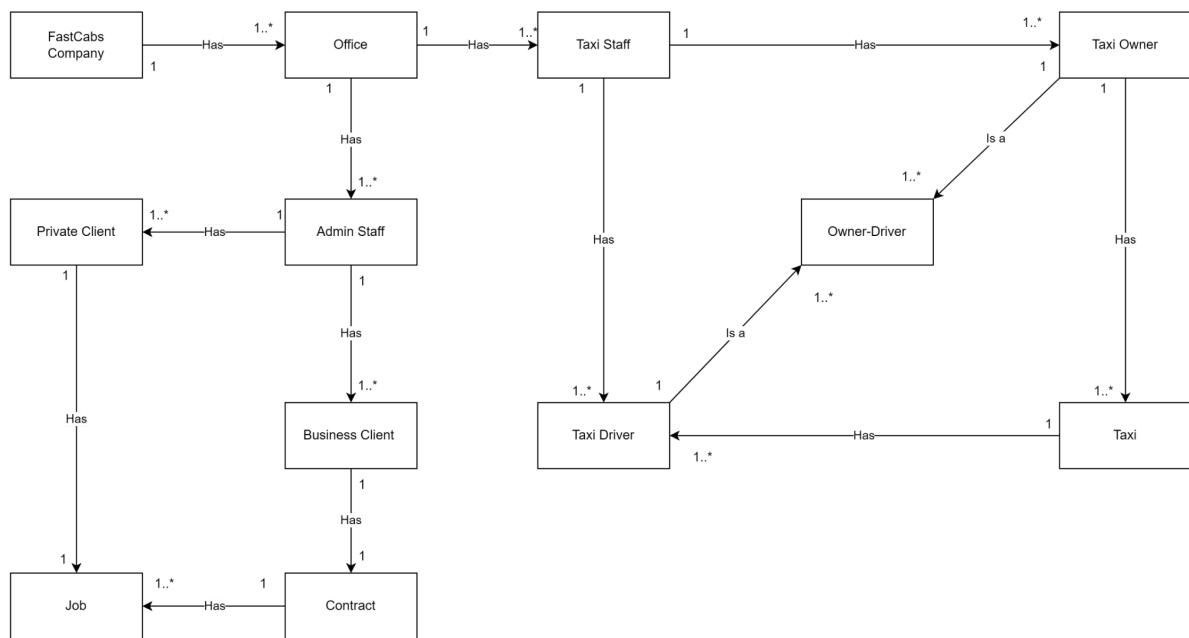


**COMP230 - AB1
GROUP PROJECT
MANDEEP PANNU
APRIL 11TH, 2023**

**MOHIT TOOR
SAMEE MAQBOOL
GARY SIBAT
BRAEDON MCRAE**

PART 1.1:



Entities:

1. Company
2. Office
3. Admin Staff
4. Private Client
5. Business Client
6. Contract
7. Job
8. Taxi
9. Taxi Staff

Relationships:

- 1 Company -Has> 1..* Office
- 1 Office -Has> 1..* Admin Staff
- 1 Office -Has> 1..* Taxi Staff
- 1 taxi Staff -Has> 1..* Taxi Owners
- 1 taxi Staff -Has> 1..* Taxi Drivers
- 1 Taxi Owner -Has> 1..* Taxi
- 1 Taxi -Has> 1..* Drivers
- 1..* Taxi Owner -Are> 1..* Taxi Drivers
- 1 Admin Staff -Has> 1..* Private Clients
- 1 Admin Staff -Has> 1..* Business Clients
- 1 Business Client -Has> 1 Contract
- 1 Private Client -Has> 1 Job
- 1 Contract -Has> 1..* Job

PART 1.2:

Office (Office#, Phone#, City, NUMofStaff, NUMofPClients)

Primary Key: Office#

Alternate Key: Phone#

Alternate Key: City

Admin Staff (AStaff#, Office#, JobDesc, FName, LName, address, sex, DOB, Phone#)

Primary Key: Staff#

Foreign Key: Office# **references** Office(Office#)

Alternate Key: LName, DOB

Alternate Key: Phone#

Taxi Staff (TStaff#, JobDesc, FName, LName, address, sex, DOB, Phone#)

Primary Key: TStaff#

Alternate Key: LName, DOB

Alternate Key: Phone#

Taxi (VIN#, TStaff#)

Primary Key: VIN#

Foreign Key: TStaff# **references** Taxi Staff(TStaff#)

Private Client (PClient#, FName, LName, Phone#)

Primary Key: PClient#

Alternate Key: LName

Alternate Key: Phone#

Business Client (BClient#, FName, LName, DOB, Phone#)

Primary Key: BClient#

Alternate Key: LName, DOB

Alternate Key: Phone#

Contract (Contract#, BClient#, #ofJobs, Office#)

Primary Key: Contract#

Foreign Key: BClient# **references** Business Client(BClient#)

Foreign Key: Office# **references** Office (Office#)

Job (JobID, Contract#, PClient#, VIN#, PUDateTime, PUAddress, DOAddress, Mileage, Fee, TStaff#)

Primary Key: JobID

Foreign Key: Contract# **references** Contract (Contract#)

Foreign Key: PClient# **references** Private Client(PClient#)

Foreign Key: VIN# **references** Taxi(VIN#)

Foreign Key: TStaff# **references** Taxi Staff(TStaff#)

PART 1.3:

It will be shown that all non-primary keys are unique, dependent only on the primary key, and there are no transitive dependencies to the primary key of each table. And since each table only has one primary key, all other keys will be dependent **only** on that primary key.

Office:

Primary Key: Office#

Phone#	<i>-Dependent on></i>	Office#
City	<i>-Dependent on></i>	Office#
NUMofStaff	<i>-Dependent on></i>	Office#
NUMofPClients	<i>-Dependent on></i>	Office#

Admin Staff:

Primary Key: Staff#

Office#	<i>-Dependent on></i>	Staff#
JobDesc	<i>-Dependent on></i>	Staff#
FName	<i>-Dependent on></i>	Staff#
LName	<i>-Dependent on></i>	Staff#
address	<i>-Dependent on></i>	Staff#
sex	<i>-Dependent on></i>	Staff#
DOB	<i>-Dependent on></i>	Staff#
Phone#	<i>-Dependent on></i>	Staff#

Taxi Staff:

Primary Key: TStaff#

JobDesc	<i>-Dependent on></i>	TStaff#
FName	<i>-Dependent on></i>	TStaff#
LName	<i>-Dependent on></i>	TStaff#
address	<i>-Dependent on></i>	TStaff#
sex	<i>-Dependent on></i>	TStaff#
DOB	<i>-Dependent on></i>	TStaff#
Phone#	<i>-Dependent on></i>	TStaff#

Taxi:

Primary Key: VIN#

TStaff#	<i>-Dependent on></i>	VIN#
---------	--------------------------	------

Private Client:

Primary Key: PClient#

FName	<i>-Dependent on></i>	PClient#
LName	<i>-Dependent on></i>	PClient#
Phone#	<i>-Dependent on></i>	PClient#

Business Client:**Primary Key:** BCClient#

FName	<i>-Dependent on></i>	BCClient#
LName	<i>-Dependent on></i>	BCClient#
Phone#	<i>-Dependent on></i>	BCClient#

Contract:**Primary Key:** Contract#

BCClient#	<i>-Dependent on></i>	Contract#
Office#	<i>-Dependent on></i>	Contract#
#ofJobs	<i>-Dependent on></i>	Contract#

Job:**Primary Key:** JobID

Contract#	<i>-Dependent on></i>	JobID
PClient#	<i>-Dependent on></i>	JobID
VIN#	<i>-Dependent on></i>	JobID
TStaff#	<i>-Dependent on></i>	JobID
PUDateTime	<i>-Dependent on></i>	JobID
PUAddress	<i>-Dependent on></i>	JobID
DOAddress	<i>-Dependent on></i>	JobID
Mileage	<i>-Dependent on></i>	JobID
Fee	<i>-Dependent on></i>	JobID

PART 1.4:

jobID	pickupDateTime	driverID	dFName	dLName	clientID	cFName	cLName	cAddress
1001	25/07/00.10.00	I456	Jane	Watt	C034	Anne	Way	111 Storrie Road, Paisley
1102	29/07/00.10.00	I456	Jane	Watt	C034	Anne	Way	111 Storrie Road, Paisley
1203	30/07/00.11.00	I344	Tom	Jones	C034	Anne	Way	111 Storrie Road, Paisley
1334	2/08/00.13.00	I666	Karen	Black	C089	Mark	Fields	120 Lady Lane, Paisley
1455	2/08/00.13.00	I957	Steven	Smith	C019	John	Brown	13 Renfrew Road, Paisley
1676	25/08/00.10.00	I344	Tom	Jones	C039	Karen	Worth	34 High Street, Paisley

This table appears to be in 1NF, since there are unique keys associated with the data provided.

To turn this into 2NF, all attributes must be dependent on a primary key. A few candidate keys are: *jobID*, *driverID*, *clientID*. Each specific job determines all of these attributes, so the primary key will need to be **jobID** for this table.

For 3NF there can be no transitive dependencies. We have the same candidate keys as before (*jobID*, *driverID*, *clientID*), and since these will all need to be primary keys they will be broken up into three different tables. Each table will have their own primary key, with a foreign key reference in the *jobID* table. It will look like this:

PK: jobID	FK: driverID	FK: clientID	pickupDateTime
1001	I456	C034	25/07/00.10.00
1102	I456	C034	29/07/00.10.00
1203	I344	C034	30/07/00.11.00
1334	I666	C089	2/08/00.13.00
1455	I957	C019	2/08/00.13.00
1676	I344	C039	25/08/00.10.00

PK: driverID	dFName	dLName	PK: clientID	cFName	cLName	cAddress
I456	Jane	Watt	C034	Anne	Way	111 Storie Road, Paisley
I344	Tom	Jones	C089	Mark	Fields	120 Lady Lane, Paisley
I666	Karen	Black	C019	John	Brown	13 Renfrew Road, Paisley
I957	Steven	Smith	C039	Karen	Worth	34 High Street, Paisley

PART 2.1:

```
DROP TABLE Job;
DROP TABLE Contract;
DROP TABLE PrivateClient;
DROP TABLE BusinessClient;
DROP TABLE Taxi;
DROP TABLE TaxiStaff;
DROP TABLE AdminStaff;
DROP TABLE Office;

CREATE TABLE Office (
    OfficeNum INT PRIMARY KEY,
    NUMofStaff INT,
    NUMofPClients INT,
    PhoneNum VARCHAR(25),
    City VARCHAR(50)
);

CREATE TABLE AdminStaff (
    AStaffID INT PRIMARY KEY,
    OfficeNum INT,
    JobDesc VARCHAR(50),
    FName VARCHAR(50),
    LName VARCHAR(50),
    Address VARCHAR(100),
    Sex VARCHAR(1),
    DOB DATE,
    PhoneNum VARCHAR(25),
    FOREIGN KEY (OfficeNum) REFERENCES Office (OfficeNum)
);

CREATE TABLE TaxiStaff (
    TStaffID INT PRIMARY KEY,
    JobDesc VARCHAR(50),
    FName VARCHAR(50),
    LName VARCHAR(50),
    Address VARCHAR(100),
    Sex VARCHAR(1),
    DOB DATE,
    PhoneNum VARCHAR(25)
);

CREATE TABLE Taxi (
    VIN VARCHAR(25) PRIMARY KEY,
    TStaffID INT,
    FOREIGN KEY (TStaffID) REFERENCES TaxiStaff (TStaffID)
```

```

);

CREATE TABLE PrivateClient (
    PClientNum INT PRIMARY KEY,
    FName VARCHAR(50),
    LName VARCHAR(50),
    PhoneNum VARCHAR(25)
);

CREATE TABLE BusinessClient (
    BClientNum INT PRIMARY KEY,
    FName VARCHAR(50),
    LName VARCHAR(50),
    PhoneNum VARCHAR(25)
);

CREATE TABLE Contract (
    ContractNum INT PRIMARY KEY,
    BClientNum INT,
    NumofJobs INT,
    OfficeNum INT,
    FOREIGN KEY (BClientNum) REFERENCES BusinessClient (BClientNum),
    FOREIGN KEY (OfficeNum) REFERENCES Office (OfficeNum)
);

CREATE TABLE Job (
    JobID INT PRIMARY KEY,
    ContractNum INT,
    PClientNum INT,
    TStaffID INT,
    VIN VARCHAR(25),
    PUDateTime TimeStamp,
    PUAddress VARCHAR(100),
    DOAddress VARCHAR(100),
    Mileage INT,
    Fee INT,
    FOREIGN KEY (ContractNum) REFERENCES Contract (ContractNum),
    FOREIGN KEY (PClientNum) REFERENCES PrivateClient (PClientNum),
    FOREIGN KEY (VIN) REFERENCES Taxi (VIN),
    FOREIGN KEY (TStaffID) REFERENCES TaxiStaff (TStaffID)
);

```

PART 2.3:

```

INSERT INTO Office (OfficeNum, NUMofStaff, NUMofPClients, PhoneNum, City) VALUES
(1, 54, 102, '604-555-1234', 'New York');
INSERT INTO Office (OfficeNum, NUMofStaff, NUMofPClients, PhoneNum, City) VALUES

```

```
(2, 45, 112, '604-555-5678', 'Los Angeles');
INSERT INTO Office (OfficeNum, NUMofStaff, NUMofPClients, PhoneNum, City) VALUES
(3, 60, 142, '604-555-9876', 'Glasgow');
INSERT INTO Office (OfficeNum, NUMofStaff, NUMofPClients, PhoneNum, City) VALUES
(4, 34, 97, '604-555-4321', 'Houston');
INSERT INTO Office (OfficeNum, NUMofStaff, NUMofPClients, PhoneNum, City) VALUES
(5, 42, 109, '604-555-8765', 'Miami');
INSERT INTO Office (OfficeNum, NUMofStaff, NUMofPClients, PhoneNum, City) VALUES
(6, 51, 120, '604-555-2345', 'San Francisco');
INSERT INTO Office (OfficeNum, NUMofStaff, NUMofPClients, PhoneNum, City) VALUES
(7, 58, 125, '604-555-7890', 'Boston');

INSERT INTO AdminStaff (AStaffID, OfficeNum, JobDesc, FName, LName, Address, Sex,
DOB, PhoneNum) VALUES
(101, 1, 'Dispatch', 'John', 'Doe', '123 Main St', 'M', TO_DATE ('01-JAN-1990',
'DD-MON-YYYY'), '604-535-1234');
INSERT INTO AdminStaff (AStaffID, OfficeNum, JobDesc, FName, LName, Address, Sex,
DOB, PhoneNum) VALUES
(102, 1, 'Manager', 'Jane', 'Doe', '123 Main St', 'F', TO_DATE('02-FEB-1991',
'DD-MON-YYYY'), '604-575-5678');
INSERT INTO AdminStaff (AStaffID, OfficeNum, JobDesc, FName, LName, Address, Sex,
DOB, PhoneNum) VALUES
(103, 2, 'Manager', 'Bob', 'Smithe', '456 Elm St', 'M', TO_DATE('03-MAR-1992',
'DD-MON-YYYY'), '778-535-9012');
INSERT INTO AdminStaff (AStaffID, OfficeNum, JobDesc, FName, LName, Address, Sex,
DOB, PhoneNum) VALUES
(104, 3, 'Dispatch', 'Sue', 'John', '789 Oak St', 'F', TO_DATE('04-APR-1993',
'DD-MON-YYYY'), '778-555-3456');
INSERT INTO AdminStaff (AStaffID, OfficeNum, JobDesc, FName, LName, Address, Sex,
DOB, PhoneNum) VALUES
(105, 4, 'Manager', 'Tom', 'Brown', '246 Maple St', 'M', TO_DATE('05-MAY-1994',
'DD-MON-YYYY'), '778-555-7890');
INSERT INTO AdminStaff (AStaffID, OfficeNum, JobDesc, FName, LName, Address, Sex,
DOB, PhoneNum) VALUES
(106, 5, 'Manager', 'Lisa', 'Jones', '369 Pine St', 'F', TO_DATE('06-JUN-1995',
'DD-MON-YYYY'), '778-555-2345');
INSERT INTO AdminStaff (AStaffID, OfficeNum, JobDesc, FName, LName, Address, Sex,
DOB, PhoneNum) VALUES
(107, 6, 'Dispatch', 'Mike', 'Davis', '802 Walnut St', 'M', TO_DATE('07-JUL-1996',
'DD-MON-YYYY'), '778-555-6789');

INSERT INTO TaxiStaff (TStaffID, JobDesc, FName, LName, Address, Sex, DOB,
PhoneNum) VALUES
(108, 'Driver', 'John', 'Smith', '143 Main St', 'M', TO_DATE('01-JAN-1991',
'DD-MON-YYYY'), '778-555-1111');
INSERT INTO TaxiStaff (TStaffID, JobDesc, FName, LName, Address, Sex, DOB,
PhoneNum) VALUES
```

```
(109, 'Driver', 'Rob', 'Derek', '416 Elm St', 'M', TO_DATE('02-SEP-1993', 'DD-MON-YYYY'),  
'778-555-2222');  
INSERT INTO TaxiStaff (TStaffID, JobDesc, FName, LName, Address, Sex, DOB,  
PhoneNum) VALUES  
(110, 'Owner', 'Bob', 'Johnson', '739 Oak St', 'M', TO_DATE('03-MAY-1992',  
'DD-MON-YYYY'), '778-555-3333');  
INSERT INTO TaxiStaff (TStaffID, JobDesc, FName, LName, Address, Sex, DOB,  
PhoneNum) VALUES  
(111, 'Owner', 'Sue', 'Williams', '276 Maple St', 'F', TO_DATE('04-FEB-1993',  
'DD-MON-YYYY'), '778-555-4444');  
INSERT INTO TaxiStaff (TStaffID, JobDesc, FName, LName, Address, Sex, DOB,  
PhoneNum) VALUES  
(112, 'Driver', 'Tom', 'Brady', '319 Pine St', 'M', TO_DATE('05-JUL-1994', 'DD-MON-YYYY'),  
'778-555-5555');  
INSERT INTO TaxiStaff (TStaffID, JobDesc, FName, LName, Address, Sex, DOB,  
PhoneNum) VALUES  
(113, 'Driver', 'Lisa', 'James', '892 Walnut St', 'F', TO_DATE('06-APR-1995',  
'DD-MON-YYYY'), '780-555-6666');  
INSERT INTO TaxiStaff (TStaffID, JobDesc, FName, LName, Address, Sex, DOB,  
PhoneNum) VALUES  
(114, 'Owner', 'Mike', 'Shula', '1358 Cedar Ave', 'M', TO_DATE('07-JAN-1996',  
'DD-MON-YYYY'), '780-555-7777');  
  
INSERT INTO Taxi (VIN, TStaffID) VALUES  
(‘ABC12323’, 108);  
INSERT INTO Taxi (VIN, TStaffID) VALUES  
(‘DEF45116’, 109);  
INSERT INTO Taxi (VIN, TStaffID) VALUES  
(‘GHI78569’, 110);  
INSERT INTO Taxi (VIN, TStaffID) VALUES  
(‘JKL01222’, 110);  
INSERT INTO Taxi (VIN, TStaffID) VALUES  
(‘MNO34335’, 111);  
INSERT INTO Taxi (VIN, TStaffID) VALUES  
(‘PQR67788’, 112);  
INSERT INTO Taxi (VIN, TStaffID) VALUES  
(‘STU90231’, 113);  
INSERT INTO Taxi (VIN, TStaffID) VALUES  
(‘STU90134’, 114);  
INSERT INTO Taxi (VIN, TStaffID) VALUES  
(‘STU90321’, 111);  
INSERT INTO Taxi (VIN, TStaffID) VALUES  
(‘STU90541’, 110);  
  
INSERT INTO PrivateClient (PClientNum, FName, LName, PhoneNum) VALUES  
(201, ‘Alice’, ‘Jones’, ‘604-123-4567’);  
INSERT INTO PrivateClient (PClientNum, FName, LName, PhoneNum) VALUES  
(202, ‘Bob’, ‘Smith’, ‘778-234-5678’);
```

```
INSERT INTO PrivateClient (PClientNum, FName, LName, PhoneNum) VALUES  
    (203, 'Charlie', 'Brown', '604-345-6789');  
INSERT INTO PrivateClient (PClientNum, FName, LName, PhoneNum) VALUES  
    (204, 'David', 'Lee', '778-456-7890');  
INSERT INTO PrivateClient (PClientNum, FName, LName, PhoneNum) VALUES  
    (205, 'Emily', 'Davis', '604-567-8901');  
INSERT INTO PrivateClient (PClientNum, FName, LName, PhoneNum) VALUES  
    (206, 'Frank', 'Johnson', '778-678-9012');  
INSERT INTO PrivateClient (PClientNum, FName, LName, PhoneNum) VALUES  
    (207, 'Grace', 'Taylor', '604-789-0123');  
  
INSERT INTO BusinessClient (BClientNum, FName, LName, PhoneNum) VALUES  
    (301, 'John', 'Paul', '604-133-4567');  
INSERT INTO BusinessClient (BClientNum, FName, LName, PhoneNum) VALUES  
    (302, 'Jane', 'Irving', '778-204-5678');  
INSERT INTO BusinessClient (BClientNum, FName, LName, PhoneNum) VALUES  
    (303, 'Bob', 'Russell', '604-315-6789');  
INSERT INTO BusinessClient (BClientNum, FName, LName, PhoneNum) VALUES  
    (304, 'Sue', 'Leet', '778-426-7890');  
INSERT INTO BusinessClient (BClientNum, FName, LName, PhoneNum) VALUES  
    (305, 'Tom', 'Davison', '604-557-8901');  
INSERT INTO BusinessClient (BClientNum, FName, LName, PhoneNum) VALUES  
    (306, 'Lisa', 'Mahomes', '778-378-9012');  
INSERT INTO BusinessClient (BClientNum, FName, LName, PhoneNum) VALUES  
    (307, 'Mike', 'Henryr', '604-759-0123');  
  
INSERT INTO Contract (ContractNum, BClientNum, NumofJobs, OfficeNum) VALUES  
    (401, 301, 10, 1);  
INSERT INTO Contract (ContractNum, BClientNum, NumofJobs, OfficeNum) VALUES  
    (402, 302, 8, 2);  
INSERT INTO Contract (ContractNum, BClientNum, NumofJobs, OfficeNum) VALUES  
    (403, 303, 12, 3);  
INSERT INTO Contract (ContractNum, BClientNum, NumofJobs, OfficeNum) VALUES  
    (404, 305, 6, 4);  
INSERT INTO Contract (ContractNum, BClientNum, NumofJobs, OfficeNum) VALUES  
    (405, 307, 9, 5);  
INSERT INTO Contract (ContractNum, BClientNum, NumofJobs, OfficeNum) VALUES  
    (406, 304, 11, 6);  
INSERT INTO Contract (ContractNum, BClientNum, NumofJobs, OfficeNum) VALUES  
    (407, 306, 7, 7);  
  
INSERT INTO Job (JobID, ContractNum, PClientNum, TStaffID, VIN, PUDate, PUAddress, DOAddress, Mileage, Fee) VALUES  
    (501, 401, 201, 108, 'ABC12323', TO_DATE('2000-09-06 12:00:00', 'YYYY-MM-DD HH24:MI:SS'), '123 Park St', '416 Elm St', 10, 20);  
INSERT INTO Job (JobID, ContractNum, PClientNum, TStaffID, VIN, PUDate, PUAddress, DOAddress, Mileage, Fee) VALUES
```

```

(502, 402, 202, 109, 'DEF45116', TO_DATE('2023-04-07 14:00:00', 'YYYY-MM-DD
HH24:MI:SS'), '456 Broad St', '789 Oak St', 15, 25);
INSERT INTO Job (JobID, ContractNum, PClientNum, TStaffID, VIN, PUDateTime,
PUAddress, DOAddress, Mileage, Fee) VALUES
(503, 403, 203, 110, 'GHI78569', TO_DATE('2000-09-08 16:00:00', 'YYYY-MM-DD
HH24:MI:SS'), '739 Lake St', '216 Maple St', 20, 30);
INSERT INTO Job (JobID, ContractNum, PClientNum, TStaffID, VIN, PUDateTime,
PUAddress, DOAddress, Mileage, Fee) VALUES
(504, 404, 204, 112, 'JKL01222', TO_DATE('2020-04-09 18:00:00', 'YYYY-MM-DD
HH24:MI:SS'), '296 Maple St', '349 Pole St', 25, 35);
INSERT INTO Job (JobID, ContractNum, PClientNum, TStaffID, VIN, PUDateTime,
PUAddress, DOAddress, Mileage, Fee) VALUES
(505, 405, 205, 111, 'MNO34335', TO_DATE('2003-04-10 20:00:00', 'YYYY-MM-DD
HH24:MI:SS'), '319 Hort St', '892 Peal St', 30, 40);
INSERT INTO Job (JobID, ContractNum, PClientNum, TStaffID, VIN, PUDateTime,
PUAddress, DOAddress, Mileage, Fee) VALUES
(506, 406, 206, 113, 'STU90231', TO_DATE('2013-04-11 22:00:00', 'YYYY-MM-DD
HH24:MI:SS'), '842 Walnut St', '158 Mitch Ave', 35, 45);
INSERT INTO Job (JobID, ContractNum, PClientNum, TStaffID, VIN, PUDateTime,
PUAddress, DOAddress, Mileage, Fee) VALUES
(507, 407, 207, 114, 'STU90134', TO_DATE('2010-04-12 00:00:00', 'YYYY-MM-DD
HH24:MI:SS'), '1358 Cedar Ave', '246 Maple St', 40, 50);

```

PART 3.1:

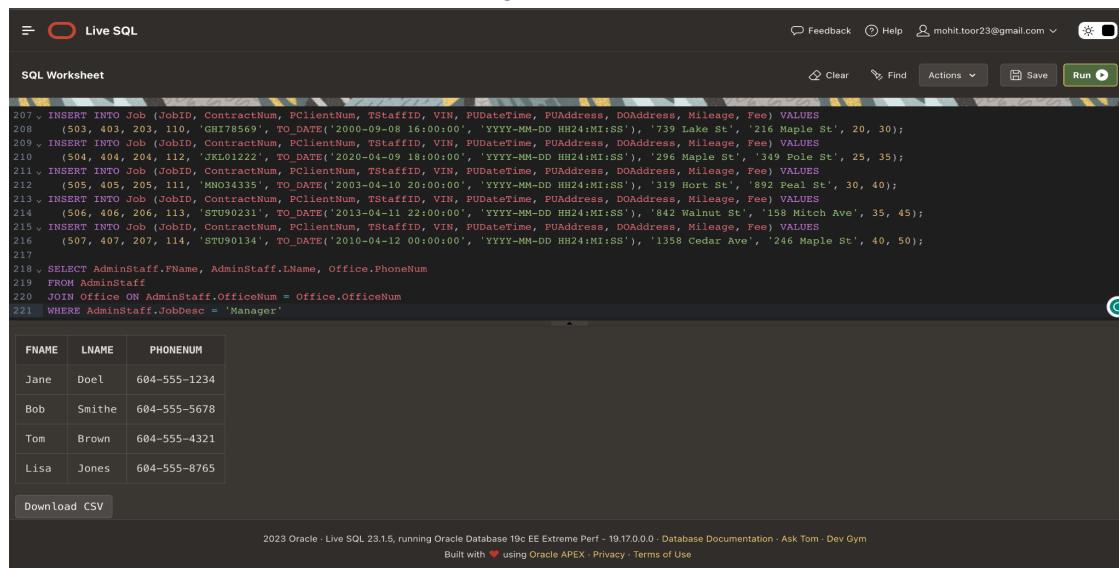
a) The names and phone numbers of the Managers at each office.

Query:

```

SELECT AdminStaff.FName, AdminStaff.LName, Office.PhoneNum
FROM AdminStaff
JOIN Office ON AdminStaff.Officenum = Office.Officenum
WHERE AdminStaff.JobDesc = 'Manager'

```



The screenshot shows the Oracle Live SQL interface with the following details:

- SQL Worksheet:** The code for the query is pasted here.
- Run:** The Run button is highlighted.
- Results:** A table displays the names and phone numbers of managers across different offices. The table has columns: FNAME, LNAME, and PHONENUM.
- Data:**

FNAME	LNAME	PHONENUM
Jane	Doel	604-555-1234
Bob	Smithe	604-555-5678
Tom	Brown	604-555-4321
Lisa	Jones	604-555-8765
- Buttons:** Download CSV, Feedback, Help, Actions, Save, Run.
- Page Footer:** 2023 Oracle - Live SQL 23.1.5, running Oracle Database 19c EE Extreme Perf - 19.17.0.0.0 - Database Documentation - Ask Tom - Dev Gym

c) The total number of staff at each office.

Query:

```
SELECT Office.City, SUM(NUMofStaff) AS TotalStaff  
FROM Office  
GROUP BY Office.City
```

The screenshot shows the Oracle Live SQL interface. At the top, there are tabs for 'Live SQL' and 'SQL Worksheet'. Below the tabs, the SQL code is displayed, starting with several INSERT statements followed by the SELECT query. The results are shown in a table below the code. The table has two columns: 'City' and 'TotalStaff'. The data is as follows:

CITY	TOTALSTAFF
Los Angeles	45
Boston	58
New York	54
San Francisco	51
Glasgow	60
Houston	34

At the bottom of the interface, there is a footer with the text: "2023 Oracle - Live SQL 23.1.5, running Oracle Database 19c EE Extreme Perf - 19.17.0.0.0 · Database Documentation · Ask Tom · Dev Gym" and "Built with ❤ using Oracle APEX · Privacy · Terms of Use".

FULL TABLE OUTPUT:

CITY	TOTALSTAFF
Miami	42
Los Angeles	45
Boston	58
New York	54
San Francisco	51
Glasgow	60
Houston	34

f) The number of drivers allocated to each taxi.

Query:

```
SELECT Taxi.VIN, COUNT(Job.TStaffID) AS NumOfDrivers  
FROM Taxi  
JOIN Job ON Job.VIN = Taxi.VIN  
GROUP BY Taxi.VIN
```

The screenshot shows the Oracle Live SQL interface. At the top, there are tabs for 'Live SQL' and 'SQL Worksheet'. The 'SQL Worksheet' tab is active, showing the following SQL code:

```

205  (503, 403, 203, 110, 'GHI78569', TO_DATE('2000-09-08 16:00:00', 'YYYY-MM-DD HH24:MI:SS'), '739 Lake St', '216 Maple St', 20, 30);
206  v INSERT INTO Job (JobID, ContractNum, PClientNum, TStaffID, VIN, PUDateTime, PUAddress, DOAddress, Mileage, Fee) VALUES
207  (504, 404, 204, 112, 'JKL01222', TO_DATE('2020-04-09 18:00:00', 'YYYY-MM-DD HH24:MI:SS'), '296 Maple St', '349 Pole St', 25, 35);
208  v INSERT INTO Job (JobID, ContractNum, PClientNum, TStaffID, VIN, PUDateTime, PUAddress, DOAddress, Mileage, Fee) VALUES
209  (505, 405, 205, 111, 'MNO34335', TO_DATE('2003-04-10 20:00:00', 'YYYY-MM-DD HH24:MI:SS'), '119 Hort St', '892 Peal St', 30, 40);
210  v INSERT INTO Job (JobID, ContractNum, PClientNum, TStaffID, VIN, PUDateTime, PUAddress, DOAddress, Mileage, Fee) VALUES
211  (506, 406, 206, 113, 'STU90231', TO_DATE('2013-04-11 22:00:00', 'YYYY-MM-DD HH24:MI:SS'), '842 Walnut St', '158 Mitch Ave', 35, 45);
212  v INSERT INTO Job (JobID, ContractNum, PClientNum, TStaffID, VIN, PUDateTime, PUAddress, DOAddress, Mileage, Fee) VALUES
213  (507, 407, 207, 114, 'STU90134', TO_DATE('2010-04-12 00:00:00', 'YYYY-MM-DD HH24:MI:SS'), '1358 Cedar Ave', '246 Maple St', 40, 50);
214
215  v SELECT Taxi.VIN, COUNT(Job.TStaffID) AS NumOfDrivers
216  FROM Taxi
217  JOIN Job ON Job.VIN = Taxi.VIN
218  GROUP BY Taxi.VIN
219

```

Below the code, the results of the query are displayed in a table:

VIN	NUMOFDRIVERS
MNO34335	1
STU90231	1
ABC12323	1
GHI78569	1
JKL01222	1
DEF45116	1

At the bottom of the interface, there is a footer with the text: "2023 Oracle - Live SQL 23.1.5, running Oracle Database 19c EE Extreme Perf - 19.17.0.0.0 - Database Documentation · Ask Tom · Dev Gym" and "Built with ❤ using Oracle APEX · Privacy · Terms of Use".

FULL TABLE OUTPUT:

VIN	NUMOFDRIVERS
MNO34335	1
STU90231	1
ABC12323	1
GHI78569	1
JKL01222	1
DEF45116	1
STU90134	1

i) The details of the current contracts with business clients in Glasgow.

Query:

```

SELECT *
FROM Contract
WHERE OfficeNum IN (
    SELECT OfficeNum
    FROM Office
    WHERE City = 'Glasgow')
    AND NumOfJobs > (
        SELECT COUNT(*)
        FROM Job
        WHERE Job.ContractNum = Contract.ContractNum)

```

Live SQL

SQL Worksheet

```

211   (506, 406, 206, 113, 'STU90231', TO_DATE('2013-04-11 22:00:00', 'YYYY-MM-DD HH24:MI:SS'), '842 Walnut St', '158 Mitch Ave', 35, 45);
212 ✓ INSERT INTO Job (JobID, ContractNum, PCClientNum, TStaffID, VIN, PUDateTime, PUAddress, DOAddress, Mileage, Fee) VALUES
213   (507, 407, 207, 114, 'STU90134', TO_DATE('2010-04-12 00:00:00', 'YYYY-MM-DD HH24:MI:SS'), '1358 Cedar Ave', '246 Maple St', 40, 50);
214
215 ✓ SELECT *
216   FROM Contract
217   WHERE OfficeNum IN (
218     SELECT OfficeNum
219     FROM Office
220     WHERE City = 'Glasgow'
221   ) AND NumOfJobs > (
222     SELECT COUNT(*)
223     FROM Job
224     WHERE Job.ContractNum = Contract.ContractNum
225   )

```

1 row(s) inserted.

1 row(s) inserted.

1 row(s) inserted.

1 row(s) inserted.

CONTRACTNUM	BCLIENTNUM	NUMOFJOBS	OFFICENUM
403	303	12	3

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j) The total number of private clients in each city.

Query:

```
SELECT Office.City, SUM(NUMofPClients) AS TotalPrivateClients
FROM Office
GROUP BY Office.City
```

Live SQL

SQL Worksheet

```

203   (502, 402, 202, 109, 'DEF45116', TO_DATE('2023-04-07 14:00:00', 'YYYY-MM-DD HH24:MI:SS'), '456 Broad St', '789 Oak St', 15, 25);
204 ✓ INSERT INTO Job (JobID, ContractNum, PCClientNum, TStaffID, VIN, PUDateTime, PUAddress, DOAddress, Mileage, Fee) VALUES
205   (503, 403, 203, 110, 'GH178569', TO_DATE('2000-09-08 16:00:00', 'YYYY-MM-DD HH24:MI:SS'), '739 Lake St', '216 Maple St', 20, 30);
206 ✓ INSERT INTO Job (JobID, ContractNum, PCClientNum, TStaffID, VIN, PUDateTime, PUAddress, DOAddress, Mileage, Fee) VALUES
207   (504, 404, 204, 112, 'JKL01222', TO_DATE('2020-04-09 18:00:00', 'YYYY-MM-DD HH24:MI:SS'), '296 Maple St', '349 Pole St', 25, 35);
208 ✓ INSERT INTO Job (JobID, ContractNum, PCClientNum, TStaffID, VIN, PUDateTime, PUAddress, DOAddress, Mileage, Fee) VALUES
209   (505, 405, 205, 111, 'MNO34335', TO_DATE('2003-04-10 20:00:00', 'YYYY-MM-DD HH24:MI:SS'), '319 Hort St', '892 Peal St', 30, 40);
210 ✓ INSERT INTO Job (JobID, ContractNum, PCClientNum, TStaffID, VIN, PUDateTime, PUAddress, DOAddress, Mileage, Fee) VALUES
211   (506, 406, 206, 113, 'STU90231', TO_DATE('2013-04-11 22:00:00', 'YYYY-MM-DD HH24:MI:SS'), '842 Walnut St', '158 Mitch Ave', 35, 45);
212 ✓ INSERT INTO Job (JobID, ContractNum, PCClientNum, TStaffID, VIN, PUDateTime, PUAddress, DOAddress, Mileage, Fee) VALUES
213   (507, 407, 207, 114, 'STU90134', TO_DATE('2010-04-12 00:00:00', 'YYYY-MM-DD HH24:MI:SS'), '1358 Cedar Ave', '246 Maple St', 40, 50);
214
215 ✓ SELECT Office.City, SUM(NUMofPClients) AS TotalPrivateClients
216   FROM Office
217   GROUP BY Office.City

```

CITY	TOTALPRIVATECLIENTS
Miami	109
Los Angeles	112
Boston	125
New York	102
San Francisco	120
Glasgow	142

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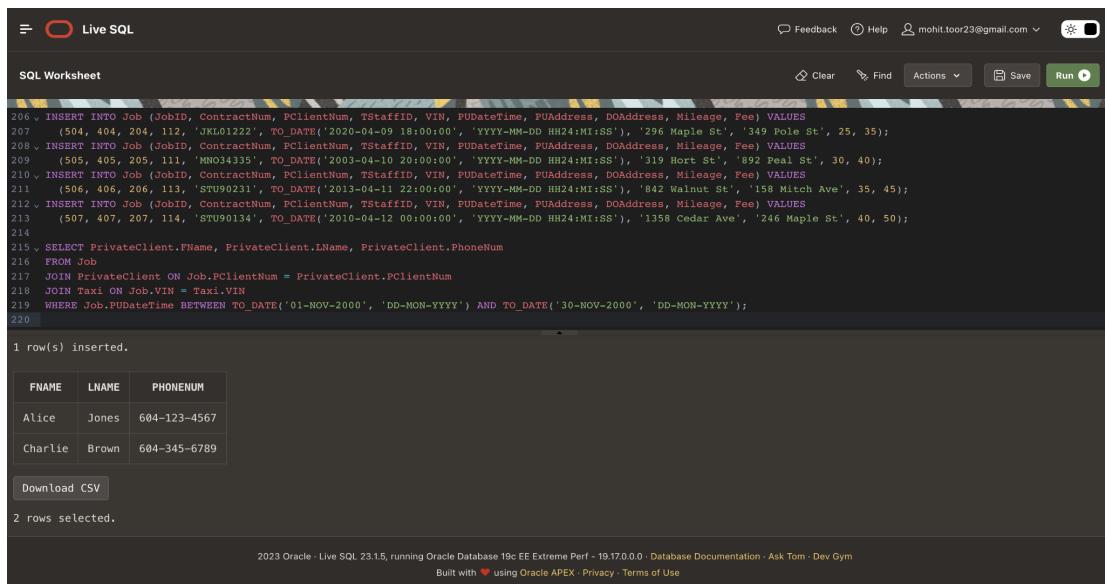
FULL TABLE OUTPUT:

CITY	TOTALPRIVATECLIENTS
Miami	109
Los Angeles	112
Boston	125
New York	102
San Francisco	120
Glasgow	142
Houston	97

m) The names and numbers of private clients who hired a taxi in November 2000.

Query:

```
SELECT PrivateClient.FName, PrivateClient.LName, PrivateClient.PhoneNum  
FROM Job  
JOIN PrivateClient ON Job.PClientNum = PrivateClient.PClientNum  
JOIN Taxi ON Job.VIN = Taxi.VIN  
WHERE Job.PUDateTime BETWEEN TO_DATE('01-NOV-2000', 'DD-MON-YYYY') AND  
TO_DATE('30-NOV-2000', 'DD-MON-YYYY');
```



SQL Worksheet

```
206 v INSERT INTO Job (JobID, ContractNum, PClientNum, TStaffID, VIN, PUDateTime, PUAddress, DOAddress, Mileage, Fee) VALUES  
207 v (504, 404, 204, 112, 'JKL01222', TO_DATE('2020-04-09 18:00:00', 'YYYY-MM-DD HH24:MI:SS'), '296 Maple St', '349 Pole St', 25, 35);  
208 v INSERT INTO Job (JobID, ContractNum, PClientNum, TStaffID, VIN, PUDateTime, PUAddress, DOAddress, Mileage, Fee) VALUES  
209 v (505, 405, 205, 111, 'MNO34335', TO_DATE('2003-04-10 20:00:00', 'YYYY-MM-DD HH24:MI:SS'), '319 Hort St', '892 Peal St', 30, 40);  
210 v INSERT INTO Job (JobID, ContractNum, PClientNum, TStaffID, VIN, PUDateTime, PUAddress, DOAddress, Mileage, Fee) VALUES  
211 v (506, 406, 206, 113, 'STU90231', TO_DATE('2013-04-11 22:00:00', 'YYYY-MM-DD HH24:MI:SS'), '842 Walnut St', '158 Mitch Ave', 35, 45);  
212 v INSERT INTO Job (JobID, ContractNum, PClientNum, TStaffID, VIN, PUDateTime, PUAddress, DOAddress, Mileage, Fee) VALUES  
213 v (507, 407, 207, 114, 'STU90134', TO_DATE('2010-04-12 00:00:00', 'YYYY-MM-DD HH24:MI:SS'), '1358 Cedar Ave', '246 Maple St', 40, 50);  
214  
215 v SELECT PrivateClient.FName, PrivateClient.LName, PrivateClient.PhoneNum  
216 FROM Job  
217 JOIN PrivateClient ON Job.PClientNum = PrivateClient.PClientNum  
218 JOIN Taxi ON Job.VIN = Taxi.VIN  
219 WHERE Job.PUDateTime BETWEEN TO_DATE('01-NOV-2000', 'DD-MON-YYYY') AND TO_DATE('30-NOV-2000', 'DD-MON-YYYY');  
220
```

1 row(s) inserted.

FNAME	LNAME	PHONENUM
Alice	Jones	604-123-4567
Charlie	Brown	604-345-6789

Download CSV

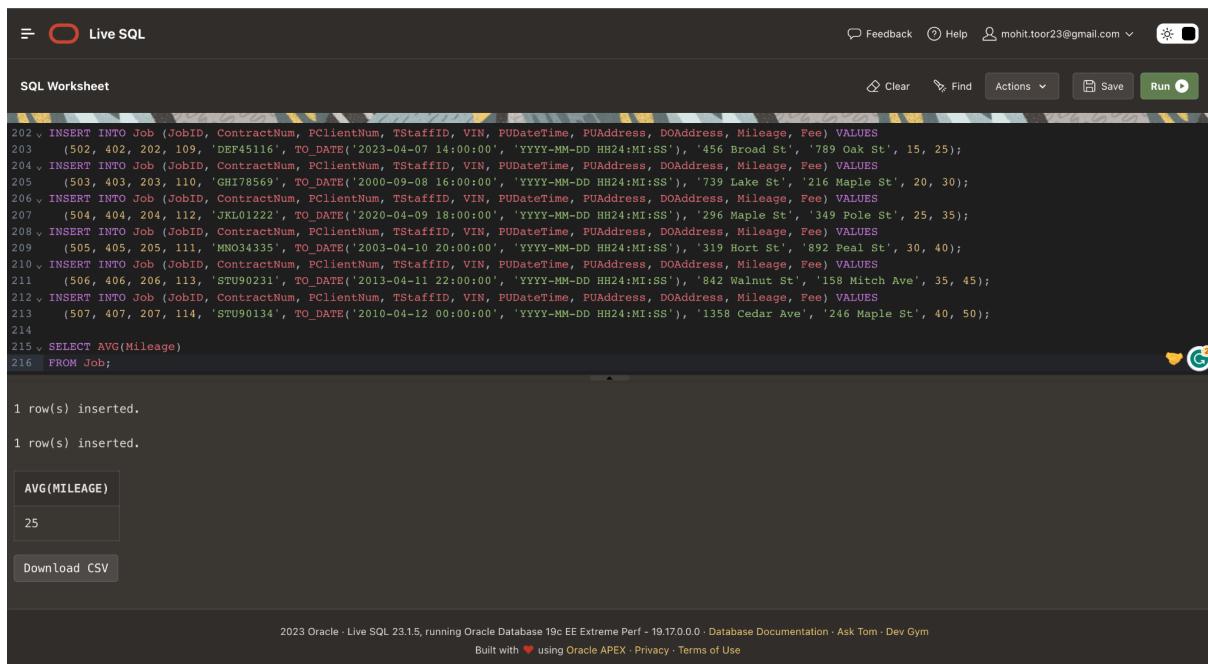
2 rows selected.

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o) The average number of miles driven during a job.

Query:

```
SELECT AVG(Mileage)  
FROM Job;
```



SQL Worksheet

```
202 v INSERT INTO Job (JobID, ContractNum, PClientNum, TStaffID, VIN, PUDateTime, PUAddress, DOAddress, Mileage, Fee) VALUES  
203 v (502, 402, 202, 109, 'DEF45116', TO_DATE('2023-04-07 14:00:00', 'YYYY-MM-DD HH24:MI:SS'), '456 Broad St', '789 Oak St', 15, 25);  
204 v INSERT INTO Job (JobID, ContractNum, PClientNum, TStaffID, VIN, PUDateTime, PUAddress, DOAddress, Mileage, Fee) VALUES  
205 v (503, 403, 203, 110, 'GHI78569', TO_DATE('2000-09-08 16:00:00', 'YYYY-MM-DD HH24:MI:SS'), '739 Lake St', '216 Maple St', 20, 30);  
206 v INSERT INTO Job (JobID, ContractNum, PClientNum, TStaffID, VIN, PUDateTime, PUAddress, DOAddress, Mileage, Fee) VALUES  
207 v (504, 404, 204, 112, 'JKL01222', TO_DATE('2020-04-09 18:00:00', 'YYYY-MM-DD HH24:MI:SS'), '296 Maple St', '349 Pole St', 25, 35);  
208 v INSERT INTO Job (JobID, ContractNum, PClientNum, TStaffID, VIN, PUDateTime, PUAddress, DOAddress, Mileage, Fee) VALUES  
209 v (505, 405, 205, 111, 'MNO34335', TO_DATE('2003-04-10 20:00:00', 'YYYY-MM-DD HH24:MI:SS'), '319 Hort St', '892 Peal St', 30, 40);  
210 v INSERT INTO Job (JobID, ContractNum, PClientNum, TStaffID, VIN, PUDateTime, PUAddress, DOAddress, Mileage, Fee) VALUES  
211 v (506, 406, 206, 113, 'STU90231', TO_DATE('2013-04-11 22:00:00', 'YYYY-MM-DD HH24:MI:SS'), '842 Walnut St', '158 Mitch Ave', 35, 45);  
212 v INSERT INTO Job (JobID, ContractNum, PClientNum, TStaffID, VIN, PUDateTime, PUAddress, DOAddress, Mileage, Fee) VALUES  
213 v (507, 407, 207, 114, 'STU90134', TO_DATE('2010-04-12 00:00:00', 'YYYY-MM-DD HH24:MI:SS'), '1358 Cedar Ave', '246 Maple St', 40, 50);  
214  
215 v SELECT AVG(Mileage)  
216 FROM Job;
```

1 row(s) inserted.

AVG(MILEAGE)
25

Download CSV

1 row(s) inserted.

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p) The total number of jobs allocated to each car.

Query:

```
SELECT Taxi.VIN, COUNT(*) as TotalJobs
FROM Taxi
INNER JOIN Job ON Taxi.VIN = Job.VIN
GROUP BY Taxi.VIN;
```

The screenshot shows the Oracle Live SQL interface. At the top, there are tabs for 'Live SQL' and 'SQL Worksheet'. Below the tabs are buttons for 'Feedback', 'Help', 'mohit.toor23@gmail.com', 'Clear', 'Find', 'Actions', 'Save', and 'Run'. The main area contains the SQL code and its output. The output is a table with columns 'VIN' and 'TOTALJOBS', showing that each car has exactly one job assigned.

VIN	TOTALJOBS
MNO34335	1
STU90231	1
ABC12323	1
GHI78569	1
JKL01222	1

At the bottom of the interface, there is a footer bar with the text: "2023 Oracle - Live SQL 23.1.5, running Oracle Database 19c EE Extreme Perf - 19.17.0.0.0 · Database Documentation · Ask Tom · Dev Gym" and "Built with ❤️ using Oracle APEX · Privacy · Terms of Use".

FULL TABLE OUTPUT:

VIN	TOTALJOBS
MNO34335	1
STU90231	1
ABC12323	1
GHI78569	1
JKL01222	1
DEF45116	1
STU90134	1

q) The total number of jobs allocated to each driver.

Query:

```
SELECT TaxiStaff.FName, TaxiStaff.LName, COUNT(*) as TotalJobs
FROM TaxiStaff
INNER JOIN Job ON TaxiStaff.TStaffID = Job.TStaffID
GROUP BY TaxiStaff.TStaffID, TaxiStaff.FName, TaxiStaff.LName;
```

The screenshot shows the Oracle Live SQL interface. At the top, there are navigation links for Feedback, Help, and a user account (mohit.toor23@gmail.com). Below that is a toolbar with Clear, Find, Actions, Save, and Run buttons. The main area contains a SQL worksheet with the following code:

```

205   (503, 403, 203, 110, 'GHI78569', TO_DATE('2000-09-08 16:00:00', 'YYYY-MM-DD HH24:MI:SS'), '739 Lake St', '216 Maple St', 20, 30);
206 ✓ INSERT INTO Job (JobID, ContractNum, PClientNum, TStaffID, VIN, PUDateTime, PUAddress, DOAddress, Mileage, Fee) VALUES
207   (504, 404, 204, 112, 'JKL01222', TO_DATE('2020-04-09 18:00:00', 'YYYY-MM-DD HH24:MI:SS'), '296 Maple St', '349 Pole St', 25, 35);
208 ✓ INSERT INTO Job (JobID, ContractNum, PClientNum, TStaffID, VIN, PUDateTime, PUAddress, DOAddress, Mileage, Fee) VALUES
209   (505, 405, 205, 111, 'MNO14315', TO_DATE('2003-04-10 20:00:00', 'YYYY-MM-DD HH24:MI:SS'), '319 Hort St', '892 Peal St', 30, 40);
210 ✓ INSERT INTO Job (JobID, ContractNum, PClientNum, TStaffID, VIN, PUDateTime, PUAddress, DOAddress, Mileage, Fee) VALUES
211   (506, 406, 206, 113, 'STU90231', TO_DATE('2013-04-11 22:00:00', 'YYYY-MM-DD HH24:MI:SS'), '842 Walnut St', '158 Mitch Ave', 35, 45);
212 ✓ INSERT INTO Job (JobID, ContractNum, PClientNum, TStaffID, VIN, PUDateTime, PUAddress, DOAddress, Mileage, Fee) VALUES
213   (507, 407, 207, 114, 'STU90134', TO_DATE('2010-04-12 00:00:00', 'YYYY-MM-DD HH24:MI:SS'), '1358 Cedar Ave', '246 Maple St', 40, 50);
214
215 ✓ SELECT TaxiStaff.FName, TaxiStaff.LName, COUNT(*) as TotalJobs
216   FROM TaxiStaff
217   INNER JOIN Job ON TaxiStaff.TStaffID = Job.TStaffID
218   GROUP BY TaxiStaff.TStaffID, TaxiStaff.FName, TaxiStaff.LName;
219

```

Below the code is a table titled "TOTALJOBS" with the following data:

FNAME	LNAME	TOTALJOBS
Bob	Johnson	1
John	Smith	1
Lisa	James	1
Mike	Shula	1
Rob	Derek	1

At the bottom of the interface, there is a footer with the text: "2023 Oracle - Live SQL 23.1.5, running Oracle Database 19c EE Extreme Perf - 19.17.0.0.0 - Database Documentation - Ask Tom - Dev Gym" and "Built with ❤️ using Oracle APEX - Privacy - Terms of Use".

FULL TABLE OUTPUT:

FNAME	LNAME	TOTALJOBS
Bob	Johnson	1
John	Smith	1
Lisa	James	1
Mike	Shula	1
Rob	Derek	1
Tom	Brady	1
Sue	Williams	1

r) The total amount charged for each car in November 2000.

Query:

```

SELECT Taxi.VIN, SUM(Job.Fee) AS TotalAmountCharged
FROM Job
JOIN Taxi ON Job.VIN = Taxi.VIN
WHERE Job.PUDateTime BETWEEN TO_DATE('2000-11-01 00:00:00', 'YYYY-MM-DD
HH24:MI:SS') AND TO_DATE('2000-11-30 23:59:59', 'YYYY-MM-DD HH24:MI:SS')
GROUP BY Taxi.VIN;

```

Live SQL

SQL Worksheet

```

206 v INSERT INTO Job (JobID, ContractNum, PClientNum, TStaffID, VIN, PUDateTime, PUAddress, DOAddress, Mileage, Fee) VALUES
207   (504, 404, 204, 112, 'JKL01222', TO_DATE('2020-04-09 18:00:00', 'YYYY-MM-DD HH24:MI:SS'), '296 Maple St', '349 Pole St', 25, 35);
208 v INSERT INTO Job (JobID, ContractNum, PClientNum, TStaffID, VIN, PUDateTime, PUAddress, DOAddress, Mileage, Fee) VALUES
209   (505, 405, 205, 111, 'MNO34335', TO_DATE('2003-04-10 20:00:00', 'YYYY-MM-DD HH24:MI:SS'), '319 Hort St', '892 Peal St', 30, 40);
210 v INSERT INTO Job (JobID, ContractNum, PClientNum, TStaffID, VIN, PUDateTime, PUAddress, DOAddress, Mileage, Fee) VALUES
211   (506, 406, 206, 113, 'STU90231', TO_DATE('2013-04-11 22:00:00', 'YYYY-MM-DD HH24:MI:SS'), '842 Walnut St', '158 Mitch Ave', 35, 45);
212 v INSERT INTO Job (JobID, ContractNum, PClientNum, TStaffID, VIN, PUDateTime, PUAddress, DOAddress, Mileage, Fee) VALUES
213   (507, 407, 207, 114, 'STU90134', TO_DATE('2010-04-12 00:00:00', 'YYYY-MM-DD HH24:MI:SS'), '1358 Cedar Ave', '246 Maple St', 40, 50);
214
215 v SELECT Taxi.VIN, SUM(Job.Fee) AS TotalAmountCharged
216   FROM Job
217   JOIN Taxi ON Job.VIN = Taxi.VIN
218 WHERE Job.PUDateTime BETWEEN TO_DATE('2000-11-01 00:00:00', 'YYYY-MM-DD HH24:MI:SS') AND TO_DATE('2000-11-30 23:59:59', 'YYYY-MM-DD HH24:MI:SS')
219 GROUP BY Taxi.VIN;
220
1 row(s) inserted.

```

VIN	TOTALAMOUNTCHARGED
ABC12323	20
GHI78569	30

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2 rows selected.

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PART 3.3:

Query: SELECT * FROM Office WHERE NUMofStaff > 50

Purpose: Retrieve all offices that have more than 50 staff members.

Live SQL

SQL Worksheet

```

204 v INSERT INTO Job (JobID, ContractNum, PClientNum, TStaffID, VIN, PUDateTime, PUAddress, DOAddress, Mileage, Fee) VALUES
205   (503, 403, 203, 110, 'GHI78569', TO_DATE('2000-11-08 16:00:00', 'YYYY-MM-DD HH24:MI:SS'), '739 Lake St', '216 Maple St', 20, 30);
206 v INSERT INTO Job (JobID, ContractNum, PClientNum, TStaffID, VIN, PUDateTime, PUAddress, DOAddress, Mileage, Fee) VALUES
207   (504, 404, 204, 112, 'JKL01222', TO_DATE('2020-04-09 18:00:00', 'YYYY-MM-DD HH24:MI:SS'), '296 Maple St', '349 Pole St', 25, 35);
208 v INSERT INTO Job (JobID, ContractNum, PClientNum, TStaffID, VIN, PUDateTime, PUAddress, DOAddress, Mileage, Fee) VALUES
209   (505, 405, 205, 111, 'MNO34335', TO_DATE('2003-04-10 20:00:00', 'YYYY-MM-DD HH24:MI:SS'), '319 Hort St', '892 Peal St', 30, 40);
210 v INSERT INTO Job (JobID, ContractNum, PClientNum, TStaffID, VIN, PUDateTime, PUAddress, DOAddress, Mileage, Fee) VALUES
211   (506, 406, 206, 113, 'STU90231', TO_DATE('2013-04-11 22:00:00', 'YYYY-MM-DD HH24:MI:SS'), '842 Walnut St', '158 Mitch Ave', 35, 45);
212 v INSERT INTO Job (JobID, ContractNum, PClientNum, TStaffID, VIN, PUDateTime, PUAddress, DOAddress, Mileage, Fee) VALUES
213   (507, 407, 207, 114, 'STU90134', TO_DATE('2010-04-12 00:00:00', 'YYYY-MM-DD HH24:MI:SS'), '1358 Cedar Ave', '246 Maple St', 40, 50);
214
215 SELECT * FROM Office WHERE NUMofStaff > 50
216
217
218

```

OFFICENUM	NUMOFSTAFF	NUMOFPCLIENTS	PHONENUM	CITY
1	54	102	604-555-1234	New York
3	60	142	604-555-9876	Glasgow
6	51	120	604-555-2345	San Francisco
7	58	125	604-555-7890	Boston

[Download CSV](#)

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Query: SELECT DISTINCT Sex FROM TaxiStaff

Purpose: Retrieve all unique values of sex from the TaxiStaff table.

```
205  (503, 403, 203, 110, 'GHI78569', TO_DATE('2000-11-08 16:00:00', 'YYYY-MM-DD HH24:MI:SS'), '739 Lake St', '216 Maple St', 20, 30);
206 v INSERT INTO Job (JobID, ContractNum, PClientNum, TStaffID, VIN, PUUpdateTime, PUAddress, DOAddress, Mileage, Fee) VALUES
207  (504, 404, 204, 112, 'JKL01222', TO_DATE('2020-04-09 18:00:00', 'YYYY-MM-DD HH24:MI:SS'), '296 Maple St', '349 Pole St', 25, 35);
208 v INSERT INTO Job (JobID, ContractNum, PClientNum, TStaffID, VIN, PUUpdateTime, PUAddress, DOAddress, Mileage, Fee) VALUES
209  (505, 405, 205, 111, 'MNO34335', TO_DATE('2003-04-10 20:00:00', 'YYYY-MM-DD HH24:MI:SS'), '319 Hort St', '892 Peal St', 30, 40);
210 v INSERT INTO Job (JobID, ContractNum, PClientNum, TStaffID, VIN, PUUpdateTime, PUAddress, DOAddress, Mileage, Fee) VALUES
211  (506, 406, 206, 113, 'STU90231', TO_DATE('2013-04-11 22:00:00', 'YYYY-MM-DD HH24:MI:SS'), '842 Walnut St', '158 Mitch Ave', 35, 45);
212 v INSERT INTO Job (JobID, ContractNum, PClientNum, TStaffID, VIN, PUUpdateTime, PUAddress, DOAddress, Mileage, Fee) VALUES
213  (507, 407, 207, 114, 'STU90134', TO_DATE('2010-04-12 00:00:00', 'YYYY-MM-DD HH24:MI:SS'), '1358 Cedar Ave', '246 Maple St', 40, 50);
214
215 SELECT DISTINCT Sex FROM TaxiStaff
216
217
218
219
```

1 row(s) inserted.

SEX
M
F

Download CSV

2 rows selected.

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Query: SELECT * FROM PrivateClient WHERE PhoneNum LIKE '604%'

Purpose: Retrieve all private clients whose phone number starts with '604'.

```
205  (503, 403, 203, 110, 'GHI78569', TO_DATE('2000-11-08 16:00:00', 'YYYY-MM-DD HH24:MI:SS'), '739 Lake St', '216 Maple St', 20, 30);
206 v INSERT INTO Job (JobID, ContractNum, PClientNum, TStaffID, VIN, PUUpdateTime, PUAddress, DOAddress, Mileage, Fee) VALUES
207  (504, 404, 204, 112, 'JKL01222', TO_DATE('2020-04-09 18:00:00', 'YYYY-MM-DD HH24:MI:SS'), '296 Maple St', '349 Pole St', 25, 35);
208 v INSERT INTO Job (JobID, ContractNum, PClientNum, TStaffID, VIN, PUUpdateTime, PUAddress, DOAddress, Mileage, Fee) VALUES
209  (505, 405, 205, 111, 'MNO34335', TO_DATE('2003-04-10 20:00:00', 'YYYY-MM-DD HH24:MI:SS'), '319 Hort St', '892 Peal St', 30, 40);
210 v INSERT INTO Job (JobID, ContractNum, PClientNum, TStaffID, VIN, PUUpdateTime, PUAddress, DOAddress, Mileage, Fee) VALUES
211  (506, 406, 206, 113, 'STU90231', TO_DATE('2013-04-11 22:00:00', 'YYYY-MM-DD HH24:MI:SS'), '842 Walnut St', '158 Mitch Ave', 35, 45);
212 v INSERT INTO Job (JobID, ContractNum, PClientNum, TStaffID, VIN, PUUpdateTime, PUAddress, DOAddress, Mileage, Fee) VALUES
213  (507, 407, 207, 114, 'STU90134', TO_DATE('2010-04-12 00:00:00', 'YYYY-MM-DD HH24:MI:SS'), '1358 Cedar Ave', '246 Maple St', 40, 50);
214
215 SELECT * FROM PrivateClient WHERE PhoneNum LIKE '604%'
216
217
218
219
```

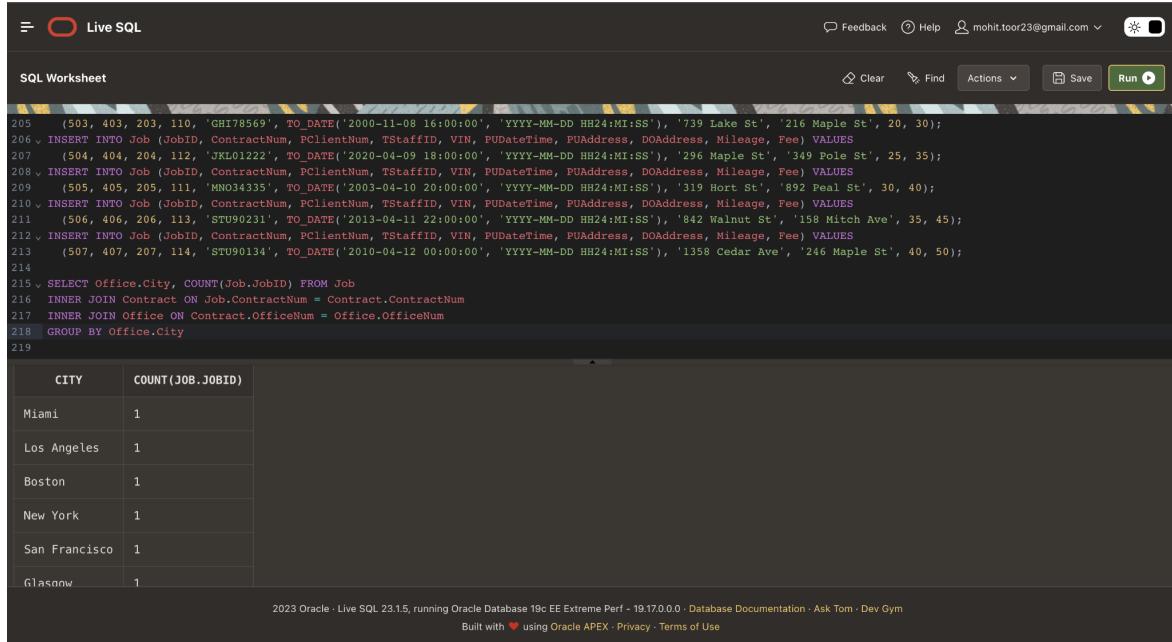
1 row(s) inserted.

PCCLIENTNUM	FNAME	LNAME	PHONENUM
201	Alice	Jones	604-123-4567
203	Charlie	Brown	604-345-6789
205	Emily	Davis	604-567-8901
207	Grace	Taylor	604-789-0123

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Query: SELECT Office.City, COUNT(Job.JobID) FROM Job
 INNER JOIN Contract ON Job.ContractNum = Contract.ContractNum
 INNER JOIN Office ON Contract.OfficeNum = Office.OfficeNum
 GROUP BY Office.City

Purpose: Retrieve the number of jobs carried out by each office, grouped by city.



The screenshot shows the Oracle Live SQL interface with the following details:

- SQL Worksheet:** Contains the SQL code for the query.
- Output:** A table showing the count of jobs for each city.

```

205   (503, 403, 203, 110, 'GH178569', TO_DATE('2000-11-08 16:00:00', 'YYYY-MM-DD HH24:MI:SS'), '739 Lake St', '216 Maple St', 20, 30);
206 ✓ INSERT INTO Job (JobID, ContractNum, PClientNum, TStaffID, VIN, PUDate, PUAddress, DOAddress, Mileage, Fee) VALUES
207   (504, 404, 204, 112, 'JKL01222', TO_DATE('2020-04-09 18:00:00', 'YYYY-MM-DD HH24:MI:SS'), '296 Maple St', '349 Pole St', 25, 35);
208 ✓ INSERT INTO Job (JobID, ContractNum, PClientNum, TStaffID, VIN, PUDate, PUAddress, DOAddress, Mileage, Fee) VALUES
209   (505, 405, 205, 111, 'MNO34335', TO_DATE('2003-04-10 20:00:00', 'YYYY-MM-DD HH24:MI:SS'), '319 Hort St', '892 Peal St', 30, 40);
210 ✓ INSERT INTO Job (JobID, ContractNum, PClientNum, TStaffID, VIN, PUDate, PUAddress, DOAddress, Mileage, Fee) VALUES
211   (506, 406, 206, 113, 'STU90231', TO_DATE('2013-04-11 22:00:00', 'YYYY-MM-DD HH24:MI:SS'), '842 Walnut St', '158 Mitch Ave', 35, 45);
212 ✓ INSERT INTO Job (JobID, ContractNum, PClientNum, TStaffID, VIN, PUDate, PUAddress, DOAddress, Mileage, Fee) VALUES
213   (507, 407, 207, 114, 'STU90134', TO_DATE('2010-04-12 00:00:00', 'YYYY-MM-DD HH24:MI:SS'), '1358 Cedar Ave', '246 Maple St', 40, 50);
214
215 ✓ SELECT Office.City, COUNT(Job.JobID) FROM Job
216   INNER JOIN Contract ON Job.ContractNum = Contract.ContractNum
217   INNER JOIN Office ON Contract.OfficeNum = Office.OfficeNum
218   GROUP BY Office.City
219
  
```

CITY	COUNT(JOB.JOBID)
Miami	1
Los Angeles	1
Boston	1
New York	1
San Francisco	1
Glasgow	1

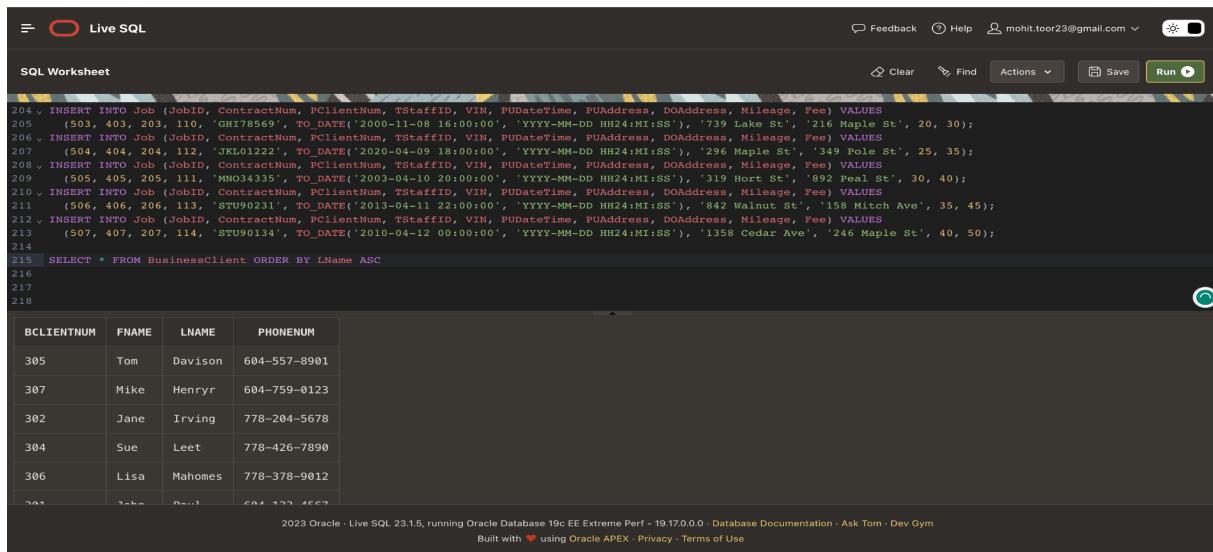
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FULL TABLE OUTPUT:

CITY	COUNT(JOB.JOBID)
Miami	1
Los Angeles	1
Boston	1
New York	1
San Francisco	1
Glasgow	1
Houston	1

Query: SELECT * FROM BusinessClient ORDER BY LName ASC

Purpose: Retrieve all business clients, sorted by last name in ascending order.



The screenshot shows the Oracle Live SQL interface with the following details:

- SQL Worksheet:** Contains the SQL code for the query.
- Output:** A table showing the details of all business clients.

```

204 ✓ INSERT INTO Job (JobID, ContractNum, PClientNum, TStaffID, VIN, PUDate, PUAddress, DOAddress, Mileage, Fee) VALUES
205   (503, 403, 203, 110, 'GH178569', TO_DATE('2000-11-08 16:00:00', 'YYYY-MM-DD HH24:MI:SS'), '739 Lake St', '216 Maple St', 20, 30);
206 ✓ INSERT INTO Job (JobID, ContractNum, PClientNum, TStaffID, VIN, PUDate, PUAddress, DOAddress, Mileage, Fee) VALUES
207   (504, 404, 204, 112, 'JKL01222', TO_DATE('2020-04-09 18:00:00', 'YYYY-MM-DD HH24:MI:SS'), '296 Maple St', '349 Pole St', 25, 35);
208 ✓ INSERT INTO Job (JobID, ContractNum, PClientNum, TStaffID, VIN, PUDate, PUAddress, DOAddress, Mileage, Fee) VALUES
209   (505, 405, 205, 111, 'MNO34335', TO_DATE('2003-04-10 20:00:00', 'YYYY-MM-DD HH24:MI:SS'), '319 Hort St', '892 Peal St', 30, 40);
210 ✓ INSERT INTO Job (JobID, ContractNum, PClientNum, TStaffID, VIN, PUDate, PUAddress, DOAddress, Mileage, Fee) VALUES
211   (506, 406, 206, 113, 'STU90231', TO_DATE('2013-04-11 22:00:00', 'YYYY-MM-DD HH24:MI:SS'), '842 Walnut St', '158 Mitch Ave', 35, 45);
212 ✓ INSERT INTO Job (JobID, ContractNum, PClientNum, TStaffID, VIN, PUDate, PUAddress, DOAddress, Mileage, Fee) VALUES
213   (507, 407, 207, 114, 'STU90134', TO_DATE('2010-04-12 00:00:00', 'YYYY-MM-DD HH24:MI:SS'), '1358 Cedar Ave', '246 Maple St', 40, 50);
214
215 ✓ SELECT * FROM BusinessClient ORDER BY LName ASC
216
217
218
  
```

BCLIENTNUM	FNAME	LNAME	PHONENUM
305	Tom	Davison	604-557-8901
307	Mike	Henryr	604-759-0123
302	Jane	Irving	778-204-5678
304	Sue	Leet	778-426-7890
306	Lisa	Mahomes	778-378-9012

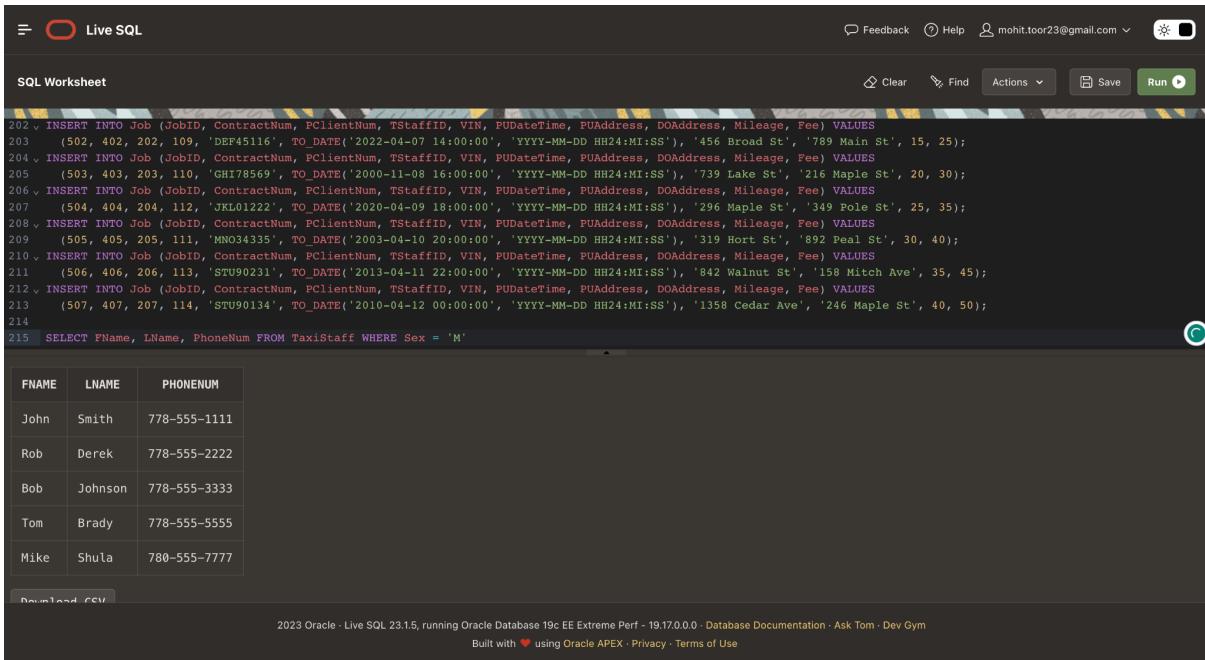
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FULL TABLE OUTPUT:

BCLIENTNUM	FNAME	LNAME	PHONENUM
305	Tom	Davison	604-557-8901
307	Mike	Henry	604-759-0123
302	Jane	Irving	778-204-5678
304	Sue	Leet	778-426-7890
306	Lisa	Mahomes	778-378-9012
301	John	Paul	604-133-4567
303	Bob	Russell	604-315-6789

Query: SELECT FName, LName, PhoneNum FROM TaxiStaff WHERE Sex = 'M'

Purpose: Retrieve the first name, last name, and phone number of all male taxi staff.



```

202 v INSERT INTO Job (JobID, ContractNum, PClientNum, TStaffID, VIN, PUDateTime, PUAddress, DOAddress, Mileage, Fee) VALUES
203  (502, 402, 202, 109, 'DEF45116', TO_DATE('2022-04-07 14:00:00', 'YYYY-MM-DD HH24:MI:SS'), '456 Broad St', '789 Main St', 15, 25);
204 v INSERT INTO Job (JobID, ContractNum, PClientNum, TStaffID, VIN, PUDateTime, PUAddress, DOAddress, Mileage, Fee) VALUES
205  (503, 403, 203, 110, 'GH178569', TO_DATE('2000-11-08 16:00:00', 'YYYY-MM-DD HH24:MI:SS'), '739 Lake St', '216 Maple St', 20, 30);
206 v INSERT INTO Job (JobID, ContractNum, PClientNum, TStaffID, VIN, PUDateTime, PUAddress, DOAddress, Mileage, Fee) VALUES
207  (504, 404, 204, 112, 'JKL01222', TO_DATE('2020-04-09 18:00:00', 'YYYY-MM-DD HH24:MI:SS'), '296 Maple St', '349 Pole St', 25, 35);
208 v INSERT INTO Job (JobID, ContractNum, PClientNum, TStaffID, VIN, PUDateTime, PUAddress, DOAddress, Mileage, Fee) VALUES
209  (505, 405, 205, 111, 'MNO34335', TO_DATE('2003-04-10 20:00:00', 'YYYY-MM-DD HH24:MI:SS'), '319 Hort St', '892 Peal St', 30, 40);
210 v INSERT INTO Job (JobID, ContractNum, PClientNum, TStaffID, VIN, PUDateTime, PUAddress, DOAddress, Mileage, Fee) VALUES
211  (506, 406, 206, 113, 'STU90231', TO_DATE('2013-04-11 22:00:00', 'YYYY-MM-DD HH24:MI:SS'), '842 Walnut St', '158 Mitch Ave', 35, 45);
212 v INSERT INTO Job (JobID, ContractNum, PClientNum, TStaffID, VIN, PUDateTime, PUAddress, DOAddress, Mileage, Fee) VALUES
213  (507, 407, 207, 114, 'STU90134', TO_DATE('2010-04-12 00:00:00', 'YYYY-MM-DD HH24:MI:SS'), '1358 Cedar Ave', '246 Maple St', 40, 50);
214
215 SELECT FName, LName, PhoneNum FROM TaxiStaff WHERE Sex = 'M'

```

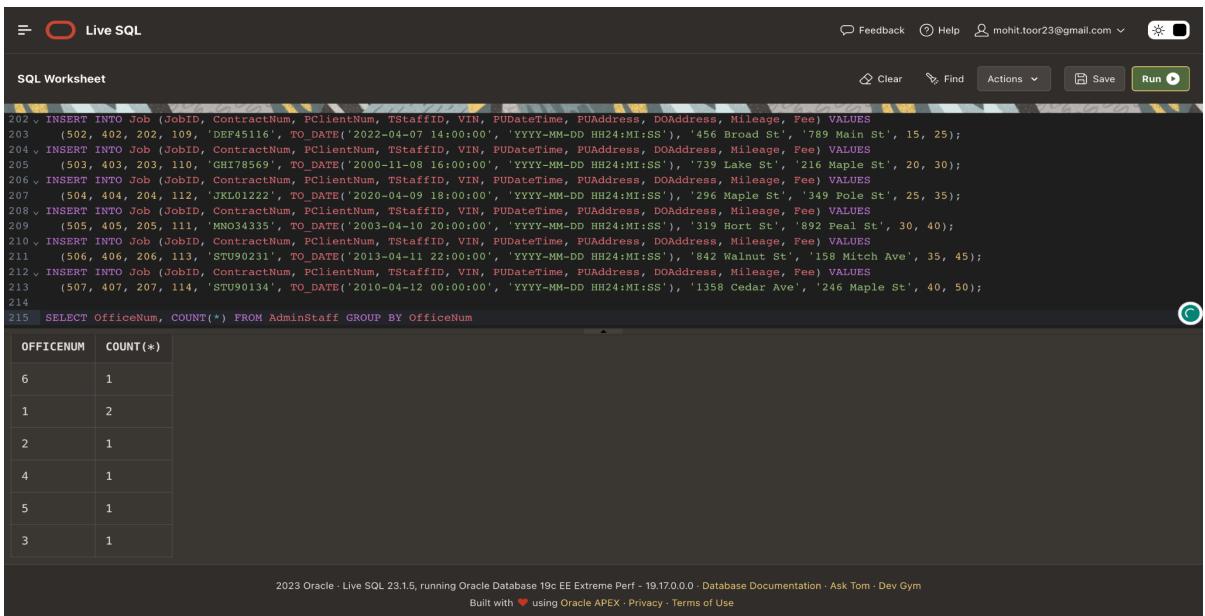
FNAME	LNAME	PHONENUM
John	Smith	778-555-1111
Rob	Derek	778-555-2222
Bob	Johnson	778-555-3333
Tom	Brady	778-555-5555
Mike	Shula	780-555-7777

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Query: SELECT OfficeNum, COUNT(*) FROM AdminStaff GROUP BY OfficeNum

Purpose: Count the number of administrative staff in each office.



```

202 v INSERT INTO Job (JobID, ContractNum, PClientNum, TStaffID, VIN, PUDateTime, PUAddress, DOAddress, Mileage, Fee) VALUES
203  (502, 402, 202, 109, 'DEF45116', TO_DATE('2022-04-07 14:00:00', 'YYYY-MM-DD HH24:MI:SS'), '456 Broad St', '789 Main St', 15, 25);
204 v INSERT INTO Job (JobID, ContractNum, PClientNum, TStaffID, VIN, PUDateTime, PUAddress, DOAddress, Mileage, Fee) VALUES
205  (503, 403, 203, 110, 'GH178569', TO_DATE('2000-11-08 16:00:00', 'YYYY-MM-DD HH24:MI:SS'), '739 Lake St', '216 Maple St', 20, 30);
206 v INSERT INTO Job (JobID, ContractNum, PClientNum, TStaffID, VIN, PUDateTime, PUAddress, DOAddress, Mileage, Fee) VALUES
207  (504, 404, 204, 112, 'JKL01222', TO_DATE('2020-04-09 18:00:00', 'YYYY-MM-DD HH24:MI:SS'), '296 Maple St', '349 Pole St', 25, 35);
208 v INSERT INTO Job (JobID, ContractNum, PClientNum, TStaffID, VIN, PUDateTime, PUAddress, DOAddress, Mileage, Fee) VALUES
209  (505, 405, 205, 111, 'MNO34335', TO_DATE('2003-04-10 20:00:00', 'YYYY-MM-DD HH24:MI:SS'), '319 Hort St', '892 Peal St', 30, 40);
210 v INSERT INTO Job (JobID, ContractNum, PClientNum, TStaffID, VIN, PUDateTime, PUAddress, DOAddress, Mileage, Fee) VALUES
211  (506, 406, 206, 113, 'STU90231', TO_DATE('2013-04-11 22:00:00', 'YYYY-MM-DD HH24:MI:SS'), '842 Walnut St', '158 Mitch Ave', 35, 45);
212 v INSERT INTO Job (JobID, ContractNum, PClientNum, TStaffID, VIN, PUDateTime, PUAddress, DOAddress, Mileage, Fee) VALUES
213  (507, 407, 207, 114, 'STU90134', TO_DATE('2010-04-12 00:00:00', 'YYYY-MM-DD HH24:MI:SS'), '1358 Cedar Ave', '246 Maple St', 40, 50);
214
215 SELECT OfficeNum, COUNT(*) FROM AdminStaff GROUP BY OfficeNum

```

OFFICENUM	COUNT(*)
6	1
1	2
2	1
4	1
5	1
3	1

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Query: Retrieve the job ID, pickup address, drop-off address, and fee for all jobs that have a fee greater than \$50.

Purpose: This query retrieves the job ID, pickup address, drop-off address, and fee for all jobs that have a fee greater than \$50.

The screenshot shows the Oracle Live SQL interface. The SQL Worksheet contains the following code:

```
203  (502, 402, 202, 109, 'DEF45116', TO_DATE('2023-04-07 14:00:00', 'YYYY-MM-DD HH24:MI:SS'), '456 Broad St', '789 Oak St', 15, 25);
204  INSERT INTO Job (JobID, ContractNum, PClientNum, TStaffID, VIN, PUDateTime, PUAddress, DOAddress, Mileage, Fee) VALUES
205  (503, 403, 203, 110, 'GH178569', TO_DATE('2000-09-08 16:00:00', 'YYYY-MM-DD HH24:MI:SS'), '739 Lake St', '216 Maple St', 20, 30);
206  INSERT INTO Job (JobID, ContractNum, PClientNum, TStaffID, VIN, PUDateTime, PUAddress, DOAddress, Mileage, Fee) VALUES
207  (504, 404, 204, 112, 'JKL01222', TO_DATE('2020-04-09 18:00:00', 'YYYY-MM-DD HH24:MI:SS'), '296 Maple St', '349 Pole St', 25, 35);
208  INSERT INTO Job (JobID, ContractNum, PClientNum, TStaffID, VIN, PUDateTime, PUAddress, DOAddress, Mileage, Fee) VALUES
209  (505, 405, 205, 111, 'MNO34335', TO_DATE('2003-04-10 20:00:00', 'YYYY-MM-DD HH24:MI:SS'), '319 Hort St', '892 Peal St', 30, 40);
210  INSERT INTO Job (JobID, ContractNum, PClientNum, TStaffID, VIN, PUDateTime, PUAddress, DOAddress, Mileage, Fee) VALUES
211  (506, 406, 206, 113, 'STU90231', TO_DATE('2013-04-11 22:00:00', 'YYYY-MM-DD HH24:MI:SS'), '842 Walnut St', '158 Mitch Ave', 35, 45);
212  INSERT INTO Job (JobID, ContractNum, PClientNum, TStaffID, VIN, PUDateTime, PUAddress, DOAddress, Mileage, Fee) VALUES
213  (507, 407, 207, 114, 'STU90134', TO_DATE('2010-04-12 00:00:00', 'YYYY-MM-DD HH24:MI:SS'), '1358 Cedar Ave', '246 Maple St', 40, 51);
214
215  SELECT JobID, PUAddress, DOAddress, Fee FROM Job WHERE Fee > 50;
216
```

Execution results:

```
1 row(s) inserted.
1 row(s) inserted.
1 row(s) inserted.
```

JOBID	PUADDRESS	DOADDRESS	Fee
507	1358 Cedar Ave	246 Maple St	51

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Query: SELECT * FROM BusinessClient WHERE PhoneNum='604-133-4567';

Purpose: This query retrieves the business client with the phone number 604-133-4567.

The screenshot shows the Oracle Live SQL interface. The SQL Worksheet contains the following code:

```
202  INSERT INTO Job (JobID, ContractNum, PClientNum, TStaffID, VIN, PUDateTime, PUAddress, DOAddress, Mileage, Fee) VALUES
203  (502, 402, 202, 109, 'DEF45116', TO_DATE('2023-04-07 14:00:00', 'YYYY-MM-DD HH24:MI:SS'), '456 Broad St', '789 Oak St', 15, 25);
204  INSERT INTO Job (JobID, ContractNum, PClientNum, TStaffID, VIN, PUDateTime, PUAddress, DOAddress, Mileage, Fee) VALUES
205  (503, 403, 203, 110, 'GH178569', TO_DATE('2000-09-08 16:00:00', 'YYYY-MM-DD HH24:MI:SS'), '739 Lake St', '216 Maple St', 20, 30);
206  INSERT INTO Job (JobID, ContractNum, PClientNum, TStaffID, VIN, PUDateTime, PUAddress, DOAddress, Mileage, Fee) VALUES
207  (504, 404, 204, 112, 'JKL01222', TO_DATE('2020-04-09 18:00:00', 'YYYY-MM-DD HH24:MI:SS'), '296 Maple St', '349 Pole St', 25, 35);
208  INSERT INTO Job (JobID, ContractNum, PClientNum, TStaffID, VIN, PUDateTime, PUAddress, DOAddress, Mileage, Fee) VALUES
209  (505, 405, 205, 111, 'MNO34335', TO_DATE('2003-04-10 20:00:00', 'YYYY-MM-DD HH24:MI:SS'), '319 Hort St', '892 Peal St', 30, 40);
210  INSERT INTO Job (JobID, ContractNum, PClientNum, TStaffID, VIN, PUDateTime, PUAddress, DOAddress, Mileage, Fee) VALUES
211  (506, 406, 206, 113, 'STU90231', TO_DATE('2013-04-11 22:00:00', 'YYYY-MM-DD HH24:MI:SS'), '842 Walnut St', '158 Mitch Ave', 35, 45);
212  INSERT INTO Job (JobID, ContractNum, PClientNum, TStaffID, VIN, PUDateTime, PUAddress, DOAddress, Mileage, Fee) VALUES
213  (507, 407, 207, 114, 'STU90134', TO_DATE('2010-04-12 00:00:00', 'YYYY-MM-DD HH24:MI:SS'), '1358 Cedar Ave', '246 Maple St', 40, 51);
214
215  SELECT * FROM BusinessClient WHERE PhoneNum='604-133-4567';
216
```

Execution results:

```
1 row(s) inserted.
1 row(s) inserted.
1 row(s) inserted.
```

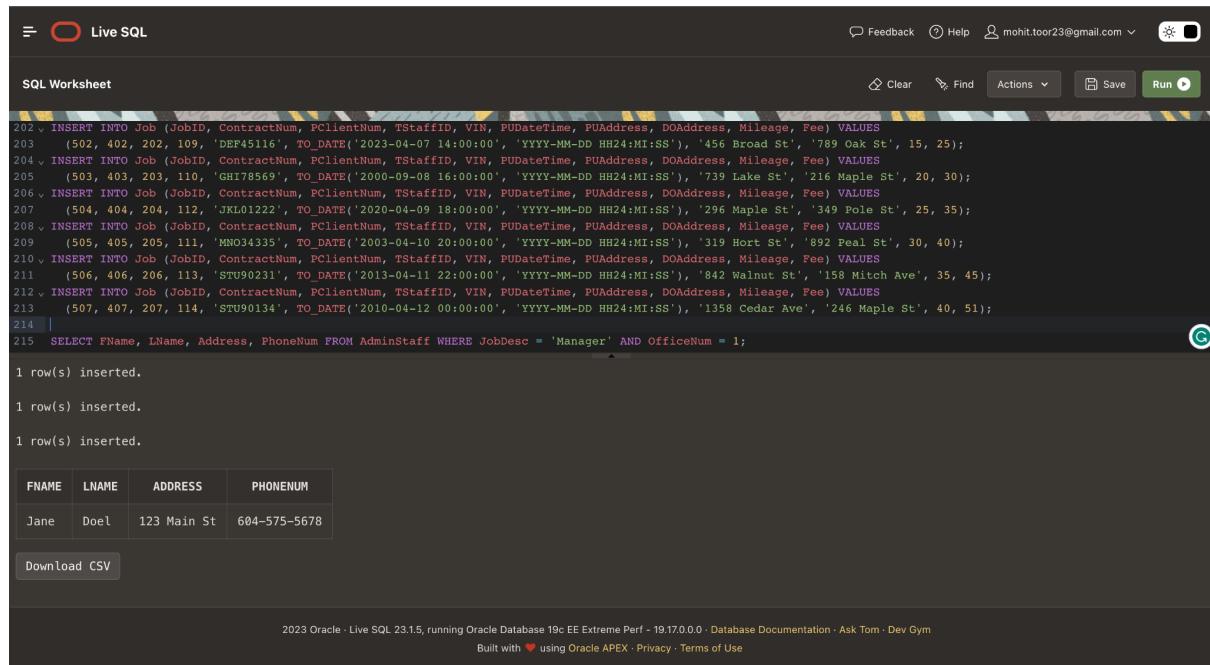
BCLIENTNUM	FNAME	LNAME	PHONENUM
301	John	Paul	604-133-4567

Download CSV

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Query: SELECT FName, LName, Address, PhoneNum FROM AdminStaff WHERE JobDesc = 'Manager' AND OfficeNum = 1;

Purpose: This query retrieves the name, address and phone number of all administrative staff members who are managers and work in the office number 1.



The screenshot shows the Oracle Live SQL interface. At the top, there are tabs for 'Live SQL' and 'SQL Worksheet'. The 'SQL Worksheet' tab is active, showing the following SQL code:

```
202 v INSERT INTO Job (JobID, ContractNum, PClientNum, TStaffID, VIN, PUDateTime, PUAddress, DOAddress, Mileage, Fee) VALUES
203   (502, 402, 202, 109, 'DEF45116', TO_DATE('2023-04-07 14:00:00', 'YYYY-MM-DD HH24:MI:SS'), '456 Broad St', '789 Oak St', 15, 25);
204 v INSERT INTO Job (JobID, ContractNum, PClientNum, TStaffID, VIN, PUDateTime, PUAddress, DOAddress, Mileage, Fee) VALUES
205   (503, 403, 203, 110, 'GH178569', TO_DATE('2000-09-08 16:00:00', 'YYYY-MM-DD HH24:MI:SS'), '739 Lake St', '216 Maple St', 20, 30);
206 v INSERT INTO Job (JobID, ContractNum, PClientNum, TStaffID, VIN, PUDateTime, PUAddress, DOAddress, Mileage, Fee) VALUES
207   (504, 404, 204, 112, 'JKL01222', TO_DATE('2020-04-09 18:00:00', 'YYYY-MM-DD HH24:MI:SS'), '296 Maple St', '349 Pole St', 25, 35);
208 v INSERT INTO Job (JobID, ContractNum, PClientNum, TStaffID, VIN, PUDateTime, PUAddress, DOAddress, Mileage, Fee) VALUES
209   (505, 405, 205, 111, 'MNO34335', TO_DATE('2003-04-10 20:00:00', 'YYYY-MM-DD HH24:MI:SS'), '319 Hort St', '892 Peal St', 30, 40);
210 v INSERT INTO Job (JobID, ContractNum, PClientNum, TStaffID, VIN, PUDateTime, PUAddress, DOAddress, Mileage, Fee) VALUES
211   (506, 406, 206, 113, 'STU90231', TO_DATE('2013-04-11 22:00:00', 'YYYY-MM-DD HH24:MI:SS'), '842 Walnut St', '158 Mitch Ave', 35, 45);
212 v INSERT INTO Job (JobID, ContractNum, PClientNum, TStaffID, VIN, PUDateTime, PUAddress, DOAddress, Mileage, Fee) VALUES
213   (507, 407, 207, 114, 'STU90134', TO_DATE('2010-04-12 00:00:00', 'YYYY-MM-DD HH24:MI:SS'), '1358 Cedar Ave', '246 Maple St', 40, 51);
214 |
215 SELECT FName, LName, Address, PhoneNum FROM AdminStaff WHERE JobDesc = 'Manager' AND OfficeNum = 1;
```

Below the code, the results of the query are displayed:

FNAME	LNAME	ADDRESS	PHONENUM
Jane	Doel	123 Main St	604-575-5678

At the bottom of the interface, there is a note: "2023 Oracle - Live SQL 23.1.5, running Oracle Database 19c EE Extreme Perf - 19.17.0.0.0 · Database Documentation · Ask Tom · Dev Gym · Built with ❤️ using Oracle APEX · Privacy · Terms of Use".

FULL SCRIPT (FOR COPY AND PASTE INTO SQL LIVE DATABASE):

```
CREATE TABLE Office (
    OfficeNum INT PRIMARY KEY,
    NUMofStaff INT,
    NUMofPClients INT,
    PhoneNum VARCHAR(25),
    City VARCHAR(50)
);
```

```
CREATE TABLE AdminStaff (
    AStaffID INT PRIMARY KEY,
    OfficeNum INT,
    JobDesc VARCHAR(50),
    FName VARCHAR(50),
    LName VARCHAR(50),
    Address VARCHAR(100),
    Sex VARCHAR(1),
    DOB DATE,
    PhoneNum VARCHAR(25),
    FOREIGN KEY (OfficeNum) REFERENCES Office (OfficeNum)
);
```

```
CREATE TABLE TaxiStaff (
```

```
TStaffID INT PRIMARY KEY,  
JobDesc VARCHAR(50),  
FName VARCHAR(50),  
LName VARCHAR(50),  
Address VARCHAR(100),  
Sex VARCHAR(1),  
DOB DATE,  
PhoneNum VARCHAR(25)  
);
```

```
CREATE TABLE Taxi (  
VIN VARCHAR(25) PRIMARY KEY,  
TStaffID INT,  
FOREIGN KEY (TStaffID) REFERENCES TaxiStaff (TStaffID)  
);
```

```
CREATE TABLE PrivateClient (  
PClientNum INT PRIMARY KEY,  
FName VARCHAR(50),  
LName VARCHAR(50),  
PhoneNum VARCHAR(25)  
);
```

```
CREATE TABLE BusinessClient (  
BClientNum INT PRIMARY KEY,  
FName VARCHAR(50),  
LName VARCHAR(50),  
PhoneNum VARCHAR(25)  
);
```

```
CREATE TABLE Contract (  
ContractNum INT PRIMARY KEY,  
BClientNum INT,  
NumofJobs INT,  
OfficeNum INT,  
FOREIGN KEY (BClientNum) REFERENCES BusinessClient (BClientNum),  
FOREIGN KEY (OfficeNum) REFERENCES Office (OfficeNum)  
);
```

```
CREATE TABLE Job (  
JobID INT PRIMARY KEY,  
ContractNum INT,  
PClientNum INT,  
TStaffID INT,  
VIN VARCHAR(25),  
PUDateTime TimeStamp,  
PUAddress VARCHAR(100),  
DOAddress VARCHAR(100),
```

```
Mileage INT,  
Fee INT,  
FOREIGN KEY (ContractNum) REFERENCES Contract (ContractNum),  
FOREIGN KEY (PClientNum) REFERENCES PrivateClient (PClientNum),  
FOREIGN KEY (VIN) REFERENCES Taxi (VIN),  
FOREIGN KEY (TStaffID) REFERENCES TaxiStaff (TStaffID)  
);
```

```
INSERT INTO Office (OfficeNum, NUMofStaff, NUMofPClients, PhoneNum, City) VALUES  
(1, 54, 102, '604-555-1234', 'New York');  
INSERT INTO Office (OfficeNum, NUMofStaff, NUMofPClients, PhoneNum, City) VALUES  
(2, 45, 112, '604-555-5678', 'Los Angeles');  
INSERT INTO Office (OfficeNum, NUMofStaff, NUMofPClients, PhoneNum, City) VALUES  
(3, 60, 142, '604-555-9876', 'Glasgow');  
INSERT INTO Office (OfficeNum, NUMofStaff, NUMofPClients, PhoneNum, City) VALUES  
(4, 34, 97, '604-555-4321', 'Houston');  
INSERT INTO Office (OfficeNum, NUMofStaff, NUMofPClients, PhoneNum, City) VALUES  
(5, 42, 109, '604-555-8765', 'Miami');  
INSERT INTO Office (OfficeNum, NUMofStaff, NUMofPClients, PhoneNum, City) VALUES  
(6, 51, 120, '604-555-2345', 'San Francisco');  
INSERT INTO Office (OfficeNum, NUMofStaff, NUMofPClients, PhoneNum, City) VALUES  
(7, 58, 125, '604-555-7890', 'Boston');
```

```
INSERT INTO AdminStaff (AStaffID, OfficeNum, JobDesc, FName, LName, Address, Sex,  
DOB, PhoneNum) VALUES  
(101, 1, 'Dispatch', 'John', 'Doe', '123 Main St', 'M', TO_DATE('01-JAN-1990',  
'DD-MON-YYYY'), '604-535-1234');  
INSERT INTO AdminStaff (AStaffID, OfficeNum, JobDesc, FName, LName, Address, Sex,  
DOB, PhoneNum) VALUES  
(102, 1, 'Manager', 'Jane', 'Doe', '123 Main St', 'F', TO_DATE('02-FEB-1991',  
'DD-MON-YYYY'), '604-575-5678');  
INSERT INTO AdminStaff (AStaffID, OfficeNum, JobDesc, FName, LName, Address, Sex,  
DOB, PhoneNum) VALUES  
(103, 2, 'Manager', 'Bob', 'Smithe', '456 Elm St', 'M', TO_DATE('03-MAR-1992',  
'DD-MON-YYYY'), '778-535-9012');  
INSERT INTO AdminStaff (AStaffID, OfficeNum, JobDesc, FName, LName, Address, Sex,  
DOB, PhoneNum) VALUES  
(104, 3, 'Dispatch', 'Sue', 'John', '789 Oak St', 'F', TO_DATE('04-APR-1993',  
'DD-MON-YYYY'), '778-555-3456');  
INSERT INTO AdminStaff (AStaffID, OfficeNum, JobDesc, FName, LName, Address, Sex,  
DOB, PhoneNum) VALUES  
(105, 4, 'Manager', 'Tom', 'Brown', '246 Maple St', 'M', TO_DATE('05-MAY-1994',  
'DD-MON-YYYY'), '778-555-7890');  
INSERT INTO AdminStaff (AStaffID, OfficeNum, JobDesc, FName, LName, Address, Sex,  
DOB, PhoneNum) VALUES  
(106, 5, 'Manager', 'Lisa', 'Jones', '369 Pine St', 'F', TO_DATE('06-JUN-1995',  
'DD-MON-YYYY'), '778-555-2345');
```

```
INSERT INTO AdminStaff (AStaffID, OfficeNum, JobDesc, FName, LName, Address, Sex, DOB, PhoneNum) VALUES  
(107, 6, 'Dispatch', 'Mike', 'Davis', '802 Walnut St', 'M', TO_DATE('07-JUL-1996',  
'DD-MON-YYYY'), '778-555-6789');
```

```
INSERT INTO TaxiStaff (TStaffID, JobDesc, FName, LName, Address, Sex, DOB, PhoneNum) VALUES  
(108, 'Driver', 'John', 'Smith', '143 Main St', 'M', TO_DATE('01-JAN-1991',  
'DD-MON-YYYY'), '778-555-1111');  
INSERT INTO TaxiStaff (TStaffID, JobDesc, FName, LName, Address, Sex, DOB, PhoneNum) VALUES  
(109, 'Driver', 'Rob', 'Derek', '416 Elm St', 'M', TO_DATE('02-SEP-1993', 'DD-MON-YYYY'),  
'778-555-2222');  
INSERT INTO TaxiStaff (TStaffID, JobDesc, FName, LName, Address, Sex, DOB, PhoneNum) VALUES  
(110, 'Owner', 'Bob', 'Johnson', '739 Oak St', 'M', TO_DATE('03-MAY-1992',  
'DD-MON-YYYY'), '778-555-3333');  
INSERT INTO TaxiStaff (TStaffID, JobDesc, FName, LName, Address, Sex, DOB, PhoneNum) VALUES  
(111, 'Owner', 'Sue', 'Williams', '276 Maple St', 'F', TO_DATE('04-FEB-1993',  
'DD-MON-YYYY'), '778-555-4444');  
INSERT INTO TaxiStaff (TStaffID, JobDesc, FName, LName, Address, Sex, DOB, PhoneNum) VALUES  
(112, 'Driver', 'Tom', 'Brady', '319 Pine St', 'M', TO_DATE('05-JUL-1994', 'DD-MON-YYYY'),  
'778-555-5555');  
INSERT INTO TaxiStaff (TStaffID, JobDesc, FName, LName, Address, Sex, DOB, PhoneNum) VALUES  
(113, 'Driver', 'Lisa', 'James', '892 Walnut St', 'F', TO_DATE('06-APR-1995',  
'DD-MON-YYYY'), '780-555-6666');  
INSERT INTO TaxiStaff (TStaffID, JobDesc, FName, LName, Address, Sex, DOB, PhoneNum) VALUES  
(114, 'Owner', 'Mike', 'Shula', '1358 Cedar Ave', 'M', TO_DATE('07-JAN-1996',  
'DD-MON-YYYY'), '780-555-7777');  
  
INSERT INTO Taxi (VIN, TStaffID) VALUES  
(‘ABC12323’, 108);  
INSERT INTO Taxi (VIN, TStaffID) VALUES  
(‘DEF45116’, 109);  
INSERT INTO Taxi (VIN, TStaffID) VALUES  
(‘GHI78569’, 110);  
INSERT INTO Taxi (VIN, TStaffID) VALUES  
(‘JKL01222’, 110);  
INSERT INTO Taxi (VIN, TStaffID) VALUES  
(‘MNO34335’, 111);  
INSERT INTO Taxi (VIN, TStaffID) VALUES  
(‘PQR67788’, 112);
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INSERT INTO Taxi (VIN, TStaffID) VALUES
('STU90231', 113);
INSERT INTO Taxi (VIN, TStaffID) VALUES
('STU90134', 114);
INSERT INTO Taxi (VIN, TStaffID) VALUES
('STU90321', 111);
INSERT INTO Taxi (VIN, TStaffID) VALUES
('STU90541', 110);

INSERT INTO PrivateClient (PClientNum, FName, LName, PhoneNum) VALUES
(201, 'Alice', 'Jones', '604-123-4567');
INSERT INTO PrivateClient (PClientNum, FName, LName, PhoneNum) VALUES
(202, 'Bob', 'Smith', '778-234-5678');
INSERT INTO PrivateClient (PClientNum, FName, LName, PhoneNum) VALUES
(203, 'Charlie', 'Brown', '604-345-6789');
INSERT INTO PrivateClient (PClientNum, FName, LName, PhoneNum) VALUES
(204, 'David', 'Lee', '778-456-7890');
INSERT INTO PrivateClient (PClientNum, FName, LName, PhoneNum) VALUES
(205, 'Emily', 'Davis', '604-567-8901');
INSERT INTO PrivateClient (PClientNum, FName, LName, PhoneNum) VALUES
(206, 'Frank', 'Johnson', '778-678-9012');
INSERT INTO PrivateClient (PClientNum, FName, LName, PhoneNum) VALUES
(207, 'Grace', 'Taylor', '604-789-0123');

INSERT INTO BusinessClient (BClientNum, FName, LName, PhoneNum) VALUES
(301, 'John', 'Paul', '604-133-4567');
INSERT INTO BusinessClient (BClientNum, FName, LName, PhoneNum) VALUES
(302, 'Jane', 'Irving', '778-204-5678');
INSERT INTO BusinessClient (BClientNum, FName, LName, PhoneNum) VALUES
(303, 'Bob', 'Russell', '604-315-6789');
INSERT INTO BusinessClient (BClientNum, FName, LName, PhoneNum) VALUES
(304, 'Sue', 'Leet', '778-426-7890');
INSERT INTO BusinessClient (BClientNum, FName, LName, PhoneNum) VALUES
(305, 'Tom', 'Davison', '604-557-8901');
INSERT INTO BusinessClient (BClientNum, FName, LName, PhoneNum) VALUES
(306, 'Lisa', 'Mahomes', '778-378-9012');
INSERT INTO BusinessClient (BClientNum, FName, LName, PhoneNum) VALUES
(307, 'Mike', 'Henry', '604-759-0123');

INSERT INTO Contract (ContractNum, BClientNum, NumofJobs, OfficeNum) VALUES
(401, 301, 10, 1);
INSERT INTO Contract (ContractNum, BClientNum, NumofJobs, OfficeNum) VALUES
(402, 302, 8, 2);
INSERT INTO Contract (ContractNum, BClientNum, NumofJobs, OfficeNum) VALUES
(403, 303, 12, 3);
INSERT INTO Contract (ContractNum, BClientNum, NumofJobs, OfficeNum) VALUES
(404, 305, 6, 4);
INSERT INTO Contract (ContractNum, BClientNum, NumofJobs, OfficeNum) VALUES
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(405, 307, 9, 5);
INSERT INTO Contract (ContractNum, BClientNum, NumofJobs, OfficeNum) VALUES
(406, 304, 11, 6);
INSERT INTO Contract (ContractNum, BClientNum, NumofJobs, OfficeNum) VALUES
(407, 306, 7, 7);

INSERT INTO Job (JobID, ContractNum, PClientNum, TStaffID, VIN, PUDateTime,
PUAddress, DOAddress, Mileage, Fee) VALUES
(501, 401, 201, 108, 'ABC12323', TO_DATE('2000-09-06 12:00:00', 'YYYY-MM-DD
HH24:MI:SS'), '123 Park St', '416 Elm St', 10, 20);
INSERT INTO Job (JobID, ContractNum, PClientNum, TStaffID, VIN, PUDateTime,
PUAddress, DOAddress, Mileage, Fee) VALUES
(502, 402, 202, 109, 'DEF45116', TO_DATE('2023-04-07 14:00:00', 'YYYY-MM-DD
HH24:MI:SS'), '456 Broad St', '789 Oak St', 15, 25);
INSERT INTO Job (JobID, ContractNum, PClientNum, TStaffID, VIN, PUDateTime,
PUAddress, DOAddress, Mileage, Fee) VALUES
(503, 403, 203, 110, 'GHI78569', TO_DATE('2000-09-08 16:00:00', 'YYYY-MM-DD
HH24:MI:SS'), '739 Lake St', '216 Maple St', 20, 30);
INSERT INTO Job (JobID, ContractNum, PClientNum, TStaffID, VIN, PUDateTime,
PUAddress, DOAddress, Mileage, Fee) VALUES
(504, 404, 204, 112, 'JKL01222', TO_DATE('2020-04-09 18:00:00', 'YYYY-MM-DD
HH24:MI:SS'), '296 Maple St', '349 Pole St', 25, 35);
INSERT INTO Job (JobID, ContractNum, PClientNum, TStaffID, VIN, PUDateTime,
PUAddress, DOAddress, Mileage, Fee) VALUES
(505, 405, 205, 111, 'MNO34335', TO_DATE('2003-04-10 20:00:00', 'YYYY-MM-DD
HH24:MI:SS'), '319 Hort St', '892 Peal St', 30, 40);
INSERT INTO Job (JobID, ContractNum, PClientNum, TStaffID, VIN, PUDateTime,
PUAddress, DOAddress, Mileage, Fee) VALUES
(506, 406, 206, 113, 'STU90231', TO_DATE('2013-04-11 22:00:00', 'YYYY-MM-DD
HH24:MI:SS'), '842 Walnut St', '158 Mitch Ave', 35, 45);
INSERT INTO Job (JobID, ContractNum, PClientNum, TStaffID, VIN, PUDateTime,
PUAddress, DOAddress, Mileage, Fee) VALUES
(507, 407, 207, 114, 'STU90134', TO_DATE('2010-04-12 00:00:00', 'YYYY-MM-DD
HH24:MI:SS'), '1358 Cedar Ave', '246 Maple St', 40, 51);