

# Vehicle Management System

## 1. Vehicle\_types:

```
INSERT INTO vehicle_types(  
    wheels, type_name)  
VALUES (2, 'Scooter');
```

```
INSERT INTO vehicle_types(  
    wheels, type_name)  
VALUES (2, 'Bike');
```

```
INSERT INTO vehicle_types(  
    wheels, type_name)  
VALUES (3, 'Auto');
```

```
INSERT INTO vehicle_types(  
    wheels, type_name)  
VALUES (4, 'Car');
```

```
INSERT INTO vehicle_types(  
    wheels, type_name)  
VALUES (4, 'Truck');
```

```
INSERT INTO vehicle_types(  
    wheels, type_name)  
VALUES (4, 'Bus');
```

## 2. Manufacturers:

```
INSERT INTO manufacturers(  
    manufacturer_name,
```

```
manu_name, manu_address, manu_contact, manu_email)
VALUES ('Honda','Gujarat, India',07922816263, 'contact@honda.com');
```

```
INSERT INTO manufacturers(
    manu_name, manu_address, manu_contact, manu_email)
VALUES ('Hero','Karnataka, India',07922815001, 'contact@heromoto.com');
```

```
INSERT INTO manufacturers(
    manu_name, manu_address, manu_contact, manu_email)
VALUES ('Maruti Suzuki','Sikkim, India',07922818412, 'contact@maruti.com');
```

```
INSERT INTO manufacturers(
    manu_name, manu_address, manu_contact, manu_email)
VALUES ('Tata','Surat, India',07925064723, 'contact@tata.com');
```

```
INSERT INTO manufacturers(
    manu_name, manu_address, manu_contact, manu_email)
VALUES ('Hyundai','United States',101012356, 'contact@hyundai.com');
```

```
INSERT INTO manufacturers(
    manu_name, manu_address, manu_contact, manu_email)
VALUES ('Mahindra','Punjab, India',918489781203, 'contact@mahindra.com');
```

```
INSERT INTO manufacturers(
    manu_name, manu_address, manu_contact, manu_email)
VALUES ('Renault','Pune, India',918489785465, 'contact@renault.com');
```

```
INSERT INTO manufacturers(
    manu_name, manu_address, manu_contact, manu_email)
VALUES ('Volvo','California',01450567821, 'contact@volvo.com');
```

```
INSERT INTO manufacturers(  
    manu_name, manu_address, manu_contact, manu_email)  
VALUES ('Volkswegan','India',919875785465, 'contact@volks.com');
```

```
INSERT INTO manufacturers(  
    manu_name, manu_address, manu_contact, manu_email)  
VALUES ('Ford','Karnataka, India',919425385465, 'contact@fiat.com');
```

### **3. Vehicle\_models:**

```
INSERT INTO vehicle_models(  
    model_name, unit_type, cubic_cm, manu_id, type_id)  
VALUES ('Activa','LTR', '110', 1,1);
```

```
INSERT INTO vehicle_models(  
    model_name, unit_type, cubic_cm, manu_id, type_id)  
VALUES ('Honda City','LTR', '1500', 1,4);
```

```
INSERT INTO vehicle_models(  
    model_name, unit_type, cubic_cm, manu_id, type_id)  
VALUES ('Indigo','LTR', '1200', 4,4);
```

```
INSERT INTO vehicle_models(  
    model_name, unit_type, cubic_cm, manu_id, type_id)  
VALUES ('i10','LTR', '1000', 5,4);
```

```
INSERT INTO vehicle_models(  
    model_name, unit_type, cubic_cm, manu_id, type_id)  
VALUES ('Zen','LTR', '800', 3,4);
```

```
INSERT INTO vehicle_models(  
    model_name, unit_type, cubic_cm, manu_id, type_id)
```

```
VALUES ('CB Shine','LTR', '150', 1,2);
```

```
INSERT INTO vehicle_models(  
    model_name, unit_type, cubic_cm, manu_id, type_id)  
VALUES ('CBR','LTR', '200', 1,2);
```

```
INSERT INTO vehicle_models(  
    model_name, unit_type, cubic_cm, manu_id, type_id)  
VALUES ('Maestro','LTR', '1500', 2,1);
```

```
INSERT INTO vehicle_models(  
    model_name, unit_type, cubic_cm, manu_id, type_id)  
VALUES ('Passion','LTR', '150', 2,2);
```

```
INSERT INTO vehicle_models(  
    model_name, unit_type, cubic_cm, manu_id, type_id)  
VALUES ('Splendor','LTR', '125', 2,2);
```

```
INSERT INTO vehicle_models(  
    model_name, unit_type, cubic_cm, manu_id, type_id)  
VALUES ('Omni','LTR', '800', 3,4);
```

```
INSERT INTO vehicle_models(  
    model_name, unit_type, cubic_cm, manu_id, type_id)  
VALUES ('Dzire','LTR', '800', 3,4);
```

```
INSERT INTO vehicle_models(  
    model_name, unit_type, cubic_cm, manu_id, type_id)  
VALUES ('Nano','LTR', '800', 3,4);
```

```
INSERT INTO vehicle_models(  
    model_name, unit_type, cubic_cm, manu_id, type_id)
```

```
        model_name, unit_type, cubic_cm, manu_id, type_id)
VALUES ('Tata Bus','LTR', '1500', 4,6);
```

```
INSERT INTO vehicle_models(
        model_name, unit_type, cubic_cm, manu_id, type_id)
VALUES ('Tata Ace','LTR', '1500', 4,5);
```

```
INSERT INTO vehicle_models(
        model_name, unit_type, cubic_cm, manu_id, type_id)
VALUES ('i20','LTR', '1200', 5,4);
```

```
INSERT INTO vehicle_models(
        model_name, unit_type, cubic_cm, manu_id, type_id)
VALUES ('Creta','LTR', '1000', 5,4);
```

```
INSERT INTO vehicle_models(
        model_name, unit_type, cubic_cm, manu_id, type_id)
VALUES ('Verna','LTR', '1000', 5,4);
```

```
INSERT INTO vehicle_models(
        model_name, unit_type, cubic_cm, manu_id, type_id)
VALUES ('XUV','LTR', '1000', 6,4);
```

```
INSERT INTO vehicle_models(
        model_name, unit_type, cubic_cm, manu_id, type_id)
VALUES ('KUV','LTR', '1000', 6,4);
```

```
INSERT INTO vehicle_models(
        model_name, unit_type, cubic_cm, manu_id, type_id)
VALUES ('Mahindra Truck','LTR', '1500', 6,5);
```

```
INSERT INTO vehicle_models(  
    model_name, unit_type, cubic_cm, manu_id, type_id)  
VALUES ('Duster','LTR', '1200', 7,4);
```

```
INSERT INTO vehicle_models(  
    model_name, unit_type, cubic_cm, manu_id, type_id)  
VALUES ('Kwid','LTR', '1000', 7,4);
```

```
INSERT INTO vehicle_models(  
    model_name, unit_type, cubic_cm, manu_id, type_id)  
VALUES ('Lodgy','LTR', '1000', 7,4);
```

```
INSERT INTO vehicle_models(  
    model_name, unit_type, cubic_cm, manu_id, type_id)  
VALUES ('V40','LTR', '1000', 8,4);
```

```
INSERT INTO vehicle_models(  
    model_name, unit_type, cubic_cm, manu_id, type_id)  
VALUES ('S60','LTR', '1200', 8,4);
```

```
INSERT INTO vehicle_models(  
    model_name, unit_type, cubic_cm, manu_id, type_id)  
VALUES ('Polo','LTR', '1000', 9,4);
```

```
INSERT INTO vehicle_models(  
    model_name, unit_type, cubic_cm, manu_id, type_id)  
VALUES ('Vento','LTR', '1200', 9,4);
```

```
INSERT INTO vehicle_models(  
    model_name, unit_type, cubic_cm, manu_id, type_id)  
VALUES ('EcoSport','LTR', '1200', 10,4);
```

```
INSERT INTO vehicle_models(  
    model_name, unit_type, cubic_cm, manu_id, type_id)  
VALUES ('Figo','LTR', '1000', 10,4);
```

#### 4. Customers:

```
INSERT INTO customers(cname, cemail, ccontact, caddress)  
VALUES ('Mohit Tanwani', 'mohitmurlidhar@gmail.com', 8490924384, '115, Dward, Kubernagar  
Ahmedabad');
```

```
INSERT INTO customers(cname, cemail, ccontact, caddress)  
VALUES ('Malav Shah', 'malavshah123@gmail.com', 9992227775, '56, Fward, Kubernagar  
Ahmedabad');
```

```
INSERT INTO customers(cname, cemail, ccontact, caddress)  
VALUES ('Zeel Modi', 'zeelmodi@gmail.com', 6345678910, 'Near Kasratshala Road, Ahmedabad');
```

```
INSERT INTO customers(cname, cemail, ccontact, caddress)  
VALUES ('Pratibha Hotwani', 'pratibhahotwani@gmail.com', 8758508742, 'Ashram Road,  
Ahmedabad');
```

```
INSERT INTO customers(cname, cemail, ccontact, caddress)  
VALUES ('Vishal Tanwani', 'vishaltanwani@gmail.com', 9173477818, 'Naroda, Ahmedabad');
```

```
INSERT INTO customers(cname, cemail, ccontact, caddress)  
VALUES ('Salman Shah', 'salman123@gmail.com', 9173472518, 'Ashram Road, Ahmedabad');
```

```
INSERT INTO customers(cname, cemail, ccontact, caddress)  
VALUES ('Shahrukh modi', 'shahrumodi@gmail.com', 8273477818, 'Naroda, Ahmedabad');
```

```
INSERT INTO customers(cname, cemail, ccontact, caddress)  
VALUES ('Chetan Mahajan', 'chetanmahjan@gmail.com', 6373477818, 'Law Garden, Ahmedabad');
```

```
INSERT INTO customers(cname, cemail, ccontact, caddress)
VALUES ('Malav Bhavsar', 'tikamlal@gmail.com', 7773477818, 'Krishnanagar, Ahmedabad');
```

```
INSERT INTO customers(cname, cemail, ccontact, caddress)
VALUES ('Deepika Plug', 'deppikahume@gmail.com', 9275277818, 'Dward, Ahmedabad');
```

```
INSERT INTO customers(cname, cemail, ccontact, caddress)
VALUES ('Deepak kalal', 'deepakklal@gmail.com', 8273857818, 'Satelite, Ahmedabad');
```

```
INSERT INTO customers(cname, cemail, ccontact, caddress)
VALUES ('Carry deol', 'deepakklal@gmail.com', 8273857818, 'Satelite, Gandhinagar');
```

```
INSERT INTO customers(cname, cemail, ccontact, caddress)
VALUES ('Ajey kalal', 'ajeynagar@gmail.com', 9191914455, 'Kaulpur, Ahmedabad');
```

```
INSERT INTO customers(cname, cemail, ccontact, caddress)
VALUES ('Bhuvan bham', 'bhuvanbam@gmail.com', 8291914455, 'Marindrive, Ahmedabad');
```

```
INSERT INTO customers(cname, cemail, ccontact, caddress)
VALUES ('Ashish kumar', 'ashishyo@gmail.com', 9191854455, 'Yishapur, Gandhinagar');
```

```
INSERT INTO customers(cname, cemail, ccontact, caddress)
VALUES ('Amit Chop', 'amittata@gmail.com', 7878124533, 'Memco, Ahmedabad');
```

```
INSERT INTO customers(cname, cemail, ccontact, caddress)
VALUES ('Harsh Beniwal', 'harshraja@gmail.com', 9178124533, 'Wakanda, Ahmedabad');
```

```
INSERT INTO customers(cname, cemail, ccontact, caddress)
VALUES ('Amit Haja', 'amittata1@gmail.com', 8778124533, 'Memco, Ahmedabad');
```

```
INSERT INTO customers(cname, cemail, ccontact, caddress)
```



```
VALUES ('Tikam Ganja', 'dunnytikam@gmail.com', 7178124533, 'Kolapur, Ahmedabad');
```

```
INSERT INTO customers(cname, cemail, ccontact, caddress)
```

```
VALUES ('Raja Chand', 'rajkamal@gmail.com', 9778124533, 'Tikamcity, Ahmedabad');
```

```
INSERT INTO customers(cname, cemail, ccontact, caddress)
```

```
VALUES ('Ranvir Shekh', 'ranveer1@gmail.com', 9798124533, 'Knowhere, Ahmedabad');
```

```
INSERT INTO customers(cname, cemail, ccontact, caddress)
```

```
VALUES ('Hitesh moha', 'hiteshyop@gmail.com', 8778454533, 'Kahdinagar Gandhinagar');
```

```
INSERT INTO customers(cname, cemail, ccontact, caddress)
```

```
VALUES ('Nirav Suthar', 'nirav45@gmail.com', 9782353206, 'Sector1, Gandhinagar');
```

```
INSERT INTO customers(cname, cemail, ccontact, caddress)
```

```
VALUES ('Disha shah', 'dishashah@gmail.com', 9782353208, 'Sector2, Gandhinagar');
```

```
INSERT INTO customers(cname, cemail, ccontact, caddress)
```

```
VALUES ('Janin Vakil', 'jainin15@gmail.com', 7878953410, 'Sector3, Gandhinagar');
```

```
INSERT INTO customers(cname, cemail, ccontact, caddress)
```

```
VALUES ('Poonam shah', 'pooonam@gmail.com', 9782353781, 'Sector4, Gandhinagar');
```

```
INSERT INTO customers(cname, cemail, ccontact, caddress)
```

```
VALUES ('Rajiv soni', 'rajeevme@gmail.com', 9182353208, 'Sector6, Gandhinagar');
```

```
INSERT INTO customers(cname, cemail, ccontact, caddress)
```

```
VALUES ('Jignesh soni', 'jigna@gmail.com', 8982461047, 'Sector7, Gandhinagar');
```

```
INSERT INTO customers(cname, cemail, ccontact, caddress)
```

```
VALUES ('Bhavesh baxi', 'bhavebaxi@gmail.com', 7894152634, 'Sarita Park, Gandhinagar');
```

```
INSERT INTO customers(cname, cemail, ccontact, caddress)
```

```
VALUES ('Manish singh', 'singhisking@gmail.com', 8282453100, 'Holapur, Gandhinagar');
```

```
INSERT INTO customers(cname, cemail, ccontact, caddress)
```

```
VALUES ('Tina Kapoor', 'tinamina@gmail.com', 6388410504, 'Rajvir, Ahmedabad');
```

## 5. Vehicles:

```
INSERT INTO vehicles(
```

```
    engine_no, regis_no, year_purch, cid, model_id)
```

```
VALUES ( '1B15554747', 'GJ-01SB0503', 2014, 1, 1);
```

```
INSERT INTO vehicles(
```

```
    engine_no, regis_no, year_purch, cid, model_id)
```

```
VALUES ( '5WV1321249', 'GJ-01XY2729', 2011, 1, 3);
```

```
INSERT INTO vehicles(
```

```
    engine_no, regis_no, year_purch, cid, model_id)
```

```
VALUES ( '45G7895631', 'GJ-01TT0729', 2011, 3, 2);
```

```
INSERT INTO vehicles(
```

```
    engine_no, regis_no, year_purch, cid, model_id)
```

```
VALUES ( '4PP1321249', 'GJ-01FG4510', 2015, 4, 5);
```

```
INSERT INTO vehicles(
```

```
    engine_no, regis_no, year_purch, cid, model_id)
```

```
VALUES ( '5YT5621249', 'GJ-18AS1001', 2017, 5, 4);
```

```
INSERT INTO vehicles(
```

```
engine_no, regis_no, year_purch, cid, model_id)
VALUES ( '5WV1421249', 'GJ-01RF4567', 2011, 2, 6);
```

```
INSERT INTO vehicles(
    engine_no, regis_no, year_purch, cid, model_id)
VALUES ( '5WV1420219', 'GJ-01RG6942', 2012, 6, 7);
```

```
INSERT INTO vehicles(
    engine_no, regis_no, year_purch, cid, model_id)
VALUES ( '5WV1420210', 'GJ-01RG6943', 2013, 6, 8);
```

```
INSERT INTO vehicles(
    engine_no, regis_no, year_purch, cid, model_id)
VALUES ( '5WV1420217', 'GJ-01RG6956', 2014, 7, 8);
```

```
INSERT INTO vehicles(
    engine_no, regis_no, year_purch, cid, model_id)
VALUES ( '5RTW142027', 'GJ-01RG6951', 2014, 7, 9);
```

```
INSERT INTO vehicles(
    engine_no, regis_no, year_purch, cid, model_id)
VALUES ( '5RTW142028', 'GJ-01HT7896', 2010, 8, 9);
```

```
INSERT INTO vehicles(
    engine_no, regis_no, year_purch, cid, model_id)
VALUES ( '5YT5621240', 'GJ-01HT7812', 2010, 8, 10);
```

```
INSERT INTO vehicles(
    engine_no, regis_no, year_purch, cid, model_id)
VALUES ( '5YT5621245', 'GJ-01HT7810', 2010, 9, 10);
```

```
INSERT INTO vehicles(  
    engine_no, regis_no, year_purch, cid, model_id)  
VALUES ( '5YT5621244', 'GJ-01HT7812', 2010, 9, 11);
```

```
INSERT INTO vehicles(  
    engine_no, regis_no, year_purch, cid, model_id)  
VALUES ( '5YT5621345', 'GJ-01HT7202', 2017, 10, 11);
```

```
INSERT INTO vehicles(  
    engine_no, regis_no, year_purch, cid, model_id)  
VALUES ( '5YC5609345', 'GJ-01HT7200', 2016, 10, 12);
```

```
INSERT INTO vehicles(  
    engine_no, regis_no, year_purch, cid, model_id)  
VALUES ( '5YC5606666', 'GJ-01HT4506', 2016, 11, 12);
```

```
INSERT INTO vehicles(  
    engine_no, regis_no, year_purch, cid, model_id)  
VALUES ( '5YC5606655', 'GJ-01HT4502', 2012, 11, 13);
```

```
INSERT INTO vehicles(  
    engine_no, regis_no, year_purch, cid, model_id)  
VALUES ( '5YT5606655', 'GJ-01FT4502', 2013, 12, 13);
```

```
INSERT INTO vehicles(  
    engine_no, regis_no, year_purch, cid, model_id)  
VALUES ( '5YT5606669', 'GJ-01FT4501', 2013, 13, 14);
```

```
INSERT INTO vehicles(  
    engine_no, regis_no, year_purch, cid, model_id)  
VALUES ( '5YT5606600', 'GJ-01FT4530', 2014, 14, 14);
```

```
INSERT INTO vehicles(  
    engine_no, regis_no, year_purch, cid, model_id)  
VALUES ( '5YT5606665', 'GJ-01FT4666', 2014, 15, 15);
```

```
INSERT INTO vehicles(  
    engine_no, regis_no, year_purch, cid, model_id)  
VALUES ( '5YT8151399', 'GJ-01FT8075', 2015, 16, 16);
```

```
INSERT INTO vehicles(  
    engine_no, regis_no, year_purch, cid, model_id)  
VALUES ( '5YT5875906', 'GJ-01FT9162', 2015, 17, 17);
```

```
INSERT INTO vehicles(  
    engine_no, regis_no, year_purch, cid, model_id)  
VALUES ( '5YT4840746', 'GJ-01FT2834', 2015, 18, 18);
```

```
INSERT INTO vehicles(  
    engine_no, regis_no, year_purch, cid, model_id)  
VALUES ( '5YT3566722', 'GJ-01FT7950', 2015, 19, 19);
```

```
INSERT INTO vehicles(  
    engine_no, regis_no, year_purch, cid, model_id)  
VALUES ( '5YT8549224', 'GJ-01FT8137', 2015, 20, 20);
```

```
INSERT INTO vehicles(  
    engine_no, regis_no, year_purch, cid, model_id)  
VALUES ( '5YT2919015', 'GJ-01FT5560', 2015, 21, 21);
```

```
INSERT INTO vehicles(  
    engine_no, regis_no, year_purch, cid, model_id)
```

```
VALUES ( '5YT4255516', 'GJ-01FT8175', 2015, 22, 22);
```

```
INSERT INTO vehicles(  
    engine_no, regis_no, year_purch, cid, model_id)  
VALUES ( '5YT5450583', 'GJ-01FT8990', 2015, 23, 23);
```

```
INSERT INTO vehicles(  
    engine_no, regis_no, year_purch, cid, model_id)  
VALUES ( '5YT2792256', 'GJ-01FT9049', 2015, 24, 24);
```

```
INSERT INTO vehicles(  
    engine_no, regis_no, year_purch, cid, model_id)  
VALUES ( '5YT7349164', 'GJ-01FT5205', 2015, 25, 25);
```

```
INSERT INTO vehicles(  
    engine_no, regis_no, year_purch, cid, model_id)  
VALUES ( '5YT4727238', 'GJ-01FT3477', 2015, 26, 26);
```

```
INSERT INTO vehicles(  
    engine_no, regis_no, year_purch, cid, model_id)  
VALUES ( '5YT1395415', 'GJ-01FT1412', 2015, 27, 27);
```

```
INSERT INTO vehicles(  
    engine_no, regis_no, year_purch, cid, model_id)  
VALUES ( '5YT7375474', 'GJ-01FT0035', 2015, 28, 28);
```

```
INSERT INTO vehicles(  
    engine_no, regis_no, year_purch, cid, model_id)  
VALUES ( '5YT05919965', 'GJ-01FT4790', 2015, 29, 29);
```

```
INSERT INTO vehicles(  
    engine_no, regis_no, year_purch, cid, model_id)
```

```
engine_no, regis_no, year_purch, cid, model_id)
VALUES ( '5YT7657751', 'GJ-01FT3266', 2015, 30, 30);
```

```
INSERT INTO vehicles(
    engine_no, regis_no, year_purch, cid, model_id)
VALUES ( '5YT0591996', 'GJ-01FT0506', 2015, 31, 31);
```

## 6. Service\_providers:

```
INSERT INTO service_providers(
    pro_name, pro_address, pro_branch, pro_contact, pro_email)
VALUES ('AMAZE SERVICES', '115, HIGHWAY NO-08, AHMEDABAD', 'KRISHNANAGAR',
07922505047, 'amazesrv@gmail.com');
```

```
INSERT INTO service_providers(
    pro_name, pro_address, pro_branch, pro_contact, pro_email)
VALUES ('PUNJAB AUTOWORKS', 'KUBERNAGAR CROSSING, AHMEDABAD', 'KUBERNAGAR',
0796506045, 'pubjanautos@gmail.com');
```

```
INSERT INTO service_providers(
    pro_name, pro_address, pro_branch, pro_contact, pro_email)
VALUES ('ASHISH SERVICE CENTER', 'NEAR LAW GARDEN, AHMEDABAD', 'LAWGARDEN',
9898171215, 'ashishsrv@gmail.com');
```

```
INSERT INTO service_providers(
    pro_name, pro_address, pro_branch, pro_contact, pro_email)
VALUES ('TIKAM GARAGE', 'NARODA ROAD, AHMEDABAD', 'NARODA', 0792252257,
'tikamgarage@gmail.com');
```

## 7. Staff\_details:

```
INSERT INTO staff_details(
    staff_name, staff_contact, pro_id)
VALUES ('Paresh shivnani', 9601506862, 1);
```

```
INSERT INTO staff_details(  
    staff_name, staff_contact, pro_id)  
VALUES ('Sunny Chandwani', 7567982035, 1);
```

```
INSERT INTO staff_details(  
    staff_name, staff_contact, pro_id)  
VALUES ('Devendra Bhurani', 9925050072, 2);
```

```
INSERT INTO staff_details(  
    staff_name, staff_contact, pro_id)  
VALUES ('Hitesh Gunani', 9099199875, 3);
```

```
INSERT INTO staff_details(  
    staff_name, staff_contact, pro_id)  
VALUES ('Manish Bhatia', 7884466225, 3);
```

```
INSERT INTO staff_details(  
    staff_name, staff_contact, pro_id)  
VALUES ('Bharat Kumar', 7878917091, 4);
```

```
INSERT INTO staff_details(  
    staff_name, staff_contact, pro_id)  
VALUES ('Sunny Bhatia', 7567982025, 1);
```

```
INSERT INTO staff_details(  
    staff_name, staff_contact, pro_id)  
VALUES ('Yash Mehta', 9929650072, 2);
```

```
INSERT INTO staff_details(  
    staff_name, staff_contact, pro_id)
```



```
VALUES ('Gagan Bhurani', 9925250072, 2);
```

```
INSERT INTO staff_details(  
    staff_name, staff_contact, pro_id)  
VALUES ('Ramesh Hinduja', 9684466225, 3);
```

```
INSERT INTO staff_details(  
    staff_name, staff_contact, pro_id)  
VALUES ('Tinu Kumar', 7878916091, 4);
```

```
INSERT INTO staff_details(  
    staff_name, staff_contact, pro_id)  
VALUES ('Kamal Khan', 7878916051, 4);
```

## 8. Services:

```
INSERT INTO services(  
    service_info, service_mode, entry_time, exit_time,  
    vehicle_id, staff_id, pay_id)  
VALUES ('Oil Changing and Washing', 'free', '2018-08-12 10:35', '2018-08-12 14:25',  
    1, 1, 1);
```

```
INSERT INTO services(  
    service_info, service_mode, entry_time, exit_time,  
    vehicle_id, staff_id, pay_id)  
VALUES ('HeadLight Change', 'paid', '2018-09-02 12:44', '2018-09-02 16:25',  
    3, 3, 2);
```

```
INSERT INTO services(  
    service_info, service_mode, entry_time, exit_time,  
    vehicle_id, staff_id, pay_id)
```

```
VALUES ('Washing Only', 'paid', '2018-09-10 10:44', '2018-09-10 13:25',  
5, 3, 3);
```

```
INSERT INTO services(  
    service_info, service_mode, entry_time, exit_time,  
    vehicle_id, staff_id, pay_id)  
VALUES ('Change tires and washing', 'PAID', '2018-09-06 11:35', '2018-09-10 20:57',  
6, 2, 4);
```

```
INSERT INTO services(  
    service_info, service_mode, entry_time, exit_time,  
    vehicle_id, staff_id, pay_id)  
VALUES ('Charge battery and washing only', 'PAID', '2018-09-11 10:01', '2018-09-11 13:25',  
7, 4, 5);
```

```
INSERT INTO services(  
    service_info, service_mode, entry_time, exit_time,  
    vehicle_id, staff_id, pay_id)  
VALUES ('Omission repairing', 'PAID', '2018-09-15 09:30', '2018-09-16 13:25',  
4, 1, 6);
```

```
INSERT INTO services(  
    service_info, service_mode, entry_time, exit_time,  
    vehicle_id, staff_id, pay_id)  
VALUES ('Color change and battery charge', 'PAID', '2018-09-17 12:30', '2018-10-17 12:39',  
5, 2, 7);
```

```
INSERT INTO services(  
    service_info, service_mode, entry_time, exit_time,  
    vehicle_id, staff_id, pay_id)  
VALUES ('Washing Only', 'free', '2018-07-10 10:44', '2018-07-10 11:25',
```

6, 5, 1);

```
INSERT INTO services(  
    service_info, service_mode, entry_time, exit_time,  
    vehicle_id, staff_id, pay_id)  
VALUES ('Oil Changing', 'free', '2018-07-11 10:45', '2018-07-11 13:25',  
    7, 4, 1);
```

```
INSERT INTO services(  
    service_info, service_mode, entry_time, exit_time,  
    vehicle_id, staff_id, pay_id)  
VALUES ('Oil Changing', 'free', '2018-07-11 14:45', '2018-07-11 15:55',  
    12, 6, 1);
```

```
INSERT INTO services(  
    service_info, service_mode, entry_time, exit_time,  
    vehicle_id, staff_id, pay_id)  
VALUES ('Oil Changing and Washing Only', 'free', '2018-07-12 12:45', '2018-07-12 14:00',  
    9, 7, 1);
```

```
INSERT INTO services(  
    service_info, service_mode, entry_time, exit_time,  
    vehicle_id, staff_id, pay_id)  
VALUES ('Dent Repairing', 'free', '2018-07-13 09:45', '2018-07-13 11:03',  
    10, 7, 1);
```

```
INSERT INTO services(  
    service_info, service_mode, entry_time, exit_time,  
    vehicle_id, staff_id, pay_id)  
VALUES ('Screw Changing', 'free', '2018-07-14 12:45', '2018-07-14 14:00',  
    11, 2, 1);
```

```
INSERT INTO services(  
    service_info, service_mode, entry_time, exit_time,  
    vehicle_id, staff_id, pay_id)  
VALUES ('HeadLight Repair', 'paid', '2018-07-10 13:24', '2018-07-10 16:05',  
    13, 7, 8);
```

```
INSERT INTO services(  
    service_info, service_mode, entry_time, exit_time,  
    vehicle_id, staff_id, pay_id)  
VALUES ('Oil leakage problem', 'paid', '2018-07-12 13:54', '2018-07-12 17:08',  
    13, 8, 9);
```

```
INSERT INTO services(  
    service_info, service_mode, entry_time, exit_time,  
    vehicle_id, staff_id, pay_id)  
VALUES ('HeadLight Repair', 'paid', '2018-07-14 12:24', '2018-07-14 15:45',  
    14, 9, 10);
```

```
INSERT INTO services(  
    service_info, service_mode, entry_time, exit_time,  
    vehicle_id, staff_id, pay_id)  
VALUES ('washing and oil changing', 'paid', '2018-07-15 14:00', '2018-07-15 15:5',  
    17, 10, 11);
```

```
INSERT INTO services(  
    service_info, service_mode, entry_time, exit_time,  
    vehicle_id, staff_id, pay_id)  
VALUES ('Oil changing', 'paid', '2018-07-16 17:24', '2018-07-16 17:55',  
    20, 11, 12);
```

```
INSERT INTO services(  
    service_info, service_mode, entry_time, exit_time,  
    vehicle_id, staff_id, pay_id)  
VALUES ('Monthly Checkup', 'paid', '2018-07-17 09:24', '2018-07-17 10:05',  
    23, 12, 13);
```

```
INSERT INTO services(  
    service_info, service_mode, entry_time, exit_time,  
    vehicle_id, staff_id, pay_id)  
VALUES ('Side light change', 'paid', '2018-07-18 12:25', '2018-07-18 15:07',  
    21, 5, 14);
```

## **9. Payments:**

```
INSERT INTO payments(  
    pay_id, amount, pay_mode)  
VALUES (1, 0, 'cash');
```

```
INSERT INTO payments(  
    pay_id, amount, pay_mode)  
VALUES (2, 1500, 'cash');
```

```
INSERT INTO payments(  
    pay_id, amount, pay_mode)  
VALUES (3, 220, 'card');
```

```
INSERT INTO payments(  
    pay_id, amount, pay_mode)  
VALUES (4, 300, 'CASH');
```

```
INSERT INTO payments(  
    pay_id, amount, pay_mode)
```

```
VALUES (5, 11010, 'CARD');
```

```
INSERT INTO payments(  
    pay_id, amount, pay_mode)  
VALUES (6, 400, 'CASH');
```

```
INSERT INTO payments(  
    pay_id, amount, pay_mode)  
VALUES (7, 600, 'CASH');
```

```
INSERT INTO payments(  
    pay_id, amount, pay_mode)  
VALUES (8, 420, 'card');
```

```
INSERT INTO payments(  
    pay_id, amount, pay_mode)  
VALUES (9, 110, 'card');
```

```
INSERT INTO payments(  
    pay_id, amount, pay_mode)  
VALUES (10, 2045, 'card');
```

```
INSERT INTO payments(  
    pay_id, amount, pay_mode)  
VALUES (11, 330, 'card');
```

```
INSERT INTO payments(  
    pay_id, amount, pay_mode)  
VALUES (12, 180, 'card');
```

```
INSERT INTO payments(  
    pay_id, amount, pay_mode)
```

```
        pay_id, amount, pay_mode)
VALUES (13, 780, 'card');
```

```
INSERT INTO payments(
        pay_id, amount, pay_mode)
VALUES (14, 1650, 'card');
```

## 10. Feedbacks:

```
INSERT INTO feedbacks(
        feed_des, feed_ratings, service_id)
VALUES ('Very Good Service an timely delivery', 5, 1);
```

```
INSERT INTO feedbacks(
        feed_des, feed_ratings, service_id)
VALUES ('Impressive service with cheaper rates', 4, 2);
```

```
INSERT INTO feedbacks(
        feed_des, feed_ratings, service_id)
VALUES ('They took to much time for washing', 2, 3);
```

```
INSERT INTO feedbacks(
        feed_des, feed_ratings, service_id)
VALUES ('Good work', 3, 8);
```

```
INSERT INTO feedbacks(
        feed_des, feed_ratings, service_id)
VALUES ('Superb Work and nice staff', 4, 9);
```

```
INSERT INTO feedbacks(
        feed_des, feed_ratings, service_id)
```

```
VALUES ('Employee are very friendly', 5, 10);
```

```
INSERT INTO feedbacks(  
    feed_des, feed_ratings, service_id)  
VALUES ('Awesome work in small time', 5, 11);
```

```
INSERT INTO feedbacks(  
    feed_des, feed_ratings, service_id)  
VALUES ('Yes this is good', 4, 12);
```

```
INSERT INTO feedbacks(  
    feed_des, feed_ratings, service_id)  
VALUES ('Great goind keep it up', 3, 13);
```

```
INSERT INTO feedbacks(  
    feed_des, feed_ratings, service_id)  
VALUES ('Great washing but some screws are not tighted', 4, 14);
```

```
INSERT INTO feedbacks(  
    feed_des, feed_ratings, service_id)  
VALUES ('Some changes are needed', 3, 15);
```

```
INSERT INTO feedbacks(  
    feed_des, feed_ratings, service_id)  
VALUES ('There should be some stands for customers', 2, 15);
```

```
INSERT INTO feedbacks(  
    feed_des, feed_ratings, service_id)  
VALUES ('Worst service', 1, 16);
```

```
INSERT INTO feedbacks(  
    feed_des, feed_ratings, service_id)
```



```
        feed_des, feed_ratings, service_id)
VALUES ('Poilte people and fantastic work', 5, 17);
```

```
INSERT INTO feedbacks(
        feed_des, feed_ratings, service_id)
VALUES ('Impressive', 4, 18);
```

```
INSERT INTO feedbacks(
        feed_des, feed_ratings, service_id)
VALUES ('Arrogent workers', 1, 19);
```

```
INSERT INTO feedbacks(
        feed_des, feed_ratings, service_id)
VALUES ('waiting time is very high', 2, 20);
```

```
INSERT INTO feedbacks(
        feed_des, feed_ratings, service_id)
VALUES ('Well done', 3, 21);
```

# Queries

1. Vehicle owners can view their vehicle service history.

$\sigma_{\text{CUSTOMER.CID}=1}(\text{SERVICES} \bowtie (\text{SERVICES.VEHICLE\_ID}=\text{VEHICLES.VEHICLE\_ID}) \text{VEHICLES} \bowtie (\text{VEHICLES.CID}=\text{CUSTOMER.CID}))$

SELECT S.\* FROM SERVICES AS S JOIN VEHICLES AS V ON  
(S.VEHICLE\_ID=V.VEHICLE\_ID) JOIN CUSTOMERS AS C ON (V.CID=C.CID)  
where C.CID=1

	service_id integer	service_info character varying (100)	service_mode character varying (10)	entry_time timestamp without time zone	exit_time timestamp without time zone	vehicle_id integer	staff_id integer	pay_id integer
1	1	Oil Changing and Washing	free	2018-08-12 10:35:00	2018-08-12 14:25:00	1	1	1
2	4	Spare parts change	paid	2018-10-01 05:22:00	2018-10-01 05:22:00	1	1	2

2. Service providers can view all customer records.

$\sigma_{\text{SERVICE\_PROVIDER.PRO\_ID}=2}(\text{CUSTOMERS} \bowtie (\text{CUSTOMERS.CID}=\text{VEHICLES.VID}) \text{VEHICLES} \bowtie (\text{SERVICES.VEHICLE\_ID}=\text{VEHICLES.CID}) \text{SERVICES} \bowtie (\text{STAFF\_DETAILS.STAFF\_ID}=\text{SERVICES.STAFF\_ID}) \text{STAFF\_DETAILS} \bowtie (\text{STAFF\_DETAILS.STAFF\_ID}=\text{SERVICE\_PROVICER.PRO\_ID}) \text{SERVICE\_PROVIDERS})$

select c.\* from customers as c join vehicles as v on (c.cid=v.cid) join  
services as s on(s.vehicle\_id=v.vehicle\_id) join staff\_details as sd on  
(s.staff\_id=sd.staff\_id) join service\_providers as sp  
on(sd.pro\_id=sp.pro\_id) where sp.pro\_id=2

	cid integer	cname character varying (50)	cemail character varying (30)	ccontact bigint	caddress character varying (100)
1	3	Zeel Modi	zeelmodi@gmail.com	6345678910	Near Kasratshala Road, Ah...
2	5	Vishal Tanwani	vishaltanwani@gmail.com	9173477818	Naroda, Ahmedabad
3	9	Malav Bhavsar	tikamlal@gmail.com	7773477818	Krishnanagar, Ahmedabad
4	9	Malav Bhavsar	tikamlal@gmail.com	7773477818	Krishnanagar, Ahmedabad

3. Service providers can view all their staff details.

$\sigma_{SP.PRO\_ID=3}(\rho(SP, SERVICE\_PROVIDER) \bowtie$   
 $(SP.PRO\_ID=SD.PRO\_ID) \rho(SP, STAFF\_DETAILS))$

SELECT sd.\* FROM SERVICE\_PROVIDERS AS SP JOIN STAFF\_DETAILS AS SD  
ON (SP.PRO\_ID=SD.PRO\_ID) where sp.pro\_id=3

	staff_id integer	staff_name character varying (50)	staff_contact bigint	pro_id integer
1	4	Hitesh Gunani	9099199875	3
2	5	Manish Bhatia	7884466225	3
3	10	Ramesh Hinduja	9684466225	3

4. Service providers can search vehicle based reports.

$\sigma_{SP.PRO\_ID=2 \text{ AND } VM.MODEL\_ID='i10'}($   
 $\rho(C, CUSTOMER) \bowtie_{(C.CID=V.CID)} \rho(V, VEHICLES) \bowtie$   
 $(S.VEHICLES\_ID=V.VEHICLES\_ID) \rho(S, SERVICES) \bowtie$   
 $(S.STAFF\_ID=SD.STAFF\_ID) \rho(SD, STAFF\_DETAILS) \bowtie$   
 $(SD.PRO\_ID=SP.PRO\_ID) \rho(SP, SERVICE\_PROVIDER) \bowtie$   
 $(V.MODEL\_ID=VM.MODEL\_ID) \rho(VM, VEHICLE\_MODEL))$

```
select vm.* from customers as c join vehicles as v on (c.cid=v.cid) join
services as s on(s.vehicle_id=v.vehicle_id) join staff_details as sd on
(s.staff_id=sd.staff_id) join service_providers as sp
on(sd.pro_id=sp.pro_id) join vehicle_models as vm
on(v.model_id=vm.model_id) where sp.pro_id=2 and
vm.model_name='i10'
```

	model_id integer	model_name character varying (20)	unit_type character varying (5)	cubic_cm integer	manu_id integer	type_id integer
1	4	i10	cc	1000	5	4

5. Retrieve customers who have vehicles such as activa etc.

$\rho(C, CUSTOMERS) \bowtie_{(C.CID=V.CID)} \rho(V, VEHICLES) \bowtie_{(V.MODEL\_ID=VM.MODEL\_ID)} \rho(VM, VEHICLE\_MODEL)$

```
SELECT C.* FROM CUSTOMERS AS C join VEHICLES AS V on (C.cid=V.cid)
JOIN VEHICLE_MODELS AS VM ON (V.MODEL_ID=VM.MODEL_ID) WHERE
VM.MODEL_NAME='Activa'
```

	cid integer	cname character varying (50)	cemail character varying (30)	ccontact bigint	caddress character varying (100)
1	1	Mohit Tanwani	mohitmurlidhar@gmail.c...	8490924384	115, Dward, Kubernagar A...
2	31	Tina Kapoor	tinamina@gmail.com	6388410504	Rajvir, Ahmedabad

6. Retrieve customers who have two wheelers.

$\sigma_{VT.WHEELS=2}$

$$(\rho(C, CUSTOMERS) \bowtie_{(C.CID=V.CID)} \rho(V, VEHICLES) \bowtie_{(V.MODEL\_ID=VM.MODEL\_ID)} \rho(VM, VEHICLE\_MODELS) \bowtie_{(VM.TYPE\_ID=VT.TYPE\_ID)} \rho(VT, VEHICLE\_TYPES))$$

```
SELECT C.* FROM CUSTOMERS AS C join VEHICLES AS V on (C.cid=V.cid)
JOIN VEHICLE_MODELS AS VM ON (V.MODEL_ID=VM.MODEL_ID) JOIN
VEHICLE_TYPES AS VT ON (VM.TYPE_ID=VT.TYPE_ID) WHERE
VT.wheels=2
```

	cid integer	cname character varying (50)	cemail character varying (30)	ccontact bigint	caddress character varying (100)
1	1	Mohit Tanwani	mohitmurlidhar@gmail.c...	8490924384	115, Dward, Kubernagar A...
2	2	Malav Shah	malavshah123@gmail.com	9992227775	56, Fward, Kubernagar Ah...
3	6	Salman Shah	salman123@gmail.com	9173472518	Ashram Road, Ahmedabad
4	6	Salman Shah	salman123@gmail.com	9173472518	Ashram Road, Ahmedabad
5	8	Chetan Mahajan	chetanmahjan@gmail.com	6373477818	Law Garden, Ahmedabad
6	8	Chetan Mahajan	chetanmahjan@gmail.com	6373477818	Law Garden, Ahmedabad
7	7	Shahrukh modi	shahrumodi@gmail.com	8273477808	Naroda, Ahmedabad
8	7	Shahrukh modi	shahrumodi@gmail.com	8273477808	Naroda, Ahmedabad
9	9	Malav Bhavsar	tikamlal@gmail.com	7773477818	Krishnanagar, Ahmedabad
10	31	Tina Kapoor	tinamina@gmail.com	6388410504	Rajvir, Ahmedabad

7. Retrieve the number of customers who have 'truck'

$$\pi_{MODEL\_NAME, COUNT(MODEL\_NAME)} (\sigma_{VM.MODEL\_NAME='Truck'} \rightarrow MODEL\_NAME ((\rho(C, CUSTOMERS) \bowtie_{(C.CID=V.CID)} \rho(V, VEHICLES) \bowtie_{(V.MODEL\_ID=VM.MODEL\_ID \text{ AND } )} \rho(VM, VEHICLE\_MODELS))))$$

```
SELECT vm.model_name, Count(vm.model_name) FROM CUSTOMERS AS
C join VEHICLES AS V on (C.cid=V.cid) JOIN VEHICLE_MODELS AS VM ON
(V.MODEL_ID=VM.MODEL_ID) WHERE VM.MODEL_NAME='Activa' group
by vm.model_name
```

	model_name character varying (20)	count bigint
1	Activa	2

8. Retrieve number of manufacturers for particular vehicle.

$\pi$  MODEL\_NAME,MODEL\_NAME ( $\rho$ (M,MANUFACTURES)  $\bowtie$   
(M.MANU\_ID=VM.MANU\_ID)  $\rho$ (VM,VEHICLE\_MODELS)

Select m.manu\_name,vm.model\_name from manufacturers as m join  
vehicle\_models as vm on (m.manu\_id=vm.manu\_id)

	manu_name character varying (50)	model_name character varying (20)
1	Honda	Activa
2	Honda	Honda City
3	Tata	Indigo
4	Hyundai	i10
5	Maruti	Zen
6	Honda	CB Shine
7	Honda	CBR
8	Hero	Maestro
9	Hero	Passion
10	Hero	Splendor
11	Maruti	Omni
12	Maruti	Dzire
13	Maruti	Nano
14	Tata	Tata Bus
15	Tata	Tata Ace
16	Hyundai	i20
17	Hyundai	Creta
18	Hyundai	Verna
19	Mahindra	XUV
20	Mahindra	KUV
21	Mahindra	Mahindra Truck
22	Renualt	Duster
23	Renualt	Kwid
24	Renualt	Lodgy
25	Volvo	V40
26	Volvo	S60
27	Volkswegan	Polo
28	Volkswegan	Vento

9. Retrieve number of times vehicle has come for service.

$\pi$  COUNT(SERVICE\_ID) ( $\sigma$  VEHICLE\_ID=1 (SERVICES))

Select count(service\_id) from services where vehicle\_id=1

	count bigint
1	2

10.Retrieve staff details for service.

$\rho(S, SERVICES) \bowtie_{(S.STAFF\_ID=SD.STAFF\_ID)}$   
 $\rho(SD, STAFF\_DETAILS)$

select s.\*, sd.staff\_name from services as S join staff\_details as sd  
on(s.staff\_id=sd.staff\_id)

	service_id integer	service_info character varying (100)	service_mode character varying (10)	entry_time timestamp without time zone	exit_time timestamp without time zone	vehicle_id integer	staff_id integer	pay_id integer	staff_name character varying (50)
1	2	HeadLight Change	paid	2018-09-02 12:44:00	2018-09-02 16:25:00	3	3	2	Devendra Bhurani
2	1	Oil Changing and Washing	free	2018-08-12 10:35:00	2018-08-12 14:25:00	1	1	1	Paresh shivnani
3	3	Washing Only	paid	2018-09-10 10:44:00	2018-09-10 13:25:00	5	3	3	Devendra Bhurani
4	4	Spare parts change	paid	2018-10-01 05:22:00	2018-10-01 05:22:00	1	1	2	Paresh shivnani
5	6	Charge battery and washin...	paid	2018-09-11 10:01:00	2018-09-11 13:25:00	7	4	5	Hitesh Gunani
6	5	Change tires and washing	paid	2018-09-06 11:35:00	2018-09-10 20:57:00	6	2	4	Sunny Chandwani
7	8	Color change and battery c...	paid	2018-09-17 12:30:00	2018-10-17 12:39:00	5	2	7	Sunny Chandwani
8	7	Omission repairing	paid	2018-09-15 09:30:00	2018-09-16 13:25:00	4	1	6	Paresh shivnani
9	13	Washing Only	free	2018-07-10 10:44:00	2018-07-10 11:25:00	6	5	1	Manish Bhatia
10	14	Oil Changing	free	2018-07-11 10:45:00	2018-07-11 13:25:00	7	4	1	Hitesh Gunani
11	15	Oil Changing	free	2018-07-11 14:45:00	2018-07-11 15:55:00	12	6	1	Bharat Kumar
12	16	Oil Changing and Washing ...	free	2018-07-12 12:45:00	2018-07-12 14:00:00	9	7	1	Sunny Bhatia
13	17	Dent Repairing	free	2018-07-13 09:45:00	2018-07-13 11:03:00	10	7	1	Sunny Bhatia
14	18	Screw Changing	free	2018-07-14 12:45:00	2018-07-14 14:00:00	11	2	1	Sunny Chandwani
15	19	HeadLight Repair	paid	2018-07-10 13:24:00	2018-07-10 16:05:00	13	7	8	Sunny Bhatia
16	20	Oil leakage problem	paid	2018-07-12 13:54:00	2018-07-12 17:08:00	13	8	9	Yash Mehta
17	21	HeadLight Repair	paid	2018-07-14 12:24:00	2018-07-14 15:45:00	14	9	10	Gagan Bhurani
18	22	washing and oil changing	paid	2018-07-15 14:00:00	2018-07-15 15:05:00	17	10	11	Ramesh Hinduja
19	23	Oil changing	paid	2018-07-16 17:24:00	2018-07-16 17:55:00	20	11	12	Tinuj Kumar
20	24	Monthly Checkup	paid	2018-07-17 09:24:00	2018-07-17 10:05:00	23	12	13	Kamal khan
21	25	Side light change	paid	2018-07-18 12:25:00	2018-07-18 15:07:00	21	5	14	Manish Bhatia

11.Retrieve the details of free services of particular vehicle.

$\sigma_{S.SERVICE\_MODE="FREE"}(\rho(S, SERVICES) \bowtie_{(S.VEHICLE\_ID=V.VEHICLE\_ID)} \rho(V, VEHICLES))$

select s.\* from services as s join vehicles as V on  
(s.vehicle\_id=v.vehicle\_id) where s.service\_mode='free'

	service_id integer	service_info character varying (100)	service_mode character varying (10)	entry_time timestamp without time zone	exit_time timestamp without time zone	vehicle_id integer	staff_id integer	pay_id integer
1	1	Oil Changing and Washing	free	2018-08-12 10:35:00	2018-08-12 14:25:00	1	1	1
2	13	Washing Only	free	2018-07-10 10:44:00	2018-07-10 11:25:00	6	5	1
3	14	Oil Changing	free	2018-07-11 10:45:00	2018-07-11 13:25:00	7	4	1
4	17	Dent Repairing	free	2018-07-13 09:45:00	2018-07-13 11:03:00	10	7	1
5	16	Oil Changing and Washing ...	free	2018-07-12 12:45:00	2018-07-12 14:00:00	9	7	1
6	15	Oil Changing	free	2018-07-11 14:45:00	2018-07-11 15:55:00	12	6	1
7	18	Screw Changing	free	2018-07-14 12:45:00	2018-07-14 14:00:00	11	2	1

12.Retrieve service providers with maximum customer satisfaction.

$\pi$  DISTINCT(PRO



$\rho(\text{SP}, \text{SERVICE\_PROVIDER}) \bowtie$   
 $(\text{SP.PRO\_ID}=\text{SD.PRO\_ID}) \rho(\text{SD}, \text{STAFF\_DETAILS}) \bowtie$   
 $(\text{SD.STAFF\_ID}=\text{S.STAFF\_ID}) \sigma_{\text{F.FEED\_RATING}=5}(\rho(\text{S}, \text{SERVICES}) \bowtie$   
 $(\text{F.SERVICE\_ID}=\text{S.SERVICE\_ID}) \rho(\text{F}, \text{FEEDBACK}))$

select distinct sp.\* from service\_providers as sp join staff\_details as sd on  
 (sp.pro\_id=sd.pro\_id) join services as s on (sd.staff\_id=s.staff\_id) join  
 feedbacks as f on (f.service\_id=s.service\_id) where f.feed\_ratings=5

	pro_id integer	pro_name character varying (50)	pro_address character varying (100)	pro_branch character varying (20)	pro_contact bigint	pro_email character varying (30)
1	1	AMAZE SERVICES	115, HIGHWAY NO-08, AH...	KRISHNANAGAR	7922505047	amazesrv@gmail.com

13. Vehicles of which manufacturers required more services than others.

$\pi_{\text{MANU\_ID}} \mathcal{F}_{\text{COUNT}(\text{MANU\_ID}), \text{MANU\_NAME}}(\rho(\text{S}, \text{SERVICES}) \bowtie$   
 $(\text{S.VEHICLE\_ID}=\text{V.VEHICLE\_ID}) \rho(\text{V}, \text{VEHICLES}) \bowtie$   
 $(\text{V.MODEL\_ID}=\text{VM.MODEL\_ID}) \rho(\text{VM}, \text{VEHICLE\_MODELS}) \bowtie$   
 $(\text{VM.MANU\_ID}=\text{M.MANU\_ID}) \rho(\text{M}, \text{MANUFACTURES}))$

select count(m.manu\_id), m.manu\_name from services as s join vehicles  
 as v on (s.vehicle\_id=v.vehicle\_id) join vehicle\_models as vm on  
 (v.model\_id=vm.model\_id) join manufacturers as m on  
 (vm.manu\_id=m.manu\_id) group by m.manu\_id order by  
 count(m.manu\_id) desc limit 1

	count bigint	manu_name character varying (50)
1	7	Honda

14. Retrieve manufacturers who has sold maximum vehicles.

$$\pi_{\text{MANU\_ID}} \mathcal{F}_{\text{COUNT}(\text{MANU\_ID}), \text{MANU\_NAME}} (\rho(\text{V}, \text{VEHICLES}) \bowtie$$

$$(\text{V.MODEL\_ID} = \text{VM.MODEL\_ID}) \rho(\text{VM}, \text{VEHICLE\_MODELS}) \bowtie$$

$$(\text{VM.MANU\_ID} = \text{M.MANU\_ID}) \rho(\text{M}, \text{MANUFACTURES}))$$

```
select count(m.manu_id), m.manu_name from vehicles as v join
vehicle_models as vm on (v.model_id=vm.model_id) join manufacturers
as m on (vm.manu_id=m.manu_id) group by m.manu_id order by
count(m.manu_id) desc limit 1
```

	count bigint	manu_name character varying (50)
1	7	Maruti

15. Retrieve service providers who had done maximum service for particular vehicle.

$$\rho(\text{SP}, \text{SERVICE\_PROVIDER}) \bowtie$$

$$(\text{SP.SERVICE\_PRO\_ID} = \text{S.SERVICE\_PRO\_ID}) \rho(\text{S}, \text{SERVICES}) \bowtie$$

$$(\text{V.MODEL\_ID} = \text{VM.MODEL\_ID})$$

$$\sigma_{\text{VM.MODEL\_NAME} = \text{'Activa'}} (\rho(\text{V}, \text{VEHICLES}) \bowtie$$

$$(\text{VM.MODEL\_ID} = \text{VM.MANU\_ID}) \rho(\text{VM}, \text{VEHICLE\_MODELS}))$$

```
select sd.* from staff_details as sd join services as ss
on(sd.staff_id=ss.staff_id) join vehicles as vc on(ss.vehicle_id=vc.vehicle_id)
join vehicle_models as vv on(vc.model_id=vv.model_id) where
vv.model_name='i10';
```

	staff_id integer	staff_name character varying (50)	staff_contact bigint	pro_id integer
1	2	Sunny Chandwani	7567982035	1
2	3	Devendra Bhurani	9925050072	2

16. Retrieve staff names who had done service till now for particular vehicle.

$M \leftarrow \pi_{\text{model\_id}} (\sigma_{\text{model\_name}='i10'} (\text{VEHICLE\_MODELS}))$

$V \leftarrow \pi_{\text{vehicle\_id}} (\text{VEHICLES})$

$VM \leftarrow M \bowtie V_{(m.\text{model\_id}=vm.\text{model\_id})}$

$\text{Result} \leftarrow \pi_{\text{staff\_name}} \sigma_{\text{vehicle\_id}=vm.\text{vehicle\_id}}$

$(\text{STAFF\_DETAILS} \bowtie_{(\text{staff\_details}.\text{staff\_id}=\text{services}.\text{staff\_id})}$   
 $\text{SERVICES})$

```
SELECT S.STAFF_NAME FROM vehicle_mgmt.STAFF_DETAILS AS S JOIN
vehicle_mgmt.SERVICES AS SS ON SS.STAFF_ID=S.STAFF_ID WHERE
SS.VEHICLE_ID IN (SELECT V.VEHICLE_ID FROM vehicle_mgmt.VEHICLES
AS V JOIN (SELECT M.MODEL_ID FROM vehicle_mgmt.VEHICLE_MODELS
AS M WHERE M.model_name like 'i10') AS VM ON
V.MODEL_ID=VM.MODEL_ID)
```

	staff_name character varying (50)
1	Devendra Bhurani
2	Sunny Chandwani
3	Devendra Bhurani
4	Manish Bhatia
5	Manish Bhatia

17. Retrieve number of staffs according to service providers.

$$\pi_{\text{PRO\_ID}, \text{PRO\_NAME}, \mathcal{F}\text{COUNT}(\text{STAFF\_ID})}(\rho(\text{SD}, \text{STAFF\_DETAILS}) \bowtie_{(\text{SD.PRO\_ID}=\text{SP.PRO\_ID})} \rho(\text{SP}, \text{SERVICE\_PROVIDER}))$$

Select sp.pro\_name, count(sd.staff\_id) from staff\_details as sd join service\_providers as sp on (sd.pro\_id=sp.pro\_id) group by sp.pro\_id

	pro_name character varying (50)	count bigint
1	AMAZE SERVICES	3
2	ASHISH SERVICE CENTER	3
3	TIKAM GARAGE	3
4	PUNJAB AUTOWORKS	3

18. Retrieve customer detail who have purchased vehicles after particular years.

$$\sigma_{\text{V.YEAR\_PURCH} \geq 2015}(\rho(\text{C}, \text{CUSTOMERS}) \bowtie_{(\text{C.CID}=\text{V.CID})} \rho(\text{V}, \text{VEHICLES}))$$

Select c.\* from customers as c join vehicles as v on (c.cid=v.cid) where v.year\_purch>=2015

	cid integer	cname character varying (50)	cemail character varying (30)	ccontact bigint	caddress character varying (100)
1	4	Pratibha Hotwani	pratibhahotwani@gmail.c...	8758508742	Ashram Road, Ahmedabad
2	5	Vishal Tanwani	vishaltanwani@gmail.com	9173477818	Naroda, Ahmedabad
3	11	Deepak kalal	deepakklal@gmail.com	8273854818	Satelite, Ahmedabad
4	16	Amit Chop	amittata@gmail.com	7878124533	Memco, Ahmedabad
5	18	Amit Haja	amittata1@gmail.com	8778124533	Memco, Ahmedabad
6	17	Harsh Beniwal	harshraja@gmail.com	9178124533	Wakanda, Ahmedabad
7	19	Tikam Ganja	dunnytikam@gmail.com	7178124533	Kolapur, Ahmedabad
8	10	Deepika Plug	deppikahume@gmail.com	9275277818	Dward, Ahmedabad
9	10	Deepika Plug	deppikahume@gmail.com	9275277818	Dward, Ahmedabad
10	25	Janin Vakil	jainin15@gmail.com	7878953410	Sector3, Gandhinagar
11	26	Poonam shah	pooonam@gmail.com	9782353781	Sector4, Gandhinagar
12	27	Rajiv soni	rajeevme@gmail.com	9182353208	Sector6, Gandhinagar
13	28	Jignesh soni	jigna@gmail.com	8982461047	Sector7, Gandhinagar
14	21	Ranvir Shekh	ranveer1@gmail.com	9798124533	Knowhere, Ahmedabad
15	22	Hitesh moha	hiteshyop@gmail.com	8778454533	Kahdinagar Gandhinagar
16	23	Nirav Suthar	nirav45@gmail.com	9782353206	Sector1, Gandhinagar
17	24	Disha shah	dishashah@gmail.com	9782353208	Sector2, Gandhinagar
18	20	Raja Chand	rajkamal@gmail.com	9778124533	Tikamcity, Ahmedabad
19	31	Tina Kapoor	tinamina@gmail.com	6388410504	Rajvir, Ahmedabad
20	29	Bhavesh baxi	bhavebaxi@gmail.com	7894152634	Sarita Park, Gandhinagar

19. Select list of customers who have not serviced their vehicles yet.

$$(\rho(C, CUSTOMERS) \bowtie_{(C.CID=V.CID)} \rho(V, VEHICLES)) - (\rho(C, CUSTOMERS) \bowtie_{(C.CID=V.CID)} \rho(V, VEHICLES) \bowtie_{(V.VEHICLE\_ID=S.VEHICLE\_ID)} \rho(S, SERVICES))$$

Select c.\* from customers as c join vehicles as v on(c.cid=v.cid) except  
Select c.\* from customers as c join vehicles as v on(c.cid=v.cid) join  
services as s on (v.vehicle\_id=s.vehicle\_id)

	cld integer	cname character varying (50)	cemail character varying (30)	ccontact bigint	caddress character varying (100)
1	24	Disha shah	dishashah@gmail.com	9782353208	Sector2, Gandhinagar
2	21	Ranvir Shekh	ranveer1@gmail.com	9798124533	Knowhere, Ahmedabad
3	15	Ashish kumar	ashishyo@gmail.com	9191854455	Yishapur, Gandhinagar
4	19	Tikam Ganja	dunnytikam@gmail.com	7178124533	Kolapur, Ahmedabad
5	12	Carry deol	deepaklal@gmail.com	8273857818	Satelite, Gandhinagar
6	27	Rajiv soni	rajeevme@gmail.com	9182353208	Sector6, Gandhinagar
7	28	Jignesh soni	jigna@gmail.com	8982461047	Sector7, Gandhinagar
8	17	Harsh Beniwal	harshraja@gmail.com	9178124533	Wakanda, Ahmedabad
9	25	Janin Vakil	jainin15@gmail.com	7878953410	Sector3, Gandhinagar
10	18	Amit Haja	amittata1@gmail.com	8778124533	Memco, Ahmedabad
11	22	Hitesh moha	hiteshyop@gmail.com	8778454533	Kahdinagar Gandhinagar
12	31	Tina Kapoor	tinamina@gmail.com	6388410504	Rajvir, Ahmedabad
13	26	Poonam shah	pooonam@gmail.com	9782353781	Sector4, Gandhinagar
14	23	Nirav Suthar	nirav45@gmail.com	9782353206	Sector1, Gandhinagar
15	20	Raja Chand	rajkamal@gmail.com	9778124533	Tikamcity, Ahmedabad
16	29	Bhavesh baxi	bhavebaxi@gmail.com	7894152634	Sarita Park, Gandhinagar
17	30	Manish singh	singhisking@gmail.com	8282453100	Holapur, Gandhinagar
18	10	Deepika Plug	deppikahume@gmail.com	9275277818	Dward, Ahmedabad

20.Retrieve vehicle types who requires maximum services.

```
CG      <-      ((type_id)F(type_id)      VEHICLE_TYPES      ⋈
(vehicle_types.type_id=vehicle_models.type_id) VEHICLE_MODEL
⋈      (vehicle_models.model_id=vehicles.model_id) VEHICLES ⋈
(vehicles.vehicle_id=services.vehicle_id) SERVICES )
```

```
CGG <- π   cg.type_id (CG)
```

```
Result<-      π   type_name      (VEHICLE_TYPES      ⋈
(vehicle_types.type_id=cgg.type_id) CGG)
```

```
select vtt.type_name from vehicle_mgmt.vehicle_types as vtt where
vtt.type_id IN
```

```
(select cg.type_id as sty from
```

```
(select count(vt.type_id) as vhcl_t,vt.type_id as typess from
```

```
vehicle_mgmt.vehicle_types as vt join
```

```
vehicle_mgmt.vehicle_models as vm on vm.type_id=vt.type_id
```

```
join vehicle_mgmt.vehicles as v on vm.model_id=v.model_id
```

```
join vehicle_mgmt.services as s on v.vehicle_id=s.vehicle_id group by
vt.type_id order by vhcl_t desc limit 1) as cg);
```

	type_name character varying (20)
1	Car

21. Which customer have paid maximum amount of payment.

$$(\rho(P, PAYMENTS) \bowtie_{(P.PAY\_ID=S.PAY\_ID)} \rho(S, SERVICES) \\ \bowtie_{(S.VEHICLE\_ID=V.VEHICLE\_ID)} \rho(V, VEHICLES) \bowtie_{(C.CID=V.CID)} \\ \rho(C, CUSTOMERS))$$

```
select c.* from payments as p join services as s on (p.pay_id=s.pay_id)
join vehicles as v on (s.vehicle_id=v.vehicle_id) join customers as c on
(c.cid=v.cid) order by p.amount desc limit 1
```

	cid integer	cname character varying (50)	cemail character varying (30)	ccontact bigint	caddress character varying (100)
1	6	Salman Shah	salman123@gmail.com	9173472518	Ashram Road, Ahmedabad

22. Which service provider had received maximum amount for servicing particular vehicle.

$$(\rho(P, PAYMENTS) \bowtie_{(P.PAY\_ID=S.PAY\_ID)} \rho(S, SERVICES) \bowtie_{(S.STAFF\_ID=SD.STAFF\_ID)} \rho(SD, STAFF\_DETAILS) \bowtie_{(S.STAFF\_ID=SD.STAFF\_ID)} \rho(SP, SERVICE\_PROVIDERS))$$

select sp.\* from payments as p join services as s on (p.pay\_id=s.pay\_id)  
 join staff\_details as sd on (s.staff\_id=sd.staff\_id) join service\_providers as  
 sp on (sd.pro\_id=sp.pro\_id) order by p.amount desc limit 1

	pro_id integer	pro_name character varying (50)	pro_address character varying (100)	pro_branch character varying (20)	pro_contact bigint	pro_email character varying (30)
1	3	ASHISH SERVICE CENTER	NEAR LAW GARDEN, AHME...	LAWGARDEN	9898171215	ashishsrv@gmail.com

23. Which vehicle had required maximum time to service.

$$\pi_{VEHICLE\_ID, (EXIT\_TIME-ENTRY\_TIME)}(\rho(V, VEHICLES) \bowtie_{(S.VEHICLE\_ID=V.VEHICLE\_ID)} \rho(S, SERVICES))$$

Select v.vehicle\_id,s.exit\_time-s.entry\_time FROM vehicles as v JOIN  
 services as s on (s.vehicle\_id=v.vehicle\_id) order by s.exit\_time-  
 s.entry\_time desc



	vehicle_id integer	time interval
1	5	30 days 00:09:00
2	6	4 days 09:22:00
3	4	1 day 03:55:00
4	1	03:50:00
5	3	03:41:00
6	7	03:24:00
7	14	03:21:00
8	13	03:14:00
9	21	02:42:00
10	13	02:41:00
11	5	02:41:00
12	7	02:40:00
13	10	01:18:00
14	9	01:15:00
15	11	01:15:00
16	12	01:10:00
17	17	01:05:00
18	23	00:41:00
19	6	00:41:00
20	20	00:31:00

24. Which payment method customers are most likely to use.

$\pi_{\mathcal{F}_{\text{COUNT}(*), \text{PAY\_MODE}}}(\text{PAYMENTS})$

Select pay\_mode from payments group by pay\_mode order by count(\*) desc limit 1

	pay_mode
	character varying (10)
1	card

25. Which service time customer prefers most?

QQ <- month  $\mathcal{F}$  (count(month)) SERVICES

Result <-  $\pi$  QQ.months (QQ)

select qq.months from (select count(extract(month from s.entry\_time)) as sg, extract(month from s.entry\_time) as months from vehicle\_mgmt.services as s group by extract(month from s.entry\_time) order by sg desc limit 1) as qq;

	months
	double precision
1	9

26. Retrieve top 5 staff details who had maximum ratings in their service feedback for particular vehicle type.

HG <-  $\pi$  model\_id ( $\sigma$  type\_name='Car' VEHICLE\_MODELS  $\bowtie$   
(vehicle\_models.model\_id=vehicle\_types.model\_id) VEHICLE\_TYPES)

R1 <-  $\pi_{\text{vehicle\_id}}$  (VEHICLES  $\bowtie$  (vehicles.model\_id=HG.model\_id)  
HG)

R2 <-  $\pi_{\text{staff\_id}, \text{feed\_ratings}}$  (SERVICES  $\bowtie$   
(services.service\_id=feedbacks.service\_id) FEEDBACKS  $\bowtie$   
(feedbacks.vehicle\_id=R1.vehicle\_id) R1)

R3 <-  $\pi_{\text{staff\_id}}$  (R2)

Result <-  $\pi_{\text{staff\_name}}$  (STAFF\_DETAILS  $\bowtie$   
(staff\_details.staff\_id=R3.staff\_id) R3)

select sd.staff\_name from vehicle\_mgmt.staff\_details as sd where  
sd.staff\_id in (select distinct(hj.gh) as sids from (select ss.staff\_id as  
gh,ff.feed\_ratings from vehicle\_mgmt.services as ss join  
vehicle\_mgmt.feedbacks as ff on ss.service\_id=ff.service\_id where  
ss.vehicle\_id IN (select vv.vehicle\_id from vehicle\_mgmt.vehicles as vv  
where vv.model\_id IN (select vm.model\_id from  
vehicle\_mgmt.vehicle\_models as vm join vehicle\_mgmt.vehicle\_types as vt  
on vm.type\_id=vt.type\_id where vt.type\_name='Car')) order by  
ff.feed\_ratings desc LIMIT 5) as hj);

	staff_name character varying (50)
1	Sunny Chandwani
2	Paresh shivnani
3	Devendra Bhurani

27. List all the customers who had given feedback for all services.

select v1.cid,v3.cname from vehicle\_mgmt.vehicles as v1 join

```
(select t1.vid as vehicle_id from (select count(j2.feed_id) as
cnt1,j1.vehicle_id as vid from vehicle_mgmt.services as j1 join
vehicle_mgmt.feedbacks as j2 on j2.service_id=j1.service_id group by
j1.vehicle_id) as t1 join (select count(cnt2.service_id) as
cnt2,cnt2.vehicle_id as vid from vehicle_mgmt.services as cnt2 group by
cnt2.vehicle_id) as t2 on t1.vid=t2.vid where t1.cnt1=t2.cnt2) as v2 on
v1.vehicle_id=v2.vehicle_id join vehicle_mgmt.customers as v3 on
v1.cid=v3.cid;
```

	cid integer	cname character varying (50)
1	4	Pratibha Hotwani
2	3	Zeel Modi
3	5	Vishal Tanwani

28. Retrieve which vehicle model requires least maintainance than other vehicle models for particular vehicle type.

```
select vm.model_name,t2.average_cost as maintance_cost from
vehicle_mgmt.vehicle_models as vm join (select (t1.smc/t1.nvr)::integer
as average_cost,t1.mid as model_id,t1.nvr as no_of_v from (select
sum(eg.no_of_vehicles_registered) as
nvr,sum(eg.no_of_time_it_requires_service) as nrs
,sum(eg.sum_of_maintance_cost) as smc,eg.model_id as mid from
(select count(df.vid) as no_of_vehicles_registered,df.c2 as
no_of_time_it_requires_service,df.c3 as sum_of_maintance_cost,df.mid
as model_id from (select vv.vehicle_id as vid,(select count(*) from
vehicle_mgmt.services as ss where ss.vehicle_id=vv.vehicle_id)as c2,
(select sum(pp.amount) from vehicle_mgmt.payments as pp join
vehicle_mgmt.services as ss on ss.pay_id=pp.pay_id where
ss.vehicle_id=vv.vehicle_id) as c3, vm.model_id as mid from
vehicle_mgmt.vehicles as vv join vehicle_mgmt.vehicle_models as vm on
vv.model_id=vm.model_id join vehicle_mgmt.vehicle_types as vt on
vm.type_id=vt.type_id where vt.type_name=?) as df group by
mid,df.c2,df.c3) as eg group by eg.model_id) as t1)as t2 on
t2.model_id=vm.model_id order by case when t2.average_cost is null
then 0 else 0 end,maintance_cost desc nulls first LIMIT 5
```

	<b>model_name</b> character varying (20)	<b>maintance_cost</b> integer
1	Honda City	5250
2	i20	4780
3	XUV	3945
4	Kwid	3920
5	Lodgy	3885