tata_tiago       |      38 |   40 |
|  39  | tata_tiago       |      39 |   41 |
|  40  | tata_trigger     |      40 |    6 |
|  41  | tata_trigger_ev  |      41 |   43 |
|  42  | tata_nexon_ev    |      42 |   43 |
|  43  | tata_nexon_ev    |      43 |   44 |
|  44  | tata_tiago       |      44 |   43 |
|  45  | tata_tiago       |      45 |   41 |
|  46  | tata_nexon_ev    |      46 |   15 |
|  47  | tata_trigger_ev  |      47 |    6 |
|  48  | tata_nexon_ev    |      48 |   16 |
|  49  | tata_tiago       |      49 |   43 |
|  50  | tata_tiago       |      50 |   44 |
+------+------------------+---------+------+
```

SUBQUERIES

1.show the all details of employee where max salary in all employee.

mysql> select id,name from employee where salary=(select max(salary) from employee where salary=(select max(salary) from employee));

```
mysql> select id,name from employee where salary=(select max(salary) from employee where salary=(select max(salary) from employee));
+----+-----------------+
| id | name            |
+----+-----------------+
|  9 | vyankatesh_patil |
+----+-----------------+
1 row in set (0.00 sec)
```

1.show the all details of employee where second max salary in all employee.

mysql> select id,name from employee where salary=(select max(salary) from employee where salary=(select max(salary) from employee where salary<(select max(salary) from employee)));

```
mysql> select id,name from employee where salary=(select max(salary) from employee where salary=(select max(salary) from employee where salary<(select max(s
alary) from employee)));
+----+-----------------+
| id | name            |
+----+-----------------+
|  8 | rohit_yadav     |
| 42 | rutuja_patil    |
| 43 | avantika_patil  |
+----+-----------------+
3 rows in set (0.00 sec)
```

1.show the all details of customer they buying the tata tigor ev scooter.

mysql> select id,f_name,l_name from customer where p_id=(select id from product where product_name="tata_tigor_ev");

```
mysql> select id,f_name,l_name from customer where p_id=(select id from product where product_name="ola_s1");
+----+---------+---------+
| id | f_name  | l_name  |
+----+---------+---------+
|  1 | rohit   | yadav   |
|  5 | kunal   | sharma  |
|  8 | vikram  | sing    |
| 10 | suraj   | khan    |
| 11 | pranita | rane    |
| 14 | aaradhna| sathe   |
| 18 | rehana  | mulla   |
| 19 | sid     | malhotra|
| 21 | rohit   | pawar   |
| 23 | khushal | chavan  |
| 25 | sushant | yadav   |
| 31 | ankita  | shirke  |
| 33 | prajwal | jadhav  |
| 37 | rohan   | kadam   |
| 40 | atish   | patil   |
| 41 | vishal  | tambe   |
| 47 | abhijeet| shelake |
+----+---------+---------+
17 rows in set (0.01 sec)
```

4.show the all details of sales employee name is pranita gaikwad how many sales the product.

mysql> select id,product_name from sales where e_id=(select id from employee where name="pranita_gaikwad");

```
mysql> select id,product_name from sales where e_id=(select id from employee where name="pranita_gaikwad");
+----+---------------+
| id | product_name  |
+----+---------------+
|  2 | tata_nexon_ev |
| 19 | tata_trigger_ev |
| 25 | tata_trigger_ev |
| 26 | tata_nexon_ev |
| 34 | tata_tiago    |
| 46 | tata_nexon_ev |
+----+---------------+
6 rows in set (0.03 sec)
```

5. show the all details of employee, how many employee working in marketing department.

mysql> select id,name from employee where d_id=(select id from department where d_name="marketing");

```
mysql> select id,name from employee where d_id=(select id from department where d_name="marketing");
+----+--------------------+
| id | name               |
+----+--------------------+
|  1 | ajit_kumar         |
| 18 | akshay_mane        |
| 19 | pradeep_ram        |
| 20 | nand_gond          |
| 21 | somnath_sarkar     |
| 30 | raghunath_bhaskar  |
| 31 | sameer_shukla      |
| 37 | rohit_lohar        |
| 38 | rohan_ghatage      |
| 39 | atish_patil        |
+----+--------------------+
10 rows in set (0.00 sec)
```

JOINS

1.Perform inner join department and employee but show only d_name, name, salary.

mysql> select d_name,name,salary from department inner join employee on department.id=d_id;

```
mysql> select d_name,name,salary from department inner join employee on department.id=d_id;
+-----------+--------------------+--------+
| d_name    | name               | salary |
+-----------+--------------------+--------+
| marketing | ajit_kumar         |  25000 |
| marketing | akshay_mane        |  35000 |
| marketing | pradeep_ram        |  35900 |
| marketing | nand_gond          |  35900 |
| marketing | somnath_sarkar     |  38500 |
| marketing | raghunath_bhaskar  |  40000 |
| marketing | sameer_shukla      |  41250 |
| marketing | rohit_lohar        |  35000 |
| marketing | rohan_ghatage      |  37000 |
| marketing | atish_patil        |  42000 |
| opration  | manoj_lakra        |  40000 |
| opration  | deepak_sharma      |  40000 |
| opration  | pradeep_sharma     |  29000 |
| opration  | avjit_shaha        |  29900 |
| opration  | aditya_dhara       |  23000 |
| opration  | gautam_das         |  25000 |
| opration  | rohit_aanand       |  41000 |
| opration  | vikas_valive       |  38500 |
| opration  | rohan_kadam        |  40000 |
| opration  | rajaram_shewale    |  30000 |
| opration  | gajanan_lohar      |  34000 |
| opration  | vishal_tambe       |  35000 |
| finance   | rajiv_sharma       |  28000 |
| finance   | goutam_ghosh       |  22500 |
| finance   | monika_bhatacharya |  32000 |
| finance   | nirupama_haldar    |  35000 |
| finance   | prasad_rane        |  38000 |
| finance   | ankita_shete       |  38500 |
| finance   | rutuja_patil       |  45000 |
| HR        | pramita_pal        |  26700 |
| HR        | swarup_bose        |  35000 |
| HR        | rohit_yadav        |  45000 |
| HR        | vyankatesh_patil   |  45850 |
| purches   | mohan_ravat        |  30000 |
| purches   | alok_mitra         |  30000 |
| purches   | rahul_patil        |  19000 |
| purches   | ajay_patil         |  22000 |
| purches   | ankita_bomble      |  35000 |
| sales     | pintu_ram          |  35000 |
| sales     | pranita_gaikwad    |  30000 |
| sales     | rutuja_chavan      |  30000 |
| sales     | ratnaprabha_aadhav |  30000 |
| sales     | ranjit_roy         |  25000 |
| sales     | asish_ram          |  30000 |
| sales     | sayali_dinde       |  41000 |
| sales     | ankita_shirke      |  40000 |
| sales     | avantika_patil     |  45000 |
| sales     | nisha_patil        |  40000 |
+-----------+--------------------+--------+
48 rows in set (0.00 sec)
```

1.Perform right join product and customer but show only product_name, price, mileage, f_name, l_name, city, email.

mysql>select product_name, price, mileage, f_name, l_name, city, email from product right join customer on product.id=p_id;

```
mysql> select product_name, price, mileage, f_name, l_name, city, email from product right join customer on product.id=p_id;
+--------------+--------+---------+-----------+----------+-----------+----------------------+
| product_name | price  | mileage | f_name    | l_name   | city      | email                |
+--------------+--------+---------+-----------+----------+-----------+----------------------+
| tata_tigor   | 6.10l  | 142km   | rohit     | yadav    | sangli    | ry95@gmail.com       |
| tata_nexon_ev| 17.19l | 312km   | ajay      | patil    | islampur  | bkc58@gmail.com      |
| tata_tiago   | 8.53l  | 315km   | akshay    | mane     | kplhapur  | ak468@gmail.com      |
| tata_nexon_ev| 17.19l | 312km   | mohan     | shukla   | thane     | bd12@gmail.com       |
| tata_tigor   | 6.10l  | 142km   | kunal     | sharma   | mumbai    | kr5@gmail.com        |
| tata_tiago   | 8.53l  | 315km   | karan     | sharma   | mumbai    | hjg5@gmail.com       |
| tata_nexon_ev| 17.19l | 312km   | rahul     | patil    | sangli    | rp56@gmail.com       |
| tata_tigor   | 6.10l  | 142km   | vikram    | sing     | borivali  | ajp@gmail.com        |
| tata_tiago   | 8.53l  | 315km   | swpnil    | chavan   | aitawade  | swp@gmail.com        |
| tata_tigor   | 6.10l  | 142km   | suraj     | khan     | andheri   | kl@gmail.com         |
| tata_tigor   | 6.10l  | 142km   | pranita   | rane     | mankhurd  | pg@gmail.com         |
| tata_tiago   | 8.53l  | 315km   | rutuja    | gaikwad  | kolhapur  | rk@gmail.com         |
| tata_nexon_ev| 17.19l | 312km   | rushi     | lohar    | satara    | uo@gmail.com         |
| tata_tigor   | 6.10l  | 142km   | aaradhna  | sathe    | diva      | as@gmail.com         |
| tata_nexon_ev| 17.19l | 312km   | priti     | sharma   | malad     | akp@gmail.com        |
| tata_tiago   | 8.53l  | 315km   | bhakti    | kamble   | goregav   | su58@gmail.com       |
| tata_nexon_ev| 17.19l | 312km   | nikita    | jadhav   | bandra    | priya58@gmail.com    |
| tata_tigor   | 6.10l  | 142km   | rehana    | mulla    | mahim     | lg98@gmail.com       |
| tata_tigor   | 6.10l  | 142km   | sid       | malhotra | matunga   | klm23@gmail.com      |
| tata_nexon_ev| 17.19l | 312km   | akshay    | kumar    | dadar     | mla89@gmail.com      |
| tata_tigor   | 6.10l  | 142km   | rohit     | pawar    | parel     | kpo2@gmail.com       |
| tata_tiago   | 8.53l  | 315km   | vaibhav   | patil    | charkop   | gk5@gmail.com        |
| tata_tigor   | 6.10l  | 142km   | khushal   | chavan   | kalyan    | ert4@gmail.com       |
| tata_nexon_ev| 17.19l | 312km   | swpnil    | joshi    | mumbra    | 8vb@gmail.com        |
| tata_tigor   | 6.10l  | 142km   | sushant   | yadav    | ghatkopar | sy90@gmail.com       |
| tata_nexon_ev| 17.19l | 312km   | parth     | patil    | pune      | parth99@gmail.com    |
| tata_tiago   | 8.53l  | 315km   | atul      | naik     | kolhapur  | atul97@gmail.com     |
| tata_tiago   | 8.53l  | 315km   | anish     | bhaldar  | pune      | anish97@gmail.com    |
| tata_nexon_ev| 17.19l | 312km   | pramod    | shikhare | kolhpur   | pramod07@gmail.com   |
| tata_tiago   | 8.53l  | 315km   | shredhar  | naik     | wakad     | naik85@gmail.com     |
| tata_tigor   | 6.10l  | 142km   | ankita    | shirke   | pune      | shirke20@gmail.com   |
| tata_nexon_ev| 17.19l | 312km   | sayali    | dinde    | kolhapur  | sayali03@gmail.com   |
| tata_tigor   | 6.10l  | 142km   | prajwal   | jadhav   | vashi     | jadhav97@gmail.com   |
| tata_tiago   | 8.53l  | 315km   | sandip    | patil    | pune      | sandip45@gmail.com   |
| tata_tiago   | 8.53l  | 315km   | prashant  | chougule | panvel    | prashant94@gmail.com |
| tata_nexon_ev| 17.19l | 312km   | pramod    | chougule | kharghar  | pramod92@gmail.com   |
| tata_tigor   | 6.10l  | 142km   | rohan     | kadam    | airoli    | rohan99@gmail.com    |
| tata_tiago   | 8.53l  | 315km   | rohit     | lohar    | thane     | rohit98@gmail.com    |
| tata_tiago   | 8.53l  | 315km   | rohan     | ghatage  | ghansoli  | rohan2002@gmail.com  |
| tata_tigor   | 6.10l  | 142km   | atish     | patil    | nerul     | atish97@gmail.com    |
| tata_tigor   | 6.10l  | 142km   | vishal    | tambe    | panvel    | vishu97@gmail.com    |
| tata_nexon_ev| 17.19l | 312km   | pradip    | katake   | ghatkopar | pradip25@gmail.com   |
| tata_nexon_ev| 17.19l | 312km   | suraj     | tambe    | ghatkopar | suraj21@gmail.com    |
| tata_tiago   | 8.53l  | 315km   | ruturaj   | patil    | pune      | rutu@gmail.com       |
| tata_tiago   | 8.53l  | 315km   | shreedhar | patil    | pune      | shree@gmail.com      |
| tata_nexon_ev| 17.19l | 312km   | shubham   | patil    | mankhurad | sp2002@gmail.com     |
| tata_tigor   | 6.10l  | 142km   | abhijeet  | shelake  | kolhapur  | abhi97@gmail.com     |
| tata_nexon_ev| 17.19l | 312km   | shubhash  | mohite   | pune      | mohite23@gmail.com   |
| tata_tiago   | 8.53l  | 315km   | santosh   | patl     | pune      | santya99@gmail.com   |
| tata_tiago   | 8.53l  | 315km   | vyankatesh| patl     | airoli    | vyanky97@gmail.com   |
+--------------+--------+---------+-----------+----------+-----------+----------------------+
50 rows in set (0.01 sec)
```

1.Perform left join employee and department but show only id, name, d_name

mysql>select employee.id,name,d_name from employee left join department on department.id=d_id;

```
mysql>  select employee.id,name,d_name from employee left join department on department.id=d_id;
+----+--------------------+-----------+
| id | name               | d_name    |
+----+--------------------+-----------+
|  1 | ajit_kumar         | marketing |
|  2 | rajiv_sharma       | finance   |
|  3 | mohan_ravat        | purches   |
|  4 | alok_mitra         | purches   |
|  5 | pramita_pal        | HR        |
|  6 | pintu_ram          | sales     |
|  7 | swarup_bose        | HR        |
|  8 | rohit_yadav        | HR        |
|  9 | vyankatesh_patil   | HR        |
| 10 | manoj_lakra        | opration  |
| 11 | deepak_sharma      | opration  |
| 12 | rahul_patil        | purches   |
| 13 | ajay_patil         | purches   |
| 14 | goutam_ghosh       | finance   |
| 15 | pranita_gaikwad    | sales     |
| 16 | rutuja_chavan      | sales     |
| 17 | ratnaprabha_aadhav | sales     |
| 18 | akshay_mane        | marketing |
| 19 | pradeep_ram        | marketing |
| 20 | nand_gond          | marketing |
| 21 | somnath_sarkar     | marketing |
| 22 | pradeep_sharma     | opration  |
| 23 | avjit_shaha        | opration  |
| 24 | aditya_dhara       | opration  |
| 25 | ranjit_roy         | sales     |
| 26 | asish_ram          | sales     |
| 27 | monika_bhatacharya | finance   |
| 28 | nirupama_haldar    | finance   |
| 29 | gautam_das         | opration  |
| 30 | raghunath_bhaskar  | marketing |
| 31 | sameer_shukla      | marketing |
| 32 | rohit_aanand       | opration  |
| 33 | prasad_rane        | finance   |
| 34 | vikas_valive       | opration  |
| 35 | ankita_shete       | finance   |
| 36 | rohan_kadam        | opration  |
| 37 | rohit_lohar        | marketing |
| 38 | rohan_ghatage      | marketing |
| 39 | atish_patil        | marketing |
| 40 | sayali_dinde       | sales     |
| 41 | ankita_shirke      | sales     |
| 42 | rutuja_patil       | finance   |
| 43 | avantika_patil     | sales     |
| 44 | nisha_patil        | sales     |
| 45 | ankita_bomble      | purches   |
| 46 | rajaram_shewale    | opration  |
| 47 | gajanan_lohar      | opration  |
| 48 | vishal_tambe       | opration  |
+----+--------------------+-----------+
48 rows in set (0.00 sec)
```

TRIGGER

EMPLOYEE TABLE PERFORM AFTER INSERT.

mysql> insert into employee values(49,"atish_patil","panvel","atish24@gmail.com","9845761414" ,28000,5)#

```
mysql> select * from employee#
+----+-------------------+---------------+-------------------------+------------+--------+------+
| id | name              | city          | email                   | phone      | salary | d_id |
+----+-------------------+---------------+-------------------------+------------+--------+------+
|  1 | ajit_kumar        | kolhapur      | ajit@123                | 8564741221 | 25000  | 1    |
|  2 | rajiv_sharma      | mumbai        | rs@1232                 | 8564009293 | 28000  | 3    |
|  3 | mohan_ravat       | mumbai        | mr@007                  | 8007937274 | 30000  | 5    |
|  4 | alok_mitra        | mumbai        | alkm@007                | 8830358543 | 30000  | 5    |
|  5 | pramita_pal       | sangli        | pr007@gmail.com         | 8830354243 | 26700  | 4    |
|  6 | pintu_ram         | panvel        | pntr@gmail.com          | 8454890092 | 35000  | 6    |
|  7 | swarup_bose       | uttar_pradesh | srb@gmail.com           | 8454891256 | 35000  | 4    |
|  8 | rohit_yadav       | aitawade_kh   | rby@gmail.com           | 9158355423 | 45000  | 4    |
|  9 | vyankatesh_patil  | bhedasgaon    | vp@gmail.com            | 9152638911 | 45850  | 4    |
| 10 | manoj_lakra       | bhedasgaon    | mjl@gmail.com           | 914572169  | 40000  | 2    |
| 11 | deepak_sharma     | thane         | nmk556@gmail.com        | 885676169  | 40000  | 2    |
| 12 | rahul_patil       | sangli        | rp476@gmail.com         | 8605860865 | 19000  | 5    |
| 13 | ajay_patil        | pune          | ap211@gmail.com         | 9011427002 | 22000  | 5    |
| 14 | goutam_ghosh      | pune          | gg583@gmail.com         | 9045123536 | 22500  | 3    |
| 15 | pranita_gaikwad   | mankhurd      | pg12@gmail.com          | 7383401045 | 30000  | 6    |
| 16 | rutuja_chavan     | mankhurd      | rc912@gmail.com         | 7383895214 | 30000  | 6    |
| 17 | ratnaprabha_aadhav| malvan        | rba@gmail.com           | 8830364546 | 30000  | 6    |
| 18 | akshay_mane       | islampur      | akm@gmail.com           | 9158302628 | 35000  | 1    |
| 19 | pradeep_ram       | kalva         | bks@gmail.com           | 8008727476 | 35900  | 1    |
| 20 | nand_gond         | thane         | kk@gmail.com            | 9930353832 | 35900  | 1    |
| 21 | somnath_sarkar    | thane         | gh56@gmail.com          | 9930424850 | 38500  | 1    |
| 22 | pradeep_sharma    | borivali      | jk6@gmail.com           | 7990000545 | 29000  | 2    |
| 23 | avjit_shaha       | malad         | tr69@gmail.com          | 9218171652 | 29900  | 2    |
| 24 | aditya_dhara      | malad         | er59@gmail.com          | 9225788896 | 23000  | 2    |
| 25 | ranjit_roy        | vashi         | ranjit59@gmail.com      | 9254261232 | 25000  | 6    |
| 26 | asish_ram         | vashi         | ar59@gmail.com          | 9254551232 | 30000  | 6    |
| 27 | monika_bhatacharya| nerul         | monu59@gmail.com        | 8825551232 | 32000  | 3    |
| 28 | nirupama_haldar   | sanpada       | niru59@gmail.com        | 8868411232 | 35000  | 3    |
| 29 | gautam_das        | mansarvor     | gautam21@gmail.com      | 8181411232 | 25000  | 2    |
| 30 | raghunath_bhaskar | juinagar      | bhaskar44@gmail.com     | 8888881232 | 40000  | 1    |
| 31 | sameer_shukla     | ulhas_nagar   | mba@gmail.com           | 8856231456 | 41250  | 1    |
| 32 | rohit_aanand      | goregav       | ba45@gmail.com          | 9922171516 | 41000  | 2    |
| 33 | prasad_rane       | wadala        | bkc45@gmail.com         | 8456167474 | 38000  | 3    |
| 34 | vikas_valive      | kolhapur      | vm545@gmail.com         | 9168113003 | 38500  | 2    |
| 35 | ankita_shete      | kolhapur      | kl545@gmail.com         | 8845454342 | 38500  | 3    |
| 36 | rohan_kadam       | goregav       | rk25@gmail.com          | 9922171551 | 40000  | 2    |
| 37 | rohit_lohar       | borivali      | rohit25@gmail.com       | 8710171551 | 35000  | 1    |
| 38 | rohan_ghatage     | kandivali     | rg25@gmail.com          | 8710170025 | 37000  | 1    |
| 39 | atish_patil       | pune          | atish25@gmail.com       | 7500170025 | 42000  | 1    |
| 40 | sayali_dinde      | kolhapur      | sayli03@gmail.com       | 7500452025 | 41000  | 6    |
| 41 | ankita_shirke     | kolhapur      | ankita03@gmail.com      | 8768452025 | 40000  | 6    |
| 42 | rutuja_patil      | vashi         | rutu28@gmail.com        | 8768685400 | 45000  | 3    |
| 43 | avantika_patil    | airoli        | avp02@gmail.com         | 8768456202 | 45000  | 6    |
| 44 | nisha_patil       | airoli        | nisha04@gmail.com       | 7404456202 | 40000  | 6    |
| 45 | ankita_bomble     | ghatkopar     | anku24@gmail.com        | 8745961235 | 35000  | 5    |
| 46 | rajaram_shewale   | kolhapur      | rajaram24@gmail.com     | 8745962525 | 30000  | 2    |
| 47 | gajanan_lohar     | kolhapur      | gajanan02@gmail.com     | 8888962525 | 34000  | 2    |
| 48 | vishal_tambe      | panvel        | vishu24@gmail.com       | 9845763214 | 25000  | 2    |
| 49 | atish_patil       | panvel        | atish24@gmail.com       | 9845761414 | 28000  | 5    |
+----+-------------------+---------------+-------------------------+------------+--------+------+
49 rows in set (0.00 sec)
```

```
mysql> select * from employee_backup#
+----+--------------+--------+-------------------+------------+--------+------+
| id | name         | city   | email             | phone      | salary | d_id |
+----+--------------+--------+-------------------+------------+--------+------+
| 48 | vishal_tambe | panvel | vishu24@gmail.com | 9845763214 | 25000  | 2    |
| 49 | atish_patil  | panvel | atish24@gmail.com | 9845761414 | 28000  | 5    |
+----+--------------+--------+-------------------+------------+--------+------+
2 rows in set (0.00 sec)
```

EMPLOYEE TABLE PERFORM AFTER DELETE.

mysql> delete from employee where id=49#

```
mysql> select * from employee#
+----+---------------------+--------------+-------------------------+------------+--------+------+
| id | name                | city         | email                   | phone      | salary | d_id |
+----+---------------------+--------------+-------------------------+------------+--------+------+
|  1 | ajit_kumar          | kolhapur     | ajit@123                | 8564741221 | 25000  |    1 |
|  2 | rajiv_sharma        | mumbai       | rs@1232                 | 8564009293 | 28000  |    3 |
|  3 | mohan_ravat         | mumbai       | mr@007                  | 8007937274 | 30000  |    5 |
|  4 | alok_mitra          | mumbai       | alkm@007                | 8830358543 | 30000  |    5 |
|  5 | pramita_pal         | sangli       | pr007@gmail.com         | 8830354243 | 26700  |    4 |
|  6 | pintu_ram           | panvel       | pntr@gmail.com          | 8454890092 | 35000  |    6 |
|  7 | swarup_bose         | uttar_pradesh| srb@gmail.com           | 8454891256 | 35000  |    4 |
|  8 | rohit_yadav         | aitawade_kh  | rby@gmail.com           | 9158355423 | 45000  |    4 |
|  9 | vyankatesh_patil    | bhedasgaon   | vp@gmail.com            | 9152638911 | 45850  |    4 |
| 10 | manoj_lakra         | bhedasgaon   | mjl@gmail.com           | 914572169  | 40000  |    2 |
| 11 | deepak_sharma       | thane        | nmk556@gmail.com        | 885676169  | 40000  |    2 |
| 12 | rahul_patil         | sangli       | rp476@gmail.com         | 8605860865 | 19000  |    5 |
| 13 | ajay_patil          | pune         | ap211@gmail.com         | 9011427002 | 22000  |    5 |
| 14 | goutam_ghosh        | pune         | gg583@gmail.com         | 9045123536 | 22500  |    3 |
| 15 | pranita_gaikwad     | mankhurd     | pg12@gmail.com          | 7383401045 | 30000  |    6 |
| 16 | rutuja_chavan       | mankhurd     | rc912@gmail.com         | 7383895214 | 30000  |    6 |
| 17 | ratnaprabha_aadhav  | malvan       | rba@gmail.com           | 8830364546 | 30000  |    6 |
| 18 | akshay_mane         | islampur     | akm@gmail.com           | 9158302628 | 35000  |    1 |
| 19 | pradeep_ram         | kalva        | bks@gmail.com           | 8008727476 | 35900  |    1 |
| 20 | nand_gond           | thane        | kk@gmail.com            | 9930353832 | 35900  |    1 |
| 21 | somnath_sarkar      | thane        | gh56@gmail.com          | 9930424850 | 38500  |    1 |
| 22 | pradeep_sharma      | borivali     | jk6@gmail.com           | 7990000545 | 29000  |    2 |
| 23 | avjit_shaha         | malad        | tr69@gmail.com          | 9218171652 | 29900  |    2 |
| 24 | aditya_dhara        | malad        | er59@gmail.com          | 9225788896 | 23000  |    2 |
| 25 | ranjit_roy          | vashi        | ranjit59@gmail.com      | 9254261232 | 25000  |    6 |
| 26 | asish_ram           | vashi        | ar59@gmail.com          | 9254551232 | 30000  |    6 |
| 27 | monika_bhatacharya  | nerul        | monu59@gmail.com        | 8825551232 | 32000  |    3 |
| 28 | nirupama_haldar     | sanpada      | niru59@gmail.com        | 8868411232 | 35000  |    3 |
| 29 | gautam_das          | mansarvor    | gautam21@gmail.com      | 8181411232 | 25000  |    2 |
| 30 | raghunath_bhaskar   | juinagar     | bhaskar44@gmail.com     | 8888881232 | 40000  |    1 |
| 31 | sameer_shukla       | ulhas_nagar  | mba@gmail.com           | 8856231456 | 41250  |    1 |
| 32 | rohit_aanand        | goregav      | ba45@gmail.com          | 9922171516 | 41000  |    2 |
| 33 | prasad_rane         | wadala       | bkc45@gmail.com         | 8456167474 | 38000  |    3 |
| 34 | vikas_valive        | kolhapur     | vm545@gmail.com         | 9168113003 | 38500  |    2 |
| 35 | ankita_shete        | kolhapur     | kl545@gmail.com         | 8845454342 | 38500  |    3 |
| 36 | rohan_kadam         | goregav      | rk25@gmail.com          | 9922171551 | 40000  |    2 |
| 37 | rohit_lohar         | borivali     | rohit25@gmail.com       | 8710171551 | 35000  |    1 |
| 38 | rohan_ghatage       | kandivali    | rg25@gmail.com          | 8710170025 | 37000  |    1 |
| 39 | atish_patil         | pune         | atish25@gmail.com       | 7500170025 | 42000  |    1 |
| 40 | sayali_dinde        | kolhapur     | sayli03@gmail.com       | 7500452025 | 41000  |    6 |
| 41 | ankita_shirke       | kolhapur     | ankita03@gmail.com      | 8768452025 | 40000  |    6 |
| 42 | rutuja_patil        | vashi        | rutu28@gmail.com        | 8768685400 | 45000  |    3 |
| 43 | avantika_patil      | airoli       | avp02@gmail.com         | 8768456202 | 45000  |    6 |
| 44 | nisha_patil         | airoli       | nisha04@gmail.com       | 7404456202 | 40000  |    6 |
| 45 | ankita_bomble       | ghatkopar    | anku24@gmail.com        | 8745961235 | 35000  |    5 |
| 46 | rajaram_shewale     | kolhapur     | rajaram24@gmail.com     | 8745962525 | 30000  |    2 |
| 47 | gajanan_lohar       | kolhapur     | gajanan02@gmail.com     | 8888962525 | 34000  |    2 |
| 48 | vishal_tambe        | panvel       | vishu24@gmail.com       | 9845763214 | 25000  |    2 |
+----+---------------------+--------------+-------------------------+------------+--------+------+
48 rows in set (0.00 sec)
```

```
mysql> select * from drop_users#
+----+-------------+--------+-------------------+------------+--------+------+
| id | name        | city   | email             | phone      | salary | d_id |
+----+-------------+--------+-------------------+------------+--------+------+
| 49 | atish_patil | panvel | atish24@gmail.com | 9845761414 | 28000  |    5 |
+----+-------------+--------+-------------------+------------+--------+------+
1 row in set (0.00 sec)

mysql>
```

THANK YOU