INTERSTATE AIRLINES
Project Part-2

Log Table 1:

Date	Time Spent	Activities Completed
10/10/19	60 Minutes(4:15PM-5:15PM)	Created a pseudo DBDL
11/10/19	90 Minutes(9:00PM- 10:30PM)	Made changes to the pseudo DBDL and made sure there were no redundancies
10/17/19	40 Minutes(9:20PM-10:00PM)	Refined the DBDL according to the required specifications, Drew the Database Diagram

Log Table 2:

Date	Time Spent	Activities Completed
11/3/19	60 Minutes(3:15PM-4:15PM)	Made changes to the existing document and added the required entities.
11/22/19	40 Minutes(8:00PM- 8:40PM)	Changed the Database Diagram accordingly.
10/29/19	135 Minutes(3:30PM-5:45PM)	Ran the final query and worked on the documentation.

Entities and Relationships:

PlaneType, Aircraft, Pilot, Scheduled_Flights, City, Passengers, Certified, Reservations

- One Airline can have many Aircrafts- One to Many
- One Aircraft can have several pilots- One to Many
- Each Aircraft has a fixed Origin and Destination- One to One
- Each Aircraft has a unique number- One to One
- Each flight has several Passengers- One to Many
- Each Pilot operates one Aircraft at a time- One to One
- Each Passenger can book several tickets- One to Many
- Each Passenger has a unique Passenger ID- One to One

Overall Relationship: Many to Many

Database Design Language:

-Plane_type(Code(C3), Description(C30), Capacity(D3), Flight_range(D4))

-Aircraft(Serial_no(C12), Arrival_time, Departure_time, Origin_city(C3), Destination_city(C3),Type, ManufactureYear, Code(C3), Lastserviced(DATE), Nextserviced(DATE))
Foreign Key: Type -> Plane_type(Code)
Origin_city -> City(Code)
Destination_city -> City(Code)

-Pilot(Pilot_number(C5), Pilot_name(C30), DOB(DATE), Cellphone)
Foreign Key: PlaneType -> PlaneType(Code)

-Scheduled_Flights(Aircraft_number, Aircraft_date, Pilot_number, Flight_ID)
Composite Key: Date, Serial_no
Foreign Key: Serial_no -> Aircraft(Serial_no)
Pilot -> Pilot(Pilot_number)
Passengers -> Passengers(Passenger_id)

-City(City_code(C3), City_name(C30), Airport_Description(C30), State(C2))

-Passengers(PassID, PassFirstName, PassLastName, PassAddr**,** PassCity, PassState, PassZip, PassPhone, PassEmail, JourneyDate, Aircraft_no)
Foreign Key: Aircraft_no -> Aircraft(Serial_no)

-Certified(Pilot_number, Code, CertDate)
Foreign Key: Pilot_number -> Pilot(Pilot_number)
Code -> Plane_type(Code)

-Reservations(Reservation_number, Flight_ID, PASSENGER_ID)

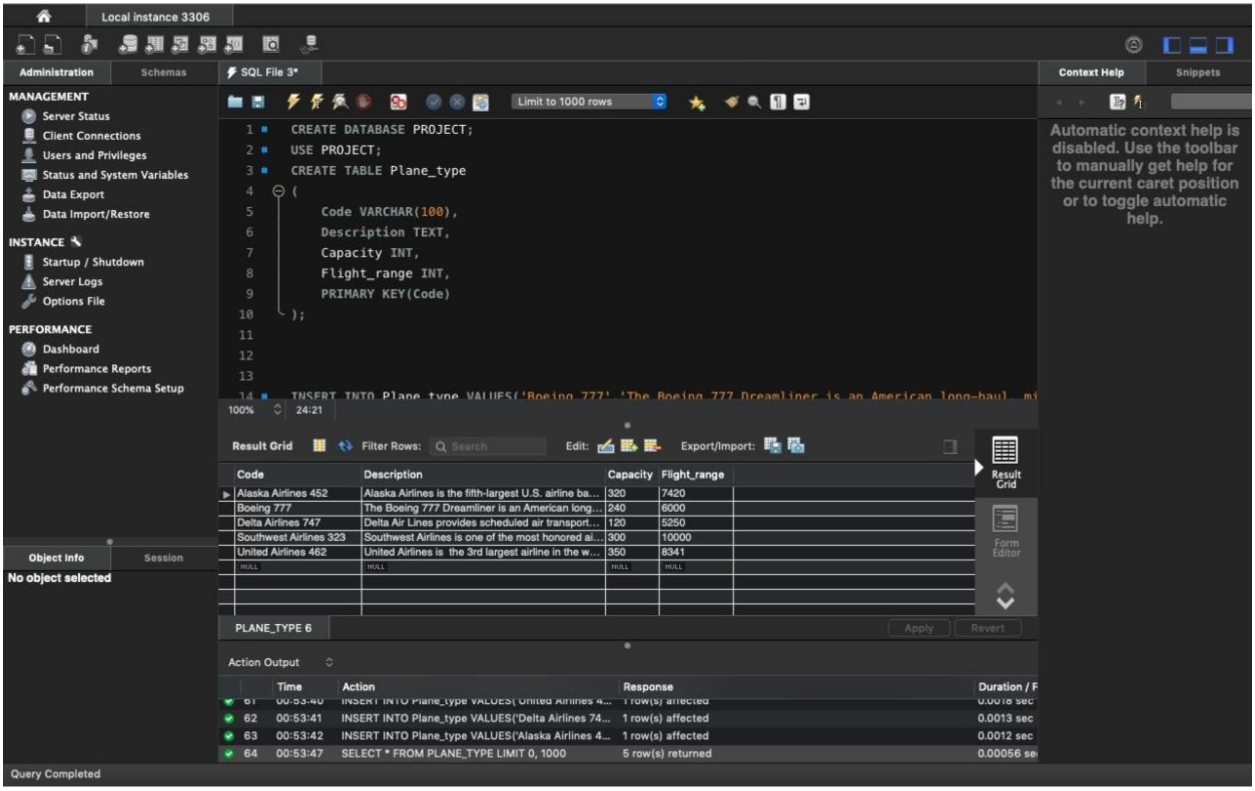
Code:

```
CREATE DATABASE PROJECT;
USE PROJECT;
=====================
CREATE TABLE Plane_type
(
   Code VARCHAR(100),
   Description TEXT,
   Capacity INT,
   Flight_range INT,
   PRIMARY KEY(Code)
);

INSERT INTO Plane_type VALUES('Boeing 777','The Boeing 777 Dreamliner is an American long-haul, mid-size wide-body, twin-engine jet airliner manufactured by Boeing Commercial Airplanes', 240, 6000);
INSERT INTO Plane_type VALUES('Southwest Airlines 323', 'Southwest Airlines is one of the most honored airlines in the world primarily known for its triple bottom line approach', 300, 10000);
INSERT INTO Plane_type VALUES('United Airlines 462','United Airlines is  the 3rd largest airline in the world', 350, 8341);
INSERT INTO Plane_type VALUES('Delta Airlines 747','Delta Air Lines provides scheduled air transportation for passengers and cargo', 120,5250);
INSERT INTO Plane_type VALUES('Alaska Airlines 452','Alaska Airlines is the fifth-largest U.S. airline based on passengers traffic', 320,7420 );



SELECT * FROM PLANE_TYPE;
```



```
CREATE DATABASE PROJECT;
USE PROJECT;
CREATE TABLE Plane_type
(
    Code VARCHAR(100),
    Description TEXT,
    Capacity INT,
    Flight_range INT,
    PRIMARY KEY(Code)
);



INSERT INTO Plane_type VALUES('Boeing 777','The Boeing 777 Dreamliner is an American long-haul, mi
```

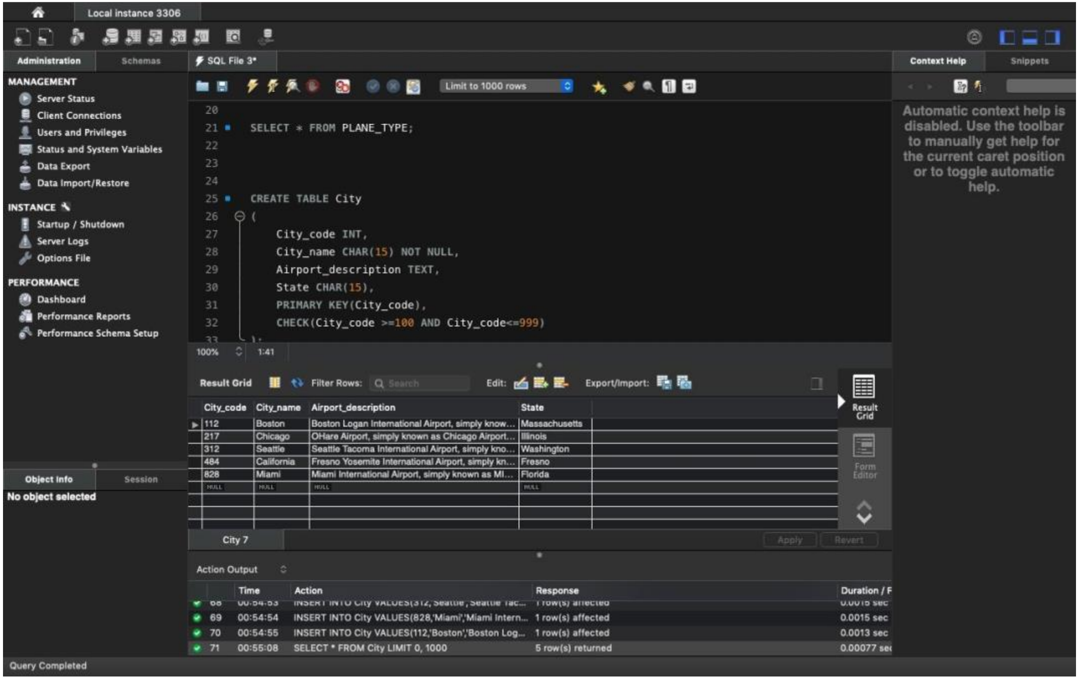
Code	Description	Capacity	Flight_range
Alaska Airlines 452	Alaska Airlines is the fifth-largest U.S. airline ba...	320	7420
Boeing 777	The Boeing 777 Dreamliner is an American long...	240	6000
Delta Airlines 747	Delta Air Lines provides scheduled air transport...	120	5250
Southwest Airlines 323	Southwest Airlines is one of the most honored ai...	300	10000
United Airlines 462	United Airlines is the 3rd largest airline in the w...	350	8341
NULL	NULL	NULL	NULL

	Time	Action	Response	Duration / F
61	00:53:40	INSERT INTO Plane_type VALUES('United Airlines 4...	1 row(s) affected	0.0018 sec
62	00:53:41	INSERT INTO Plane_type VALUES('Delta Airlines 74...	1 row(s) affected	0.0013 sec
63	00:53:42	INSERT INTO Plane_type VALUES('Alaska Airlines 4...	1 row(s) affected	0.0012 sec
64	00:53:47	SELECT * FROM PLANE_TYPE LIMIT 0, 1000	5 row(s) returned	0.00056 se

```
================
CREATE TABLE City
(
   City_code INT,
   City_name CHAR(15) NOT NULL,
   Airport_description TEXT,
   State CHAR(15),
   PRIMARY KEY(City_code),
   CHECK(City_code >=100 AND City_code<=999)
);

INSERT INTO City VALUES(217,'Chicago','OHare Airport, simply known as Chicago Airport, is an airport located in Chicago','Illinois');
INSERT INTO City VALUES(484,'California','Fresno Yosemite International Airport, simply known as Fresno Airport, is an airport located in California','Fresno');
INSERT INTO City VALUES(312,'Seattle','Seattle Tacoma International Airport, simply known as Sea Tac Airport, is an airport located in Seattle', 'Washington');
INSERT INTO City VALUES(828,'Miami','Miami International Airport, simply known as MIA, is an airport located in Miami','Florida');
INSERT INTO City VALUES(112,'Boston','Boston Logan International Airport, simply known as Logan International Airport, is an airport located in Boston', 'Massachusetts');

SELECT * FROM City;
```



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```
SELECT * FROM PLANE_TYPE;



CREATE TABLE City
(
    City_code INT,
    City_name CHAR(15) NOT NULL,
    Airport_description TEXT,
    State CHAR(15),
    PRIMARY KEY(City_code),
    CHECK(City_code >=100 AND City_code<=999)
);
```

City_code	City_name	Airport_description	State
112	Boston	Boston Logan International Airport, simply know...	Massachusetts
217	Chicago	OHare Airport, simply known as Chicago Airport...	Illinois
312	Seattle	Seattle Tacoma International Airport, simply kno...	Washington
484	California	Fresno Yosemite International Airport, simply kn...	Fresno
828	Miami	Miami International Airport, simply known as MI...	Florida
NULL	NULL	NULL	NULL

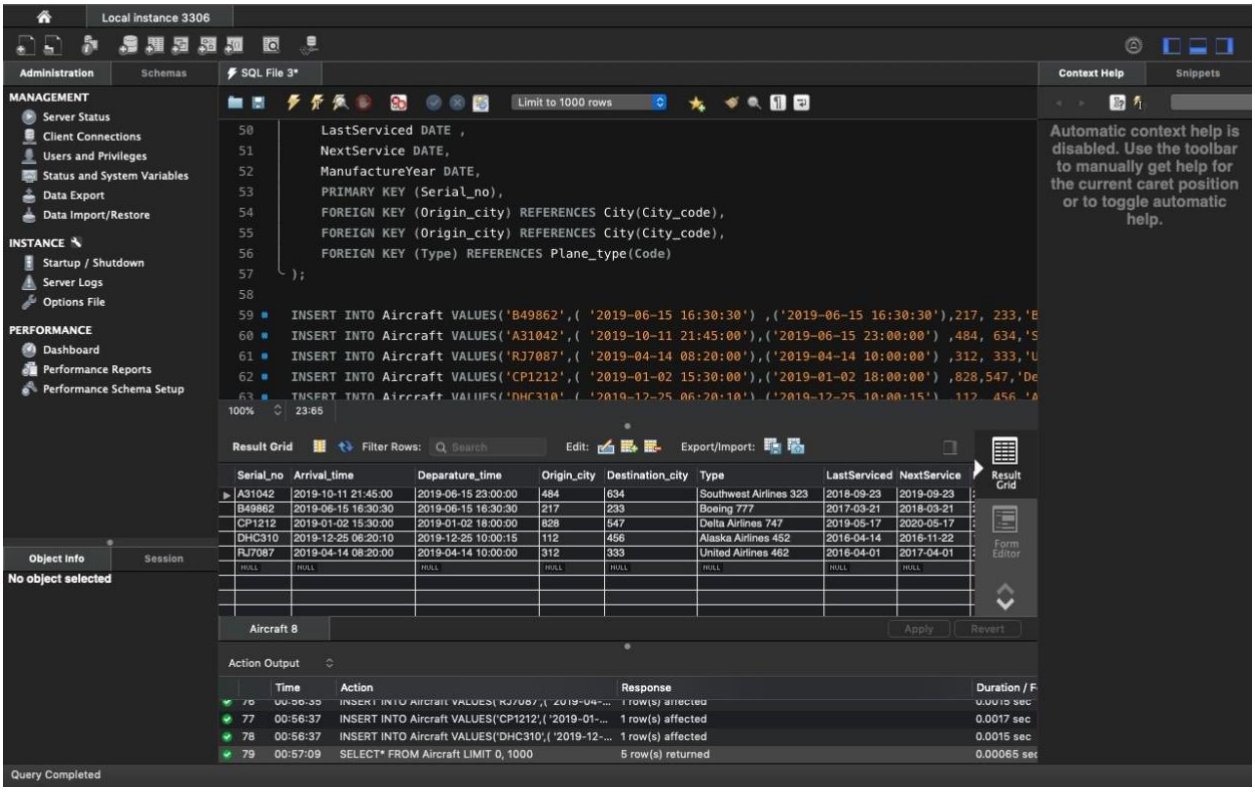
```
    Time      Action                                             Response             Duration / F
68  00:54:53  INSERT INTO City VALUES(312,'Seattle','Seattle Tac...  1 row(s) affected    0.0015 sec
69  00:54:54  INSERT INTO City VALUES(828,'Miami','Miami Intern...   1 row(s) affected    0.0015 sec
70  00:54:55  INSERT INTO City VALUES(112,'Boston','Boston Log...    1 row(s) affected    0.0013 sec
71  00:55:08  SELECT * FROM City LIMIT 0, 1000                   5 row(s) returned    0.00077 sec
```

Query Completed

```
====================
 CREATE TABLE Aircraft(
    Serial_no VARCHAR(100),
    Arrival_time TIMESTAMP,
    Deparature_time TIMESTAMP,
    Origin_city INT,
    Destination_city INT,
    Type VARCHAR(100),
    LastServiced DATE ,
    NextService DATE,
    ManufactureYear DATE,
    PRIMARY KEY (Serial_no),
    FOREIGN KEY (Origin_city) REFERENCES City(City_code),
    FOREIGN KEY (Origin_city) REFERENCES City(City_code),
    FOREIGN KEY (Type) REFERENCES Plane_type(Code),
    CHECK(NextService>LastServiced));

INSERT INTO Aircraft VALUES('B49862',( '2019-06-15 16:30:30') ,('2019-06-15
16:30:30'),217, 233,'Boeing 777'
,DATE('2017-03-21'),DATE('2018-03-21'),DATE('2000-08-11'));
INSERT INTO Aircraft VALUES('A31042',( '2019-10-11 21:45:00'),('2019-06-15 23:00:00')
,484, 634,'Southwest Airlines 323'
,DATE('2018-09-23'),DATE('2019-09-23'),DATE('2007-07-17'));
INSERT INTO Aircraft VALUES('RJ7087',( '2019-04-14 08:20:00'),('2019-04-14 10:00:00') ,312,
333,'United Airlines 462'
,DATE('2016-04-01'),DATE('2017-04-01'),DATE('2001-11-03'));
INSERT INTO Aircraft VALUES('CP1212',( '2019-01-02 15:30:00'),('2019-01-02 18:00:00')
,828,547,'Delta Airlines 747'  ,DATE('2019-05-17'),DATE('2020-05-17'),DATE('2015-06-16'));
INSERT INTO Aircraft VALUES('DHC310',( '2019-12-25 06:20:10'),('2019-12-25 10:00:15') ,112,
456,'Alaska Airlines 452'
,DATE('2016-04-14'),DATE('2016-11-22'),DATE('1989-11-24'));

SELECT* FROM Aircraft;
SELECT extract(HOUR FROM Deparature_time) FROM Aircraft;
```



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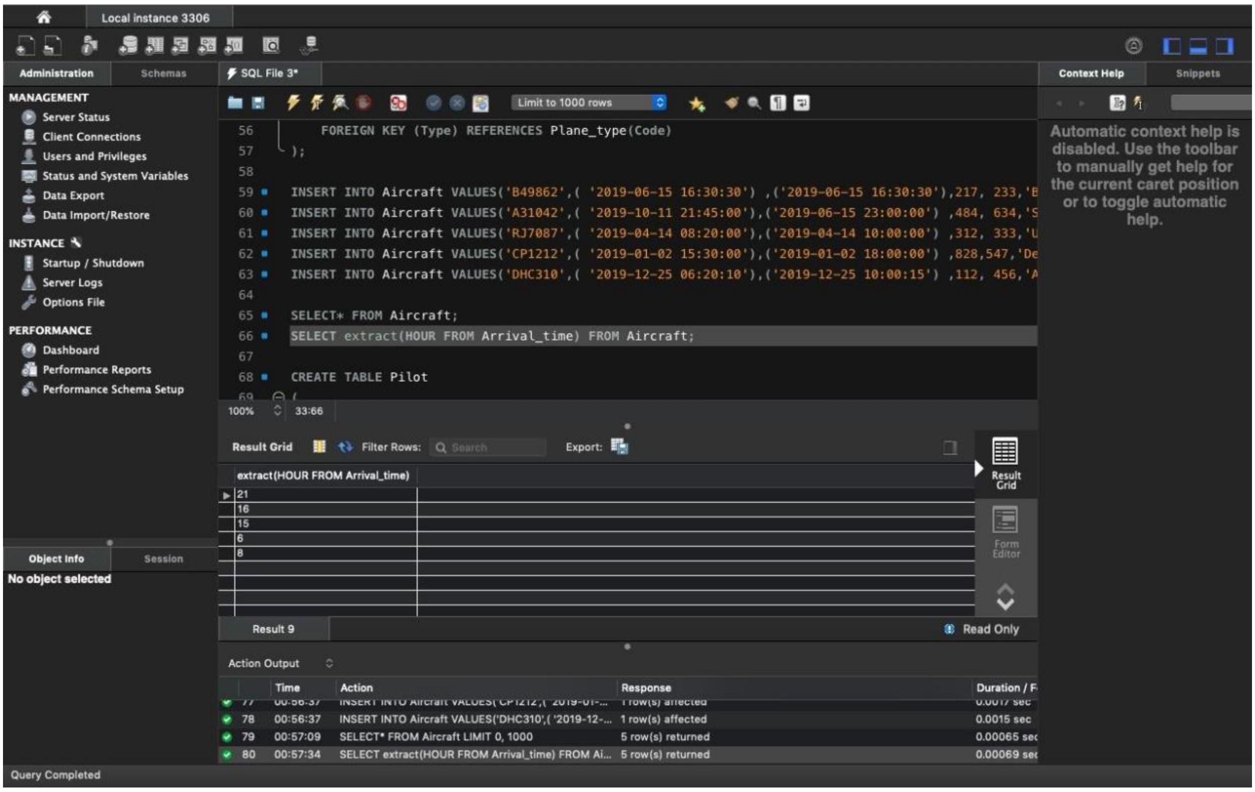
```
    LastServiced DATE ,
    NextService DATE,
    ManufactureYear DATE,
    PRIMARY KEY (Serial_no),
    FOREIGN KEY (Origin_city) REFERENCES City(City_code),
    FOREIGN KEY (Origin_city) REFERENCES City(City_code),
    FOREIGN KEY (Type) REFERENCES Plane_type(Code)
);

INSERT INTO Aircraft VALUES('B49862',( '2019-06-15 16:30:30') ,('2019-06-15 16:30:30'),217, 233,'B
INSERT INTO Aircraft VALUES('A31042',( '2019-10-11 21:45:00'),('2019-06-15 23:00:00') ,484, 634,'S
INSERT INTO Aircraft VALUES('RJ7087',( '2019-04-14 08:20:00'),('2019-04-14 10:00:00') ,312, 333,'U
INSERT INTO Aircraft VALUES('CP1212',( '2019-01-02 15:30:00'),('2019-01-02 18:00:00') ,828,547,'De
INSERT INTO Aircraft VALUES('DHC310',( '2019-12-25 06:20:10'),('2019-12-25 10:00:15') ,112, 456,'A
```

Serial_no	Arrival_time	Deparature_time	Origin_city	Destination_city	Type	LastServiced	NextService
A31042	2019-10-11 21:45:00	2019-06-15 23:00:00	484	634	Southwest Airlines 323	2018-09-23	2019-09-23
B49862	2019-06-15 16:30:30	2019-06-15 16:30:30	217	233	Boeing 777	2017-03-21	2018-03-21
CP1212	2019-01-02 15:30:00	2019-01-02 18:00:00	828	547	Delta Airlines 747	2019-05-17	2020-05-17
DHC310	2019-12-25 06:20:10	2019-12-25 10:00:15	112	456	Alaska Airlines 452	2016-04-14	2016-11-22
RJ7087	2019-04-14 08:20:00	2019-04-14 10:00:00	312	333	United Airlines 462	2016-04-01	2017-04-01
NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL

```
    Time      Action                                                Response             Duration / F
76  00:56:35  INSERT INTO Aircraft VALUES('RJ7087',( '2019-04-...   1 row(s) affected    0.0015 sec
77  00:56:37  INSERT INTO Aircraft VALUES('CP1212',( '2019-01-...   1 row(s) affected    0.0017 sec
78  00:56:37  INSERT INTO Aircraft VALUES('DHC310',( '2019-12-...   1 row(s) affected    0.0015 sec
79  00:57:09  SELECT* FROM Aircraft LIMIT 0, 1000                   5 row(s) returned    0.00065 sec
```



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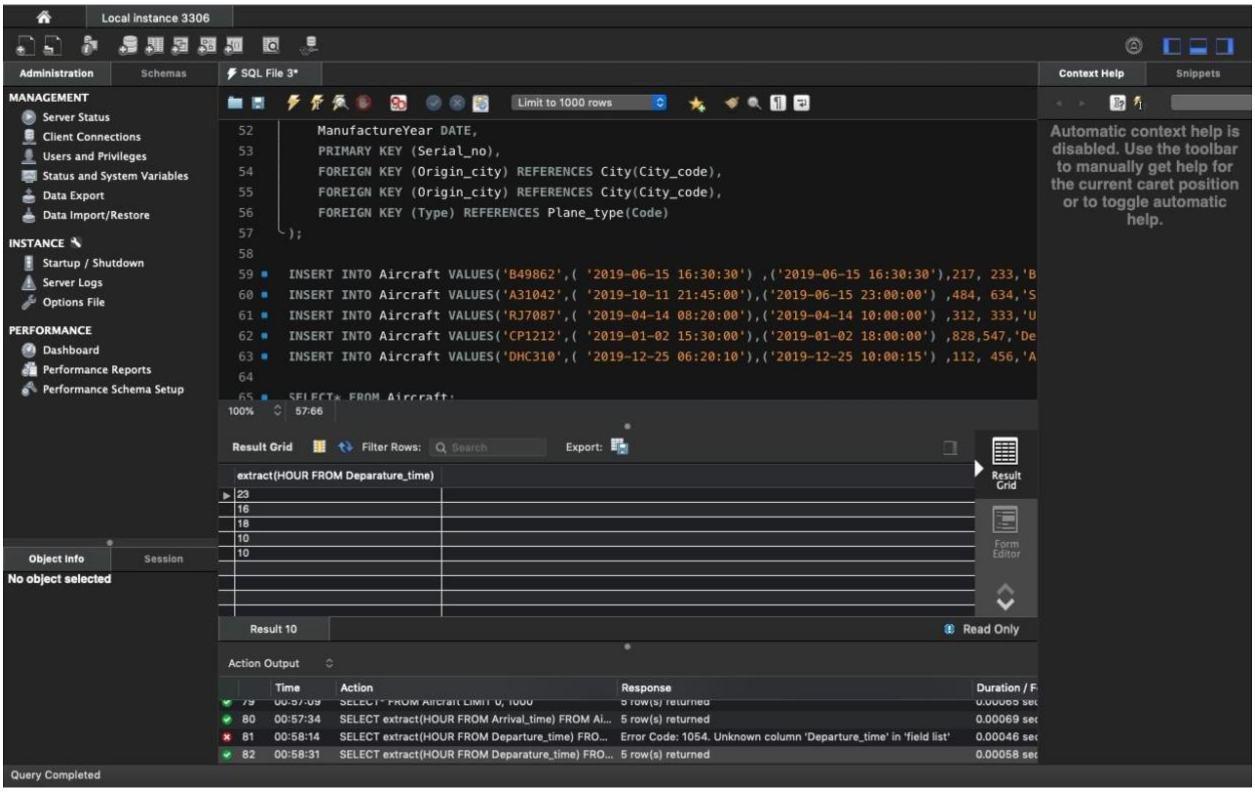
```
    FOREIGN KEY (Type) REFERENCES Plane_type(Code)
);

INSERT INTO Aircraft VALUES('B49862',( '2019-06-15 16:30:30') ,('2019-06-15 16:30:30'),217, 233,'B
INSERT INTO Aircraft VALUES('A31042',( '2019-10-11 21:45:00'),('2019-06-15 23:00:00') ,484, 634,'S
INSERT INTO Aircraft VALUES('RJ7087',( '2019-04-14 08:20:00'),('2019-04-14 10:00:00') ,312, 333,'U
INSERT INTO Aircraft VALUES('CP1212',( '2019-01-02 15:30:00'),('2019-01-02 18:00:00') ,828,547,'De
INSERT INTO Aircraft VALUES('DHC310',( '2019-12-25 06:20:10'),('2019-12-25 10:00:15') ,112, 456,'A

SELECT* FROM Aircraft;
SELECT extract(HOUR FROM Arrival_time) FROM Aircraft;

CREATE TABLE Pilot
(
```

extract(HOUR FROM Arrival_time)
21
16
15
6
8

```
    Time      Action                                                Response             Duration / F
77  00:56:37  INSERT INTO Aircraft VALUES('CP1212',( '2019-01-...   1 row(s) affected    0.0017 sec
78  00:56:37  INSERT INTO Aircraft VALUES('DHC310',( '2019-12-...   1 row(s) affected    0.0015 sec
79  00:57:09  SELECT* FROM Aircraft LIMIT 0, 1000                   5 row(s) returned    0.00065 sec
80  00:57:34  SELECT extract(HOUR FROM Arrival_time) FROM Ai...     5 row(s) returned    0.00069 sec
```



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```
    ManufactureYear DATE,
    PRIMARY KEY (Serial_no),
    FOREIGN KEY (Origin_city) REFERENCES City(City_code),
    FOREIGN KEY (Origin_city) REFERENCES City(City_code),
    FOREIGN KEY (Type) REFERENCES Plane_type(Code)
);

INSERT INTO Aircraft VALUES('B49862',( '2019-06-15 16:30:30') ,('2019-06-15 16:30:30'),217, 233,'B
INSERT INTO Aircraft VALUES('A31042',( '2019-10-11 21:45:00'),('2019-06-15 23:00:00') ,484, 634,'S
INSERT INTO Aircraft VALUES('RJ7087',( '2019-04-14 08:20:00'),('2019-04-14 10:00:00') ,312, 333,'U
INSERT INTO Aircraft VALUES('CP1212',( '2019-01-02 15:30:00'),('2019-01-02 18:00:00') ,828,547,'De
INSERT INTO Aircraft VALUES('DHC310',( '2019-12-25 06:20:10'),('2019-12-25 10:00:15') ,112, 456,'A

SELECT* FROM Aircraft;
```

extract(HOUR FROM Deparature_time)
23
16
18
10
10

```
   Time      Action                                            Response                                                        Duration / F
79 00:57:09  SELECT * FROM Aircraft LIMIT 0, 1000              5 row(s) returned                                               0.00065 sec
80 00:57:34  SELECT extract(HOUR FROM Arrival_time) FROM Ai...   5 row(s) returned                                               0.00069 sec
81 00:58:14  SELECT extract(HOUR FROM Departure_time) FRO...    Error Code: 1054. Unknown column 'Departure_time' in 'field list'  0.00046 sec
82 00:58:31  SELECT extract(HOUR FROM Deparature_time) FRO...   5 row(s) returned                                               0.00058 sec
```

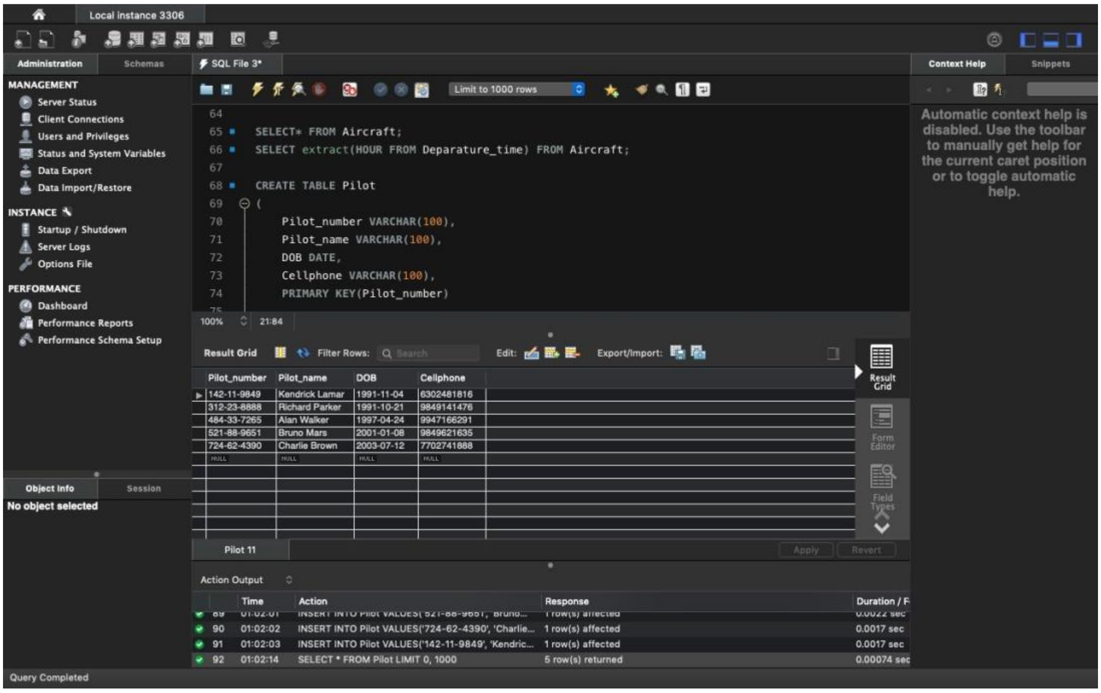
================

```
CREATE TABLE Pilot
(
    Pilot_number VARCHAR(100),
    Pilot_name VARCHAR(100),
    DOB DATE,
    Cellphone VARCHAR(100),
    PRIMARY KEY(Pilot_number)

);

INSERT INTO Pilot VALUES('312-23-8888', 'Richard Parker', DATE('1991-10-21'), '9849141476');
INSERT INTO Pilot VALUES('484-33-7265', 'Alan Walker', DATE('1997-04-24'), '9947166291');
INSERT INTO Pilot VALUES('521-88-9651', 'Bruno Mars', DATE('2001-01-08'), '9849621635');
INSERT INTO Pilot VALUES('724-62-4390', 'Charlie Brown', DATE('2003-07-12'), '7702741888');
INSERT INTO Pilot VALUES('142-11-9849', 'Kendrick Lamar', DATE('1991-11-04'), '6302481816');

SELECT * FROM Pilot;
```



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```
SELECT* FROM Aircraft;
SELECT extract(HOUR FROM Deparature_time) FROM Aircraft;

CREATE TABLE Pilot
(
    Pilot_number VARCHAR(100),
    Pilot_name VARCHAR(100),
    DOB DATE,
    Cellphone VARCHAR(100),
    PRIMARY KEY(Pilot_number)
```

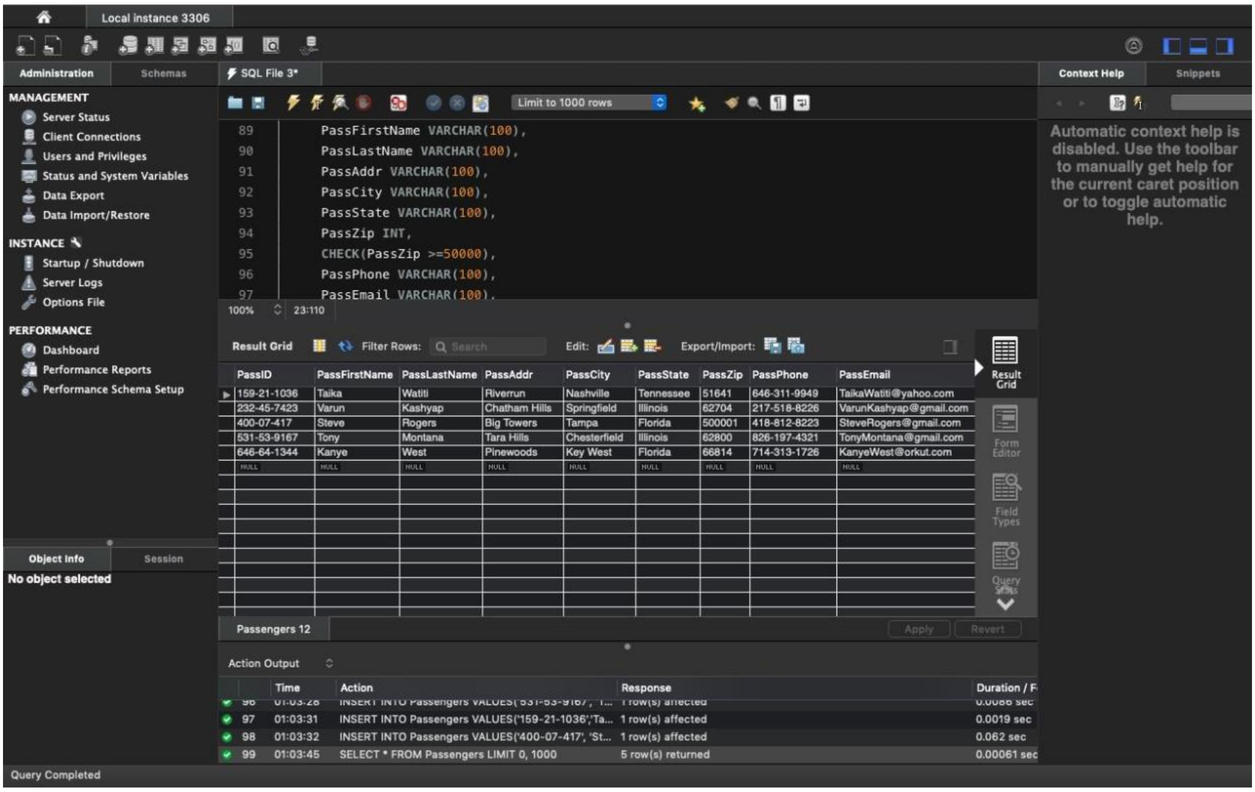
Pilot_number	Pilot_name	DOB	Cellphone
142-11-9849	Kendrick Lamar	1991-11-04	6302481816
312-23-8888	Richard Parker	1991-10-21	9849141476
484-33-7265	Alan Walker	1997-04-24	9947166291
521-88-9651	Bruno Mars	2001-01-08	9849621635
724-62-4390	Charlie Brown	2003-07-12	7702741888
NULL	NULL	NULL	NULL

```
     Time      Action                                              Response            Duration / F
89   01:02:01  INSERT INTO Pilot VALUES('521-88-9651', 'Bruno...   1 row(s) affected   0.0022 sec
90   01:02:02  INSERT INTO Pilot VALUES('724-62-4390', 'Charlie... 1 row(s) affected   0.0017 sec
91   01:02:03  INSERT INTO Pilot VALUES('142-11-9849', 'Kendric... 1 row(s) affected   0.0017 sec
92   01:02:14  SELECT * FROM Pilot LIMIT 0, 1000                   5 row(s) returned   0.00074 sec
```

```
====================
CREATE TABLE Passengers
(
    PassID VARCHAR(100),
    PassFirstName VARCHAR(100),
    PassLastName VARCHAR(100),
    PassAddr VARCHAR(100),
    PassCity VARCHAR(100),
    PassState VARCHAR(100),
    PassZip INT,
    CHECK(PassZip >=50000),
    PassPhone VARCHAR(100),
    PassEmail VARCHAR(100),
    JourneyDate DATE,
    Aircraft_no VARCHAR(100),
    PRIMARY KEY (PassID),
    FOREIGN KEY (Aircraft_no) REFERENCES Aircraft(Serial_no)
);

INSERT INTO Passengers VALUES('232-45-7423', 'Varun','Kashyap', 'Chatham Hills',
'Springfield', 'Illinois', 62704, '217-518-8226','VarunKashyap@gmail.com',DATE('2019-12-25'),
'B49862');
INSERT INTO Passengers VALUES('646-64-1344', 'Kanye','West', 'Pinewoods', 'Key West',
'Florida', 66814, '714-313-1726','KanyeWest@orkut.com',DATE('2019-02-11'), 'A31042');
INSERT INTO Passengers VALUES('531-53-9167', 'Tony','Montana', 'Tara Hills', 'Chesterfield',
'Illinois', 62800, '826-197-4321','TonyMontana@gmail.com', DATE('2019-08-19'), 'RJ7087');
INSERT INTO Passengers VALUES('159-21-1036','Taika','Watiti', 'Riverrun', 'Nashville',
'Tennessee', 51641,'646-311-9949', 'TaikaWatiti@yahoo.com', DATE('2016-09-01'), 'CP1212');
INSERT INTO Passengers VALUES('400-07-417', 'Steve','Rogers','Big Towers', 'Tampa',
'Florida', 500001,'418-812-8223','SteveRogers@gmail.com', DATE('2019-07-29'), 'DHC310');

SELECT * FROM Passengers;
```



Automatic context help is disabled. Use the toolbar to manually get help for the current caret position or to toggle automatic help.

```
    PassFirstName VARCHAR(100),
    PassLastName VARCHAR(100),
    PassAddr VARCHAR(100),
    PassCity VARCHAR(100),
    PassState VARCHAR(100),
    PassZip INT,
    CHECK(PassZip >=50000),
    PassPhone VARCHAR(100),
    PassEmail VARCHAR(100),
```

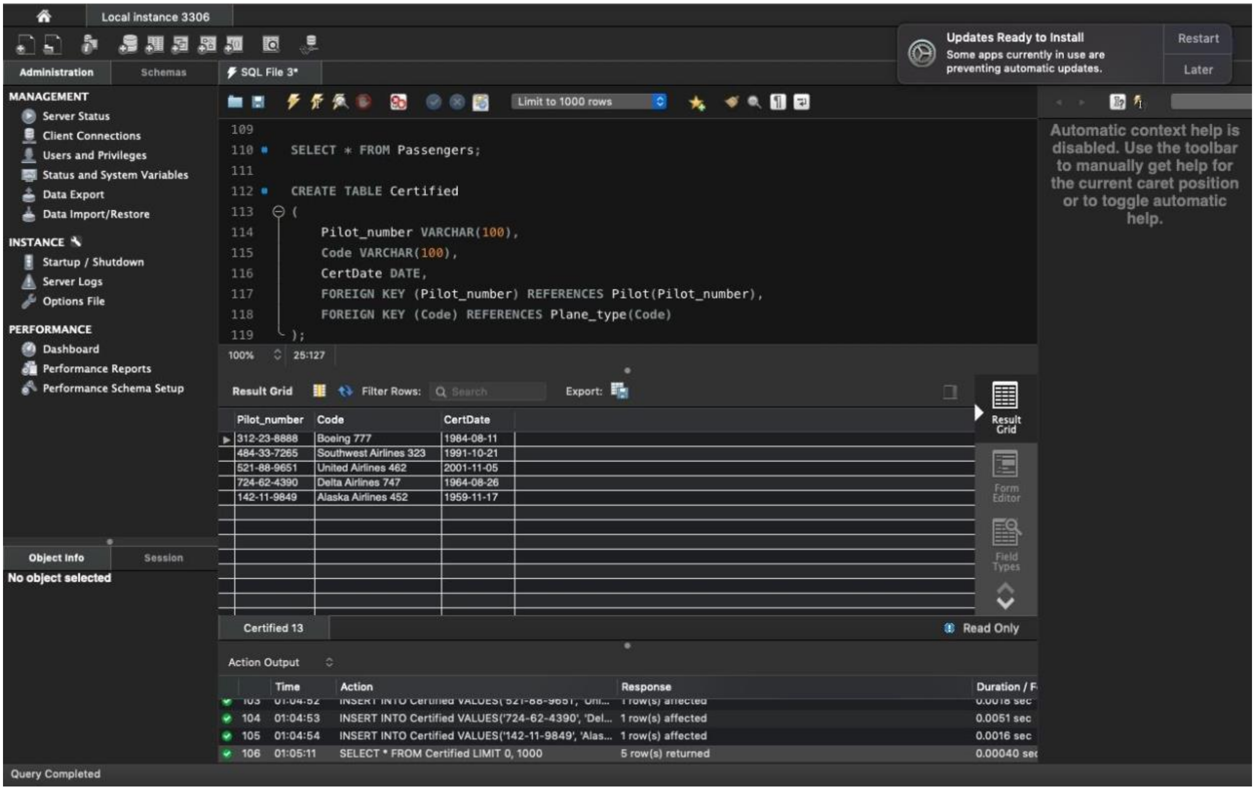
PassID	PassFirstName	PassLastName	PassAddr	PassCity	PassState	PassZip	PassPhone	PassEmail
159-21-1036	Taika	Watiti	Riverrun	Nashville	Tennessee	51641	646-311-9949	TaikaWatiti@yahoo.com
232-45-7423	Varun	Kashyap	Chatham Hills	Springfield	Illinois	62704	217-518-8226	VarunKashyap@gmail.com
400-07-417	Steve	Rogers	Big Towers	Tampa	Florida	500001	418-812-8223	SteveRogers@gmail.com
531-53-9167	Tony	Montana	Tara Hills	Chesterfield	Illinois	62800	826-197-4321	TonyMontana@gmail.com
646-64-1344	Kanye	West	Pinewoods	Key West	Florida	66814	714-313-1726	KanyeWest@orkut.com
NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL

		Time	Action	Response	Duration / F
✓	96	01:03:28	INSERT INTO Passengers VALUES('531-53-9167', 'T...	1 row(s) affected	0.0086 sec
✓	97	01:03:31	INSERT INTO Passengers VALUES('159-21-1036','Ta...	1 row(s) affected	0.0019 sec
✓	98	01:03:32	INSERT INTO Passengers VALUES('400-07-417', 'St...	1 row(s) affected	0.062 sec
✓	99	01:03:45	SELECT * FROM Passengers LIMIT 0, 1000	5 row(s) returned	0.00061 sec

```
===================
CREATE TABLE Certified
(
   Pilot_number VARCHAR(100),
   Code VARCHAR(100),
   CertDate DATE,
   FOREIGN KEY (Pilot_number) REFERENCES Pilot(Pilot_number),
   FOREIGN KEY (Code) REFERENCES Plane_type(Code)
);

INSERT INTO Certified VALUES('312-23-8888', 'Boeing 777', DATE('1984-08-11'));
INSERT INTO Certified VALUES('484-33-7265', 'Southwest Airlines 323',
DATE('1991-10-21'));
INSERT INTO Certified VALUES('521-88-9651', 'United Airlines 462', DATE('2001-11-05'));
INSERT INTO Certified VALUES('724-62-4390', 'Delta Airlines 747', DATE('1964-08-26'));
INSERT INTO Certified VALUES('142-11-9849', 'Alaska Airlines 452', DATE('1959-11-17'));

SELECT * FROM Certified;
```



```
SELECT * FROM Passengers;

CREATE TABLE Certified
(
    Pilot_number VARCHAR(100),
    Code VARCHAR(100),
    CertDate DATE,
    FOREIGN KEY (Pilot_number) REFERENCES Pilot(Pilot_number),
    FOREIGN KEY (Code) REFERENCES Plane_type(Code)
);
```

Pilot_number	Code	CertDate
312-23-8888	Boeing 777	1984-08-11
484-33-7265	Southwest Airlines 323	1991-10-21
521-88-9651	United Airlines 462	2001-11-05
724-62-4390	Delta Airlines 747	1964-08-26
142-11-9849	Alaska Airlines 452	1959-11-17

```
     Time      Action                                              Response            Duration / F
103  01:04:52  INSERT INTO Certified VALUES('521-88-9651', 'Uni...  1 row(s) affected   0.0018 sec
104  01:04:53  INSERT INTO Certified VALUES('724-62-4390', 'Del...  1 row(s) affected   0.0051 sec
105  01:04:54  INSERT INTO Certified VALUES('142-11-9849', 'Alas... 1 row(s) affected   0.0016 sec
106  01:05:11  SELECT * FROM Certified LIMIT 0, 1000               5 row(s) returned   0.00040 sec
```

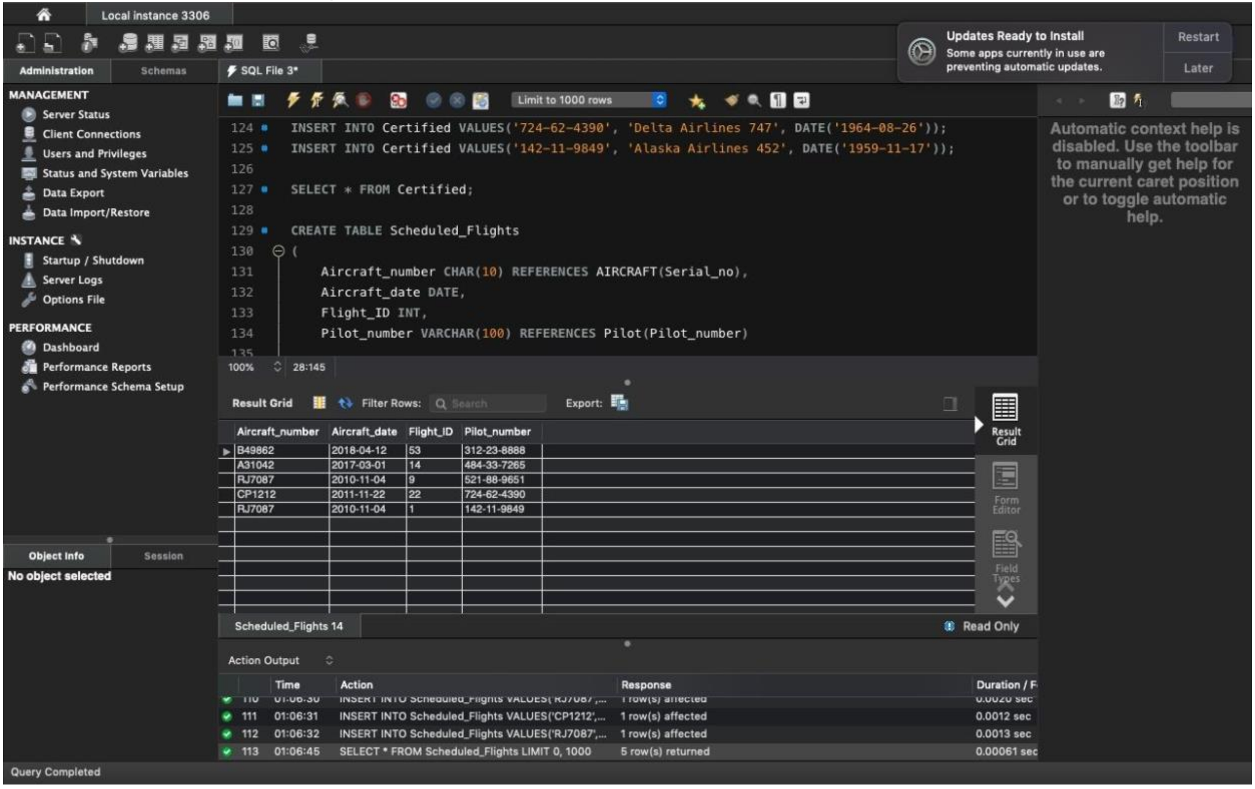
```
==========================
CREATE TABLE Scheduled_Flights
(
    Aircraft_number CHAR(10) REFERENCES AIRCRAFT(Serial_no),
    Aircraft_date DATE,
    Flight_ID INT,
    Pilot_number VARCHAR(100) REFERENCES Pilot(Pilot_number)



);

INSERT INTO Scheduled_Flights VALUES('B49862', DATE('2018-04-12'),53,'312-23-8888');
INSERT INTO Scheduled_Flights VALUES('A31042', DATE('2017-03-01'),14, '484-33-7265');
INSERT INTO Scheduled_Flights VALUES('RJ7087', DATE('2010-11-04'), 9,'521-88-9651');
INSERT INTO Scheduled_Flights VALUES('CP1212', DATE('2011-11-22'),22, '724-62-4390');
INSERT INTO Scheduled_Flights VALUES('RJ7087', DATE('2010-11-04'), 1,'142-11-9849');

SELECT * FROM Scheduled_Flights;
```



Updates Ready to Install
Some apps currently in use are preventing automatic updates.

Automatic context help is disabled. Use the toolbar to manually get help for the current caret position or to toggle automatic help.

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```
INSERT INTO Certified VALUES('724-62-4390', 'Delta Airlines 747', DATE('1964-08-26'));
INSERT INTO Certified VALUES('142-11-9849', 'Alaska Airlines 452', DATE('1959-11-17'));

SELECT * FROM Certified;

CREATE TABLE Scheduled_Flights
(
    Aircraft_number CHAR(10) REFERENCES AIRCRAFT(Serial_no),
    Aircraft_date DATE,
    Flight_ID INT,
    Pilot_number VARCHAR(100) REFERENCES Pilot(Pilot_number)
```

Aircraft_number	Aircraft_date	Flight_ID	Pilot_number
B49862	2018-04-12	53	312-23-8888
A31042	2017-03-01	14	484-33-7265
RJ7087	2010-11-04	9	521-88-9651
CP1212	2011-11-22	22	724-62-4390
RJ7087	2010-11-04	1	142-11-9849

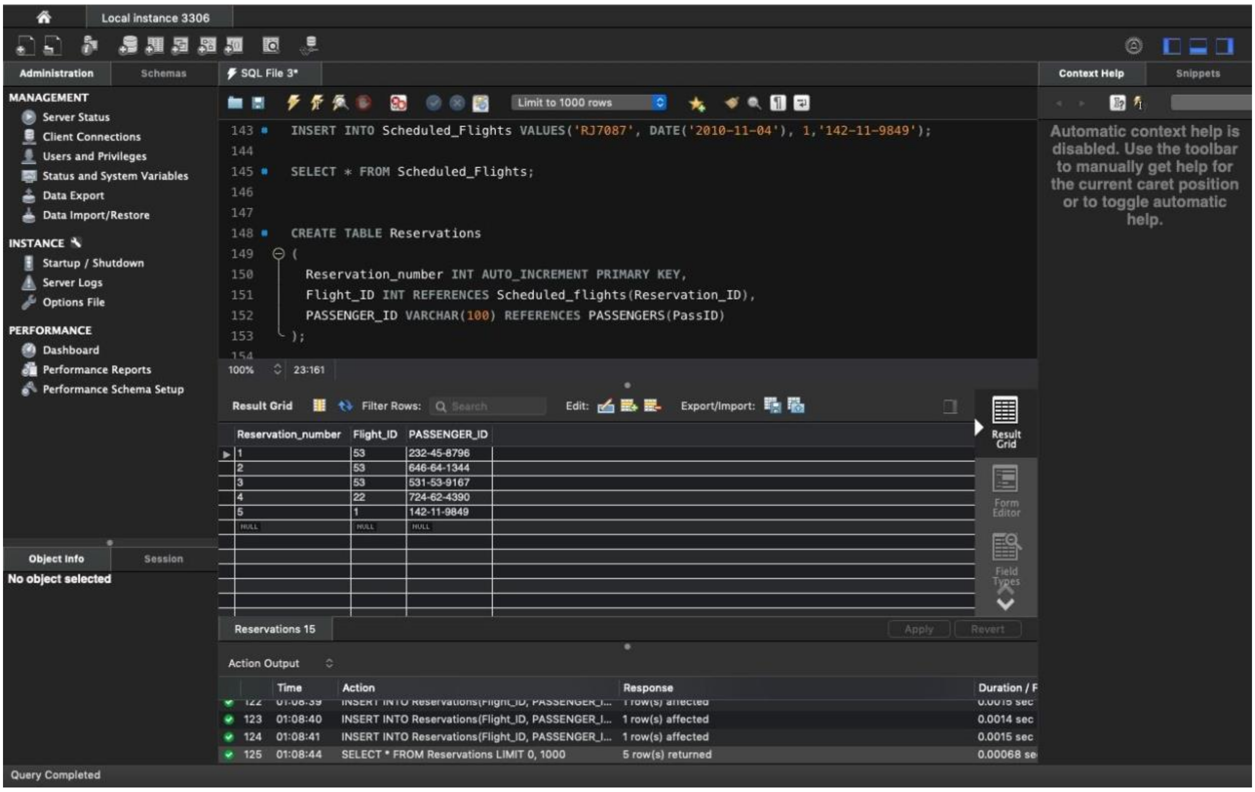
```
     Time      Action                                              Response            Duration / F
110  01:06:30  INSERT INTO Scheduled_Flights VALUES('RJ7087',...   1 row(s) affected   0.0020 sec
111  01:06:31  INSERT INTO Scheduled_Flights VALUES('CP1212',...   1 row(s) affected   0.0012 sec
112  01:06:32  INSERT INTO Scheduled_Flights VALUES('RJ7087',...   1 row(s) affected   0.0013 sec
113  01:06:45  SELECT * FROM Scheduled_Flights LIMIT 0, 1000       5 row(s) returned   0.00061 sec
```

Query Completed

```
======================
CREATE TABLE Reservations
(
  Reservation_number INT AUTO_INCREMENT PRIMARY KEY,
  Flight_ID INT REFERENCES Scheduled_flights(Reservation_ID),
  PASSENGER_ID VARCHAR(100) REFERENCES PASSENGERS(PassID)
);

INSERT INTO Reservations(Flight_ID, PASSENGER_ID) VALUES( 53, '232-45-8796');
INSERT INTO Reservations(Flight_ID, PASSENGER_ID) VALUES( 53, '646-64-1344');
INSERT INTO Reservations(Flight_ID, PASSENGER_ID) VALUES( 53, '531-53-9167');
INSERT INTO Reservations(Flight_ID, PASSENGER_ID) VALUES( 22, '724-62-4390');
INSERT INTO Reservations(Flight_ID, PASSENGER_ID) VALUES( 1, '142-11-9849');

SELECT * FROM Reservations;
```



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```
INSERT INTO Scheduled_Flights VALUES('RJ7087', DATE('2010-11-04'), 1,'142-11-9849');

SELECT * FROM Scheduled_Flights;


CREATE TABLE Reservations
(
  Reservation_number INT AUTO_INCREMENT PRIMARY KEY,
  Flight_ID INT REFERENCES Scheduled_flights(Reservation_ID),
  PASSENGER_ID VARCHAR(100) REFERENCES PASSENGERS(PassID)
);
```

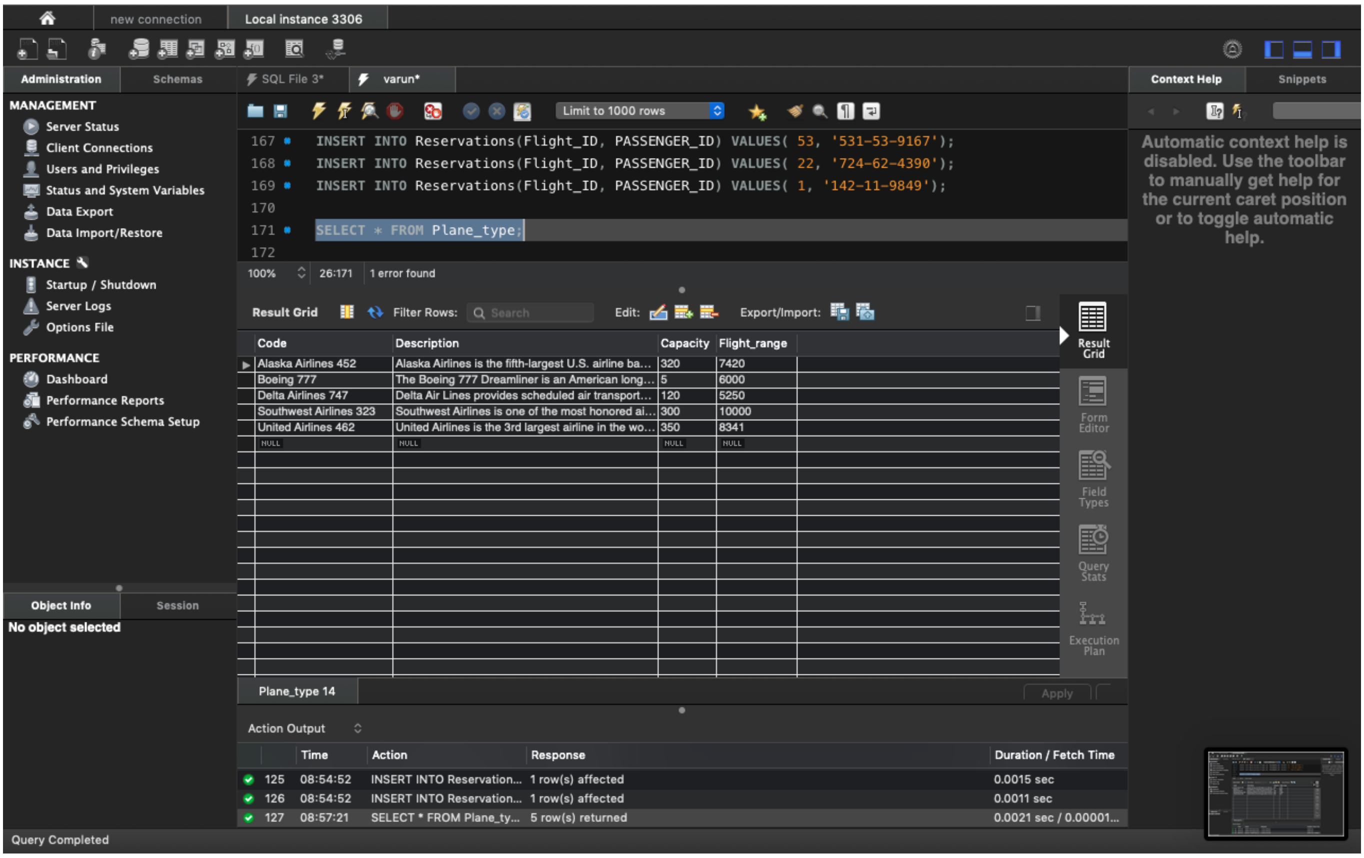
Reservation_number	Flight_ID	PASSENGER_ID
1	53	232-45-8796
2	53	646-64-1344
3	53	531-53-9167
4	22	724-62-4390
5	1	142-11-9849
NULL	NULL	NULL

```
   Time      Action                                        Response              Duration / F
122 01:08:39  INSERT INTO Reservations(Flight_ID, PASSENGER_I...  1 row(s) affected   0.0015 sec
123 01:08:40  INSERT INTO Reservations(Flight_ID, PASSENGER_I...  1 row(s) affected   0.0014 sec
124 01:08:41  INSERT INTO Reservations(Flight_ID, PASSENGER_I...  1 row(s) affected   0.0015 sec
125 01:08:44  SELECT * FROM Reservations LIMIT 0, 1000           5 row(s) returned   0.00068 se
```

Requirements: (Question 5)

- a) For each type of plane, list the type code (C8), the type description (C30), the capacity (D3), and the flight range (D4).

SELECT * FROM Plane_type



```
INSERT INTO Reservations(Flight_ID, PASSENGER_ID) VALUES( 53, '531-53-9167');
INSERT INTO Reservations(Flight_ID, PASSENGER_ID) VALUES( 22, '724-62-4390');
INSERT INTO Reservations(Flight_ID, PASSENGER_ID) VALUES( 1, '142-11-9849');

SELECT * FROM Plane_type;
```

100% 26:171 1 error found

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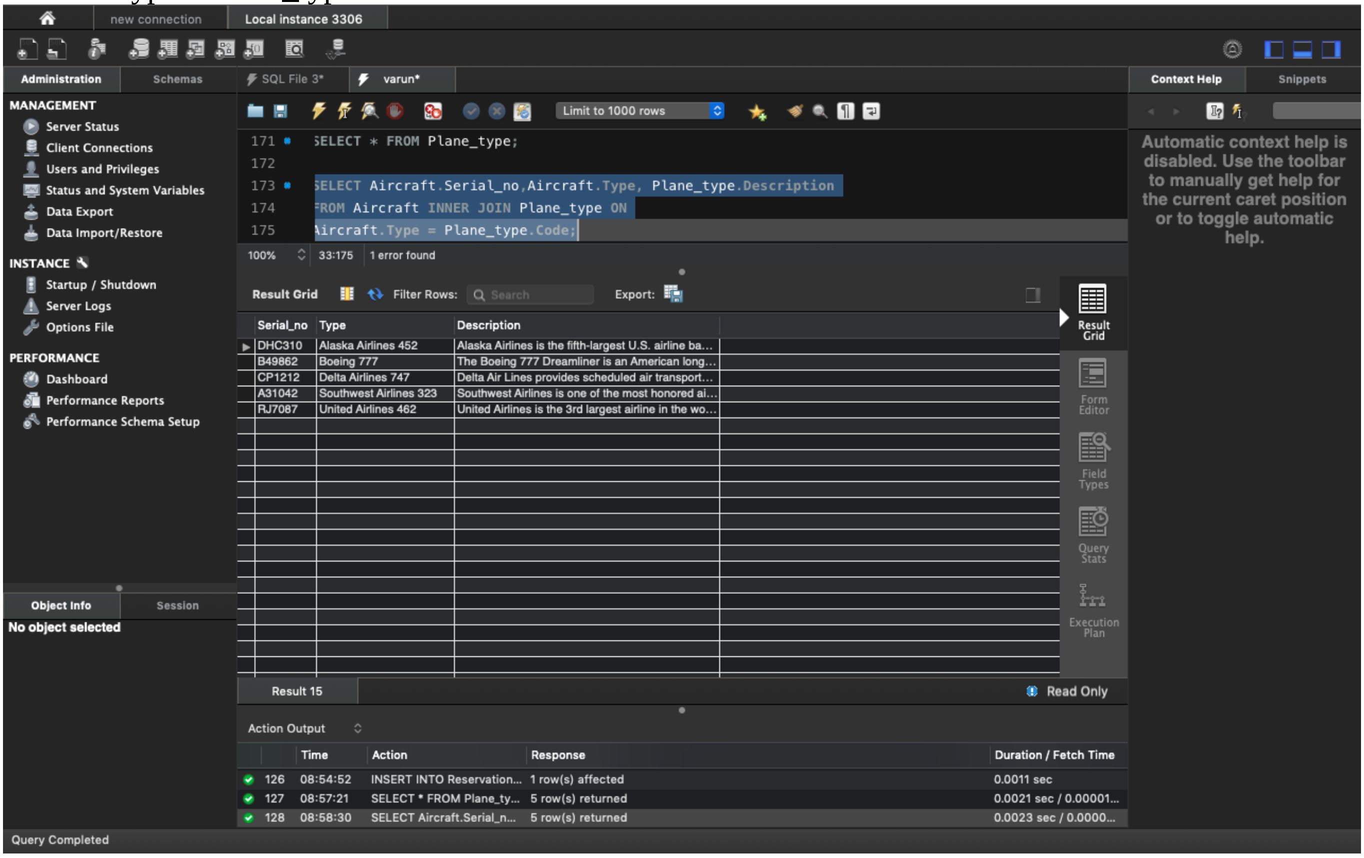
No object selected

Code	Description	Capacity	Flight_range
Alaska Airlines 452	Alaska Airlines is the fifth-largest U.S. airline ba...	320	7420
Boeing 777	The Boeing 777 Dreamliner is an American long...	5	6000
Delta Airlines 747	Delta Air Lines provides scheduled air transport...	120	5250
Southwest Airlines 323	Southwest Airlines is one of the most honored ai...	300	10000
United Airlines 462	United Airlines is the 3rd largest airline in the wo...	350	8341
NULL	NULL	NULL	NULL

	Time	Action	Response	Duration / Fetch Time
125	08:54:52	INSERT INTO Reservation...	1 row(s) affected	0.0015 sec
126	08:54:52	INSERT INTO Reservation...	1 row(s) affected	0.0011 sec
127	08:57:21	SELECT * FROM Plane_ty...	5 row(s) returned	0.0021 sec / 0.00001...

- b) For each aircraft, list the serial number (C12) and the code and description of the type of plane.

SELECT Aircraft.Serial_no,Aircraft.Type, Plane_type.Description
FROM Aircraft INNER JOIN Plane_type ON
Aircraft.Type = Plane_type.Code



```
SELECT * FROM Plane_type;

SELECT Aircraft.Serial_no,Aircraft.Type, Plane_type.Description
FROM Aircraft INNER JOIN Plane_type ON
Aircraft.Type = Plane_type.Code;
```

100%   33:175   1 error found

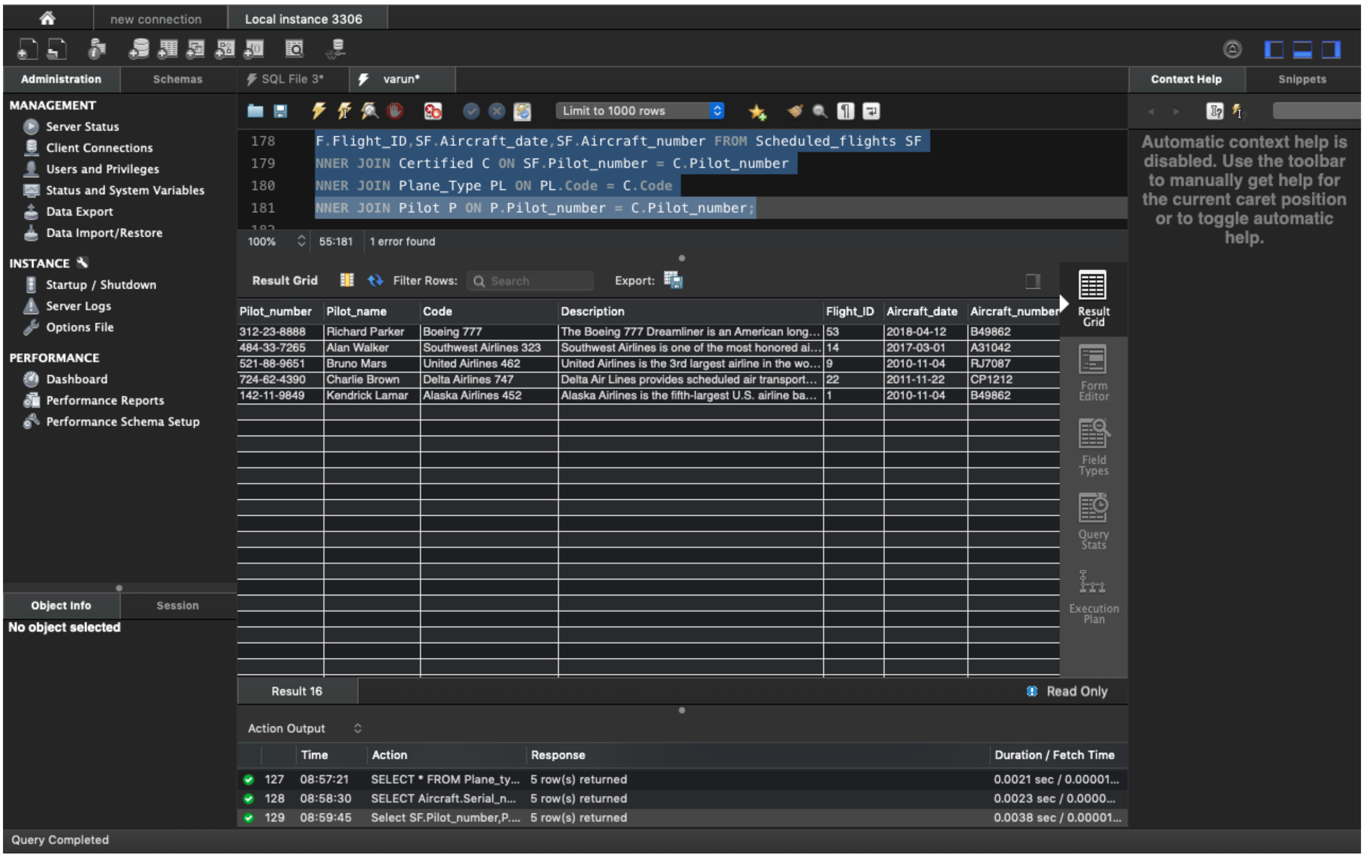
Serial_no	Type	Description
DHC310	Alaska Airlines 452	Alaska Airlines is the fifth-largest U.S. airline ba...
B49862	Boeing 777	The Boeing 777 Dreamliner is an American long...
CP1212	Delta Airlines 747	Delta Air Lines provides scheduled air transport...
A31042	Southwest Airlines 323	Southwest Airlines is one of the most honored ai...
RJ7087	United Airlines 462	United Airlines is the 3rd largest airline in the wo...

Automatic context help is disabled. Use the toolbar to manually get help for the current caret position or to toggle automatic help.

		Time	Action	Response	Duration / Fetch Time
✓	126	08:54:52	INSERT INTO Reservation...	1 row(s) affected	0.0011 sec
✓	127	08:57:21	SELECT * FROM Plane_ty...	5 row(s) returned	0.0021 sec / 0.00001...
✓	128	08:58:30	SELECT Aircraft.Serial_n...	5 row(s) returned	0.0023 sec / 0.0000...

- c) For each pilot, list the pilot number (D5) and the name of the pilot (C30). In addition, list the type code and description of each of the types of planes on which the pilot is certified as well as the flight number (D3), date, and aircraft serial number for all flights on which the pilot is currently scheduled.

Select SF.Pilot_number,P.Pilot_name,C.Code,PL.Description,
SF.Flight_ID,SF.Aircraft_date,SF.Aircraft_number FROM Scheduled_flights SF
INNER JOIN Certified C ON SF.Pilot_number = C.Pilot_number
INNER JOIN Plane_Type PL ON PL.Code = C.Code
INNER JOIN Pilot P ON P.Pilot_number = C.Pilot_number



```
F.Flight_ID,SF.Aircraft_date,SF.Aircraft_number FROM Scheduled_flights SF
NNER JOIN Certified C ON SF.Pilot_number = C.Pilot_number
NNER JOIN Plane_Type PL ON PL.Code = C.Code
NNER JOIN Pilot P ON P.Pilot_number = C.Pilot_number;
```

100% 55:181 1 error found

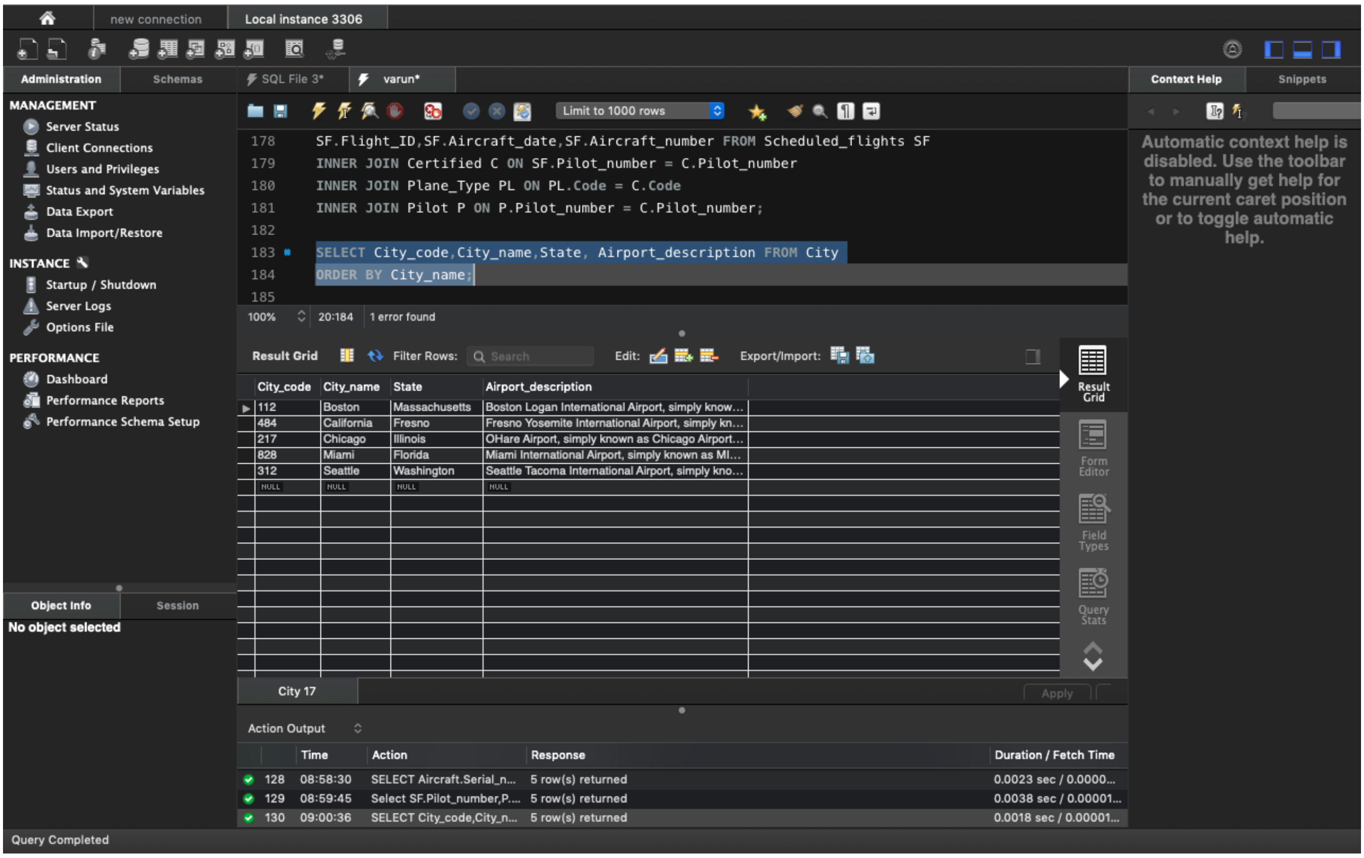
Automatic context help is disabled. Use the toolbar to manually get help for the current caret position or to toggle automatic help.

Pilot_number	Pilot_name	Code	Description	Flight_ID	Aircraft_date	Aircraft_number
312-23-8888	Richard Parker	Boeing 777	The Boeing 777 Dreamliner is an American long...	53	2018-04-12	B49862
484-33-7265	Alan Walker	Southwest Airlines 323	Southwest Airlines is one of the most honored ai...	14	2017-03-01	A31042
521-88-9651	Bruno Mars	United Airlines 462	United Airlines is the 3rd largest airline in the wo...	9	2010-11-04	RJ7087
724-62-4390	Charlie Brown	Delta Airlines 747	Delta Air Lines provides scheduled air transport...	22	2011-11-22	CP1212
142-11-9849	Kendrick Lamar	Alaska Airlines 452	Alaska Airlines is the fifth-largest U.S. airline ba...	1	2010-11-04	B49862

		Time	Action	Response	Duration / Fetch Time
✓	127	08:57:21	SELECT * FROM Plane_ty...	5 row(s) returned	0.0021 sec / 0.00001...
✓	128	08:58:30	SELECT Aircraft.Serial_n...	5 row(s) returned	0.0023 sec / 0.0000...
✓	129	08:59:45	Select SF.Pilot_number,P....	5 row(s) returned	0.0038 sec / 0.00001...

- d) For each city served, list the code for the city (C3), then name of the city (C30), the name of the state (C2), and a description of the airport (C30). Should be in city name order.

```
 SELECT City_code,City_name,State, Airport_description FROM City
ORDER BY City_name;
```



```
SF.Flight_ID,SF.Aircraft_date,SF.Aircraft_number FROM Scheduled_flights SF
INNER JOIN Certified C ON SF.Pilot_number = C.Pilot_number
INNER JOIN Plane_Type PL ON PL.Code = C.Code
INNER JOIN Pilot P ON P.Pilot_number = C.Pilot_number;

SELECT City_code,City_name,State, Airport_description FROM City
ORDER BY City_name;
```

1 error found

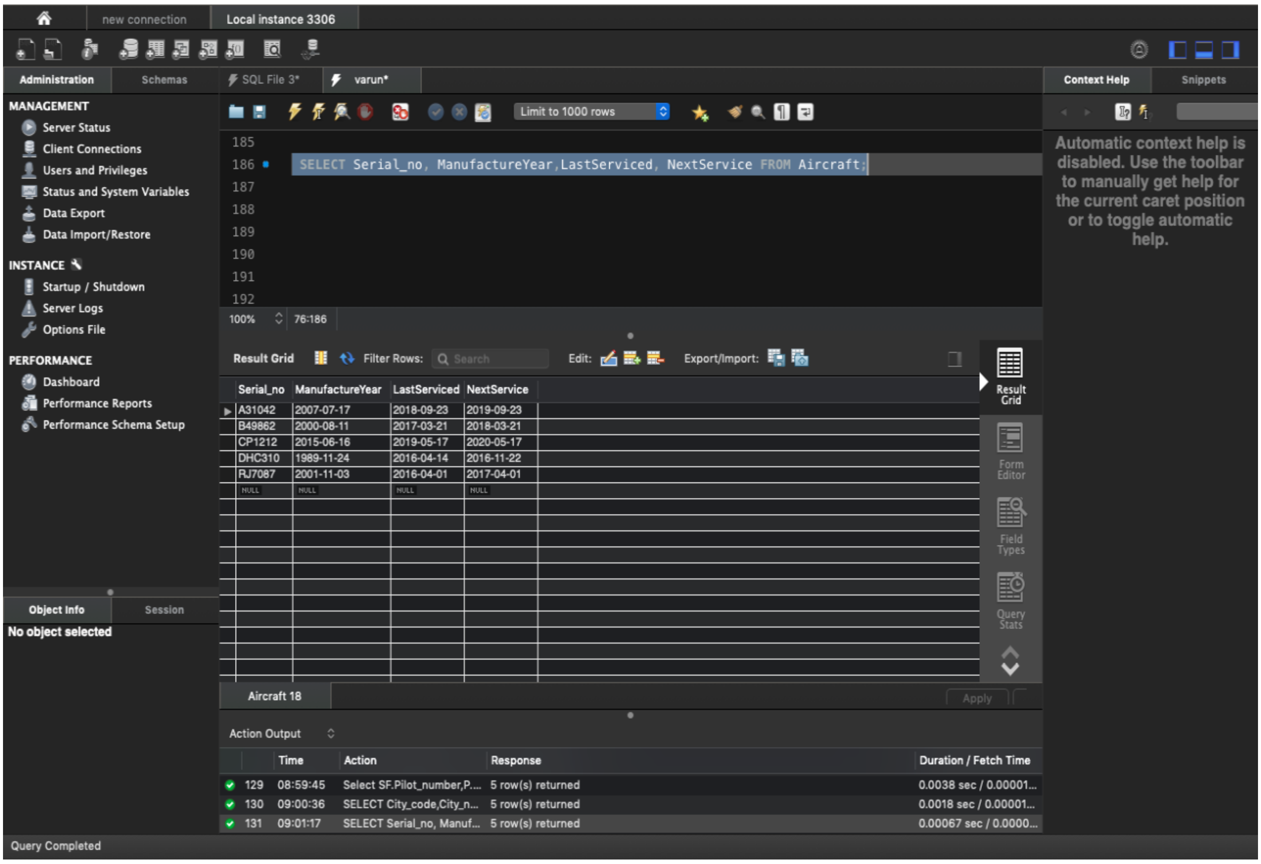
Automatic context help is disabled. Use the toolbar to manually get help for the current caret position or to toggle automatic help.

City_code	City_name	State	Airport_description
112	Boston	Massachusetts	Boston Logan International Airport, simply know...
484	California	Fresno	Fresno Yosemite International Airport, simply kn...
217	Chicago	Illinois	OHare Airport, simply known as Chicago Airport...
828	Miami	Florida	Miami International Airport, simply known as MI...
312	Seattle	Washington	Seattle Tacoma International Airport, simply kno...
NULL	NULL	NULL	NULL

	Time	Action	Response	Duration / Fetch Time
128	08:58:30	SELECT Aircraft.Serial_n...	5 row(s) returned	0.0023 sec / 0.0000...
129	08:59:45	Select SF.Pilot_number,P....	5 row(s) returned	0.0038 sec / 0.00001...
130	09:00:36	SELECT City_code,City_n...	5 row(s) returned	0.0018 sec / 0.00001...

- e) For each aircraft, list the serial number, year it was manufactured, the last date it was serviced and its next service date.

SELECT Serial_no, ManufactureYear,LastServiced, NextService FROM Aircraft



```
SELECT Serial_no, ManufactureYear,LastServiced, NextService FROM Aircraft;
```

Serial_no	ManufactureYear	LastServiced	NextService
A31042	2007-07-17	2018-09-23	2019-09-23
B49862	2000-08-11	2017-03-21	2018-03-21
CP1212	2015-06-16	2019-05-17	2020-05-17
DHC310	1989-11-24	2016-04-14	2016-11-22
RJ7087	2001-11-03	2016-04-01	2017-04-01
NULL	NULL	NULL	NULL

Aircraft 18

Action Output

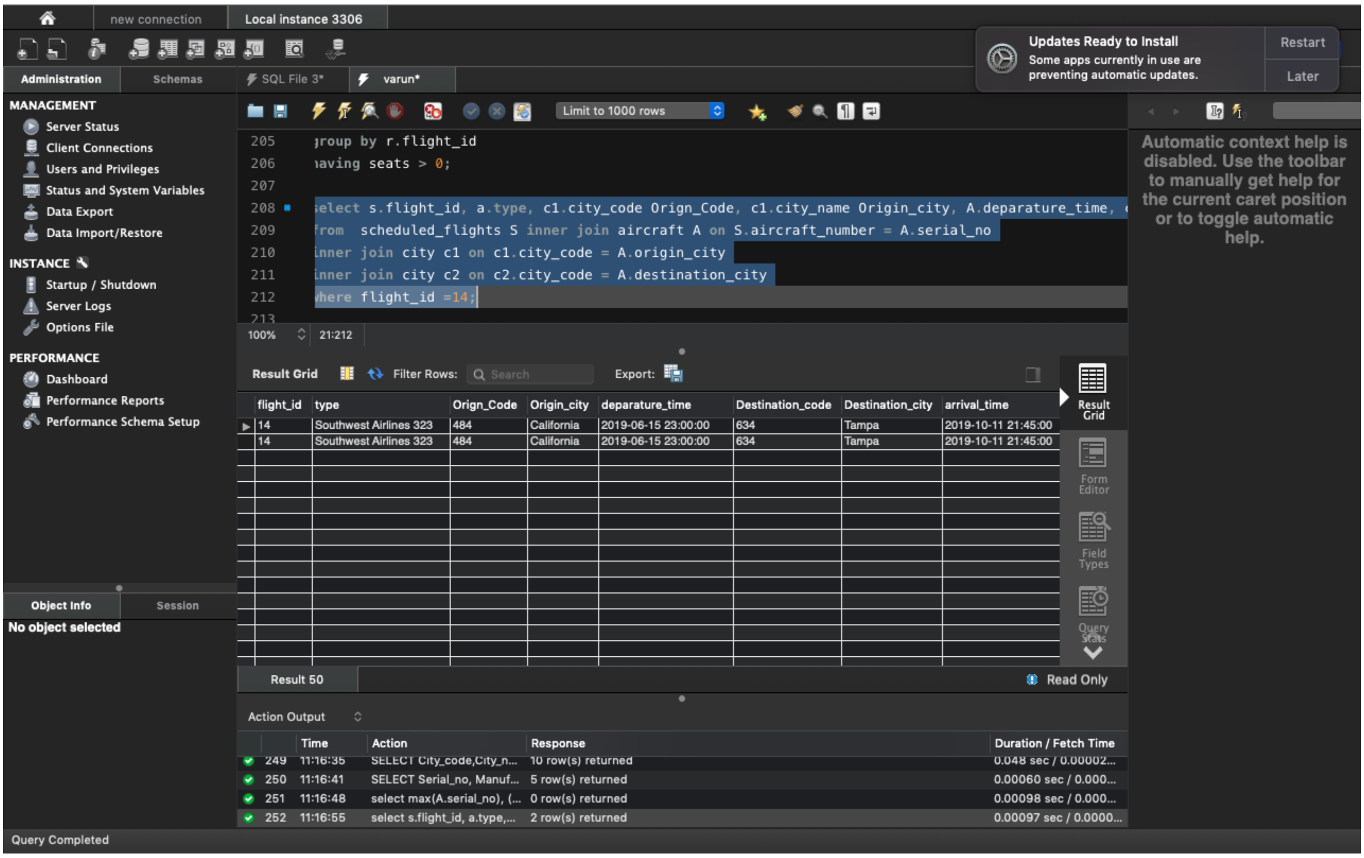
```
     Time      Action                       Response            Duration / Fetch Time
✓ 129  08:59:45  Select SF.Pilot_number,P....  5 row(s) returned  0.0038 sec / 0.00001...
✓ 130  09:00:36  SELECT City_code,City_n...    5 row(s) returned  0.0018 sec / 0.00001...
✓ 131  09:01:17  SELECT Serial_no, Manuf...    5 row(s) returned  0.00067 sec / 0.0000...
```

Query Completed

<u>Queries:</u> (Question 6)

- a) For a given point of origination and destination, list all flights scheduled that still have seats available and include the number of seats available and the date. Note: should be in alphabetical order of origination city.

```
select s.flight_id, a.type, c1.city_code Orign_Code, c1.city_name Origin_city, A.deparature_time,
c2.city_code Destination_code, c2.city_name Destination_city, A.arrival_time
from  scheduled_flights S inner join aircraft A on S.aircraft_number = A.serial_no
inner join city c1 on c1.city_code = A.origin_city
inner join city c2 on c2.city_code = A.destination_city
where flight_id =14;
```



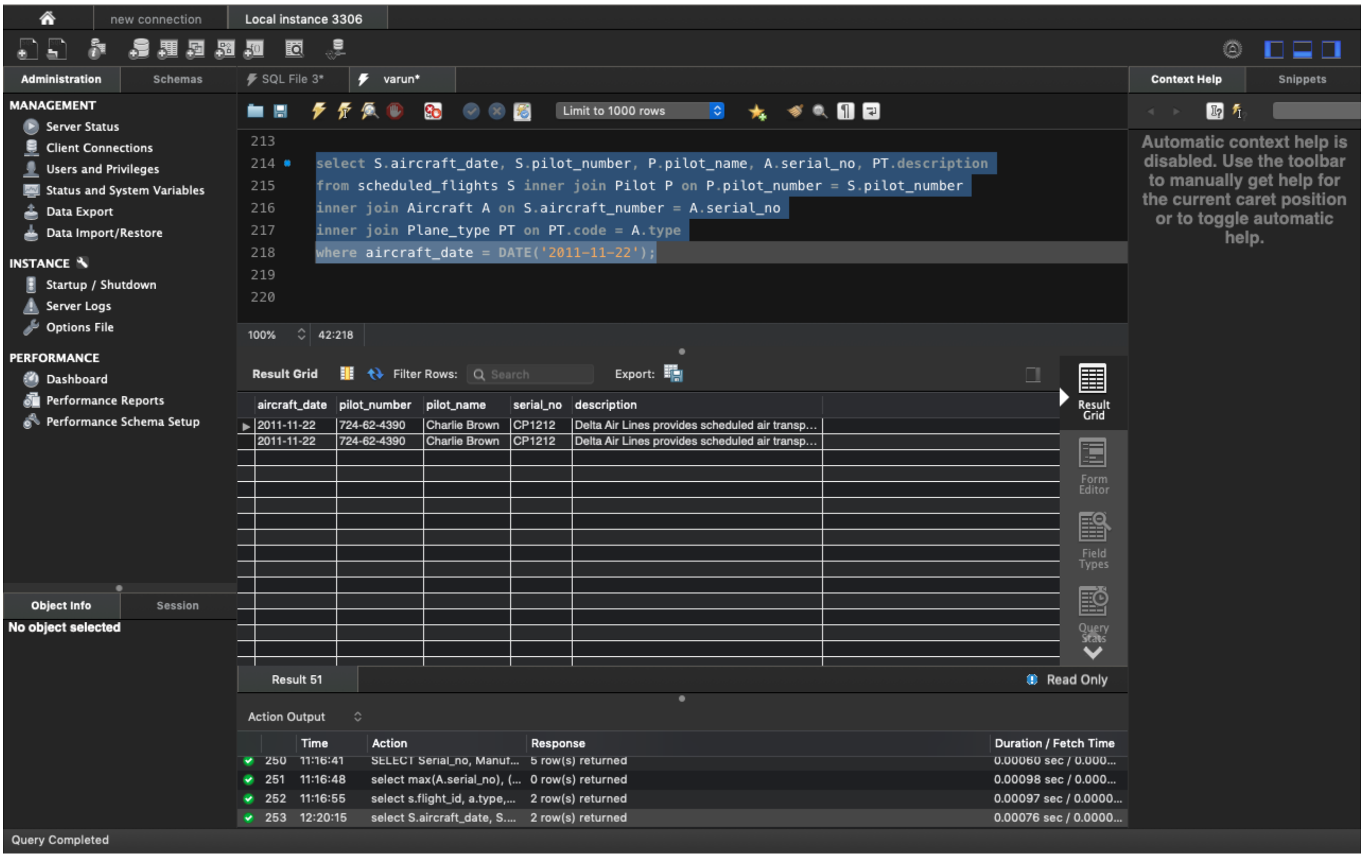
```
group by r.flight_id
having seats > 0;

select s.flight_id, a.type, c1.city_code Orign_Code, c1.city_name Origin_city, A.deparature_time,
from  scheduled_flights S inner join aircraft A on S.aircraft_number = A.serial_no
inner join city c1 on c1.city_code = A.origin_city
inner join city c2 on c2.city_code = A.destination_city
where flight_id =14;
```

flight_id	type	Orign_Code	Origin_city	deparature_time	Destination_code	Destination_city	arrival_time
14	Southwest Airlines 323	484	California	2019-06-15 23:00:00	634	Tampa	2019-10-11 21:45:00
14	Southwest Airlines 323	484	California	2019-06-15 23:00:00	634	Tampa	2019-10-11 21:45:00

```
     Time      Action                      Response             Duration / Fetch Time
249  11:16:35  SELECT City_code,City_n...  10 row(s) returned   0.048 sec / 0.00002...
250  11:16:41  SELECT Serial_no, Manuf...  5 row(s) returned    0.00060 sec / 0.000...
251  11:16:48  select max(A.serial_no), (...  0 row(s) returned  0.00098 sec / 0.000...
252  11:16:55  select s.flight_id, a.type,...  2 row(s) returned  0.00097 sec / 0.0000...
```

- b) For a given date, list all of the pilots scheduled for flight including the pilot number (ID), pilot name and the serial number of the aircraft and plane type description.

```
select S.aircraft_date, S.pilot_number, P.pilot_name, A.serial_no, PT.description
from scheduled_flights S inner join Pilot P on P.pilot_number = S.pilot_number
inner join Aircraft A on S.aircraft_number = A.serial_no
inner join Plane_type PT on PT.code = A.type
where aircraft_date = DATE('2011-11-22');
```



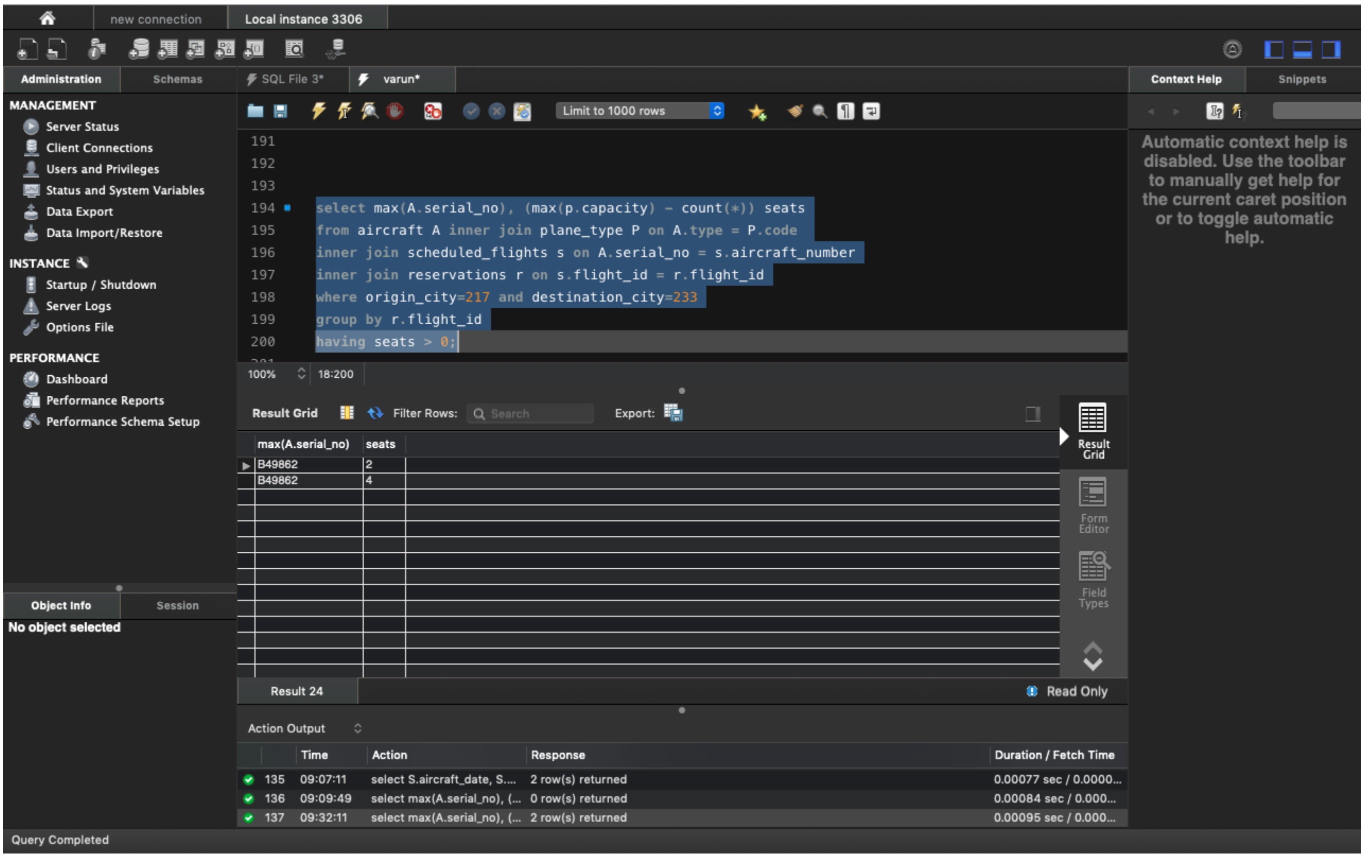
```
select S.aircraft_date, S.pilot_number, P.pilot_name, A.serial_no, PT.description
from scheduled_flights S inner join Pilot P on P.pilot_number = S.pilot_number
inner join Aircraft A on S.aircraft_number = A.serial_no
inner join Plane_type PT on PT.code = A.type
where aircraft_date = DATE('2011-11-22');
```

aircraft_date	pilot_number	pilot_name	serial_no	description
2011-11-22	724-62-4390	Charlie Brown	CP1212	Delta Air Lines provides scheduled air transp...
2011-11-22	724-62-4390	Charlie Brown	CP1212	Delta Air Lines provides scheduled air transp...

```
    Time      Action                         Response             Duration / Fetch Time
250 11:16:41  SELECT Serial_no, Manuf...     5 row(s) returned    0.00060 sec / 0.000...
251 11:16:48  select max(A.serial_no), (...  0 row(s) returned    0.00098 sec / 0.000...
252 11:16:55  select s.flight_id, a.type,... 2 row(s) returned    0.00097 sec / 0.0000...
253 12:20:15  select S.aircraft_date, S....  2 row(s) returned    0.00076 sec / 0.0000...
```

- c) For a given flight, list the flight number, the code and name of the city of origination, the time of departure, the code and name of the destination city, and the time of arrival.

select max(A.serial_no), (max(p.capacity) - count(*)) seats
from aircraft A inner join plane_type P on A.type = P.code
inner join scheduled_flights s on A.serial_no = s.aircraft_number
inner join reservations r on s.flight_id = r.flight_id
where origin_city=484 and destination_city=634
group by r.flight_id
having seats > 0;



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```
select max(A.serial_no), (max(p.capacity) - count(*)) seats
from aircraft A inner join plane_type P on A.type = P.code
inner join scheduled_flights s on A.serial_no = s.aircraft_number
inner join reservations r on s.flight_id = r.flight_id
where origin_city=217 and destination_city=233
group by r.flight_id
having seats > 0;
```

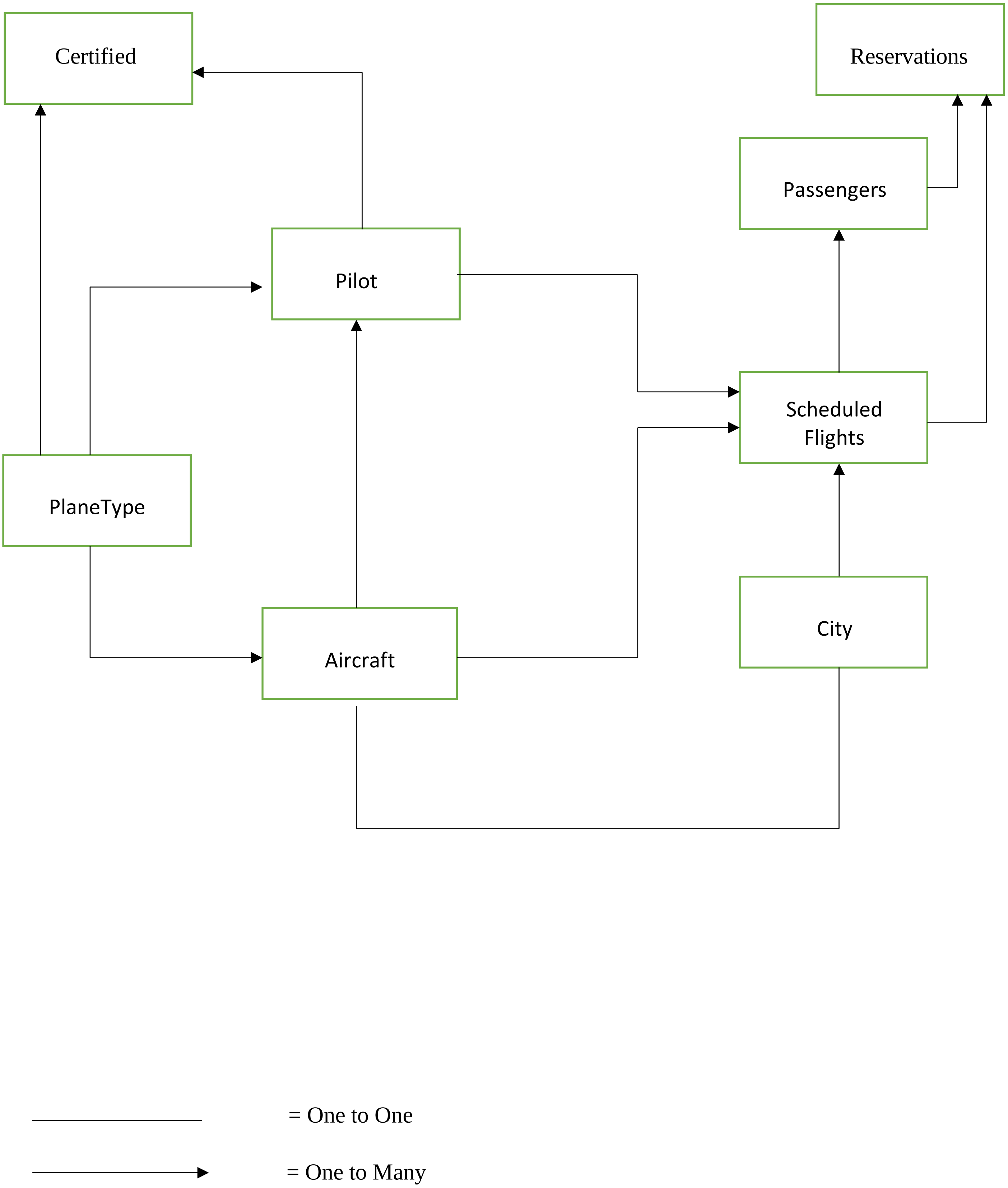
max(A.serial_no)	seats
B49862	2
B49862	4

		Time	Action	Response	Duration / Fetch Time
✓	135	09:07:11	select S.aircraft_date, S....	2 row(s) returned	0.00077 sec / 0.0000...
✓	136	09:09:49	select max(A.serial_no), (...	0 row(s) returned	0.00084 sec / 0.000...
✓	137	09:32:11	select max(A.serial_no), (...	2 row(s) returned	0.00095 sec / 0.000...

Special Restrictions:

- The origin cities should be in alphabetical order.

Diagram:


Certified
Reservations
Passengers
Pilot
Scheduled Flights
PlaneType
City
Aircraft
= One to One
= One to Many