```
SQL> --****************************************************
SQL> --CS 2258                              B.Senthil Kumar
SQL> --DBMS LabAsst. Prof
SQL> --        Computer Science Department
SQL> --               SSN College of Engineering
SQL> --                    senthil@ssn.edu.in
SQL> --****************************************************
SQL> --          AIRLINES DATASET
SQL> --              Version 1.0
SQL> --              February 05, 2013
SQL> --****************************************************
SQL> --Sources:
SQL> --        This dataset is prepared for the assignment
SQL> --on Subqueries and Join in SQL to students. This
SQL> --is a test dataset.
SQL> --The below SQL create the relations for airlines
SQL> --database with constraints.
SQL> --
SQL> --****************************************************
SQL>
SQL> drop table fl_schedule;

Table dropped.

SQL> drop table flights;

Table dropped.

SQL> drop table routes;

Table dropped.

SQL> drop table certified;

Table dropped.

SQL> drop table employee;

Table dropped.

SQL> drop table aircraft;

Table dropped.

SQL>
SQL> create table aircraft(
  2  aid number(4) constraint aid_pk primary key,
  3  aname varchar2(30),
  4  type varchar2(10),
  5  cruisingrange number(6)
  6  );

Table created.

SQL>
SQL> create table employee(
  2  eid number(9) constraint eid_pk primary key,
  3  ename varchar2(30),
  4  salary number(10,2)
  5  );

Table created.

SQL>
```

```
SQL> create table certified(
  2  eid number(9),
  3  aid number(4),
  4  constraint eaid_pk primary key(eid,aid),
  5  constraint eid_fk foreign key(eid) references employee,
  6  constraint aid_fk foreign key(aid) references aircraft
  7  );

Table created.

SQL>
SQL> create table routes(
  2  routeID varchar2(6) constraint rid_pk primary key,
  3  orig_airport varchar2(20),
  4  dest_airport varchar2(20),
  5  distance number(6)
  6  );

Table created.

SQL>
SQL> create table flights(
  2  flightNo varchar2(7) constraint fno_pk primary key,
  3  rID varchar2(6),
  4  aid number(4),
  5  constraint fl_aid_fk foreign key(aid) references aircraft,
  6  constraint rid_fk foreign key(rid) references routes
  7  );

Table created.

SQL>
SQL> create table fl_schedule(
  2  flno varchar2(7),
  3  departs date,
  4  dtime number(4),
  5  arrives date,
  6  atime number(4),
  7  price number(7,2),
  8  constraint fno_dep_pk primary key (flno,departs),
  9  constraint fno_fk foreign key(flno) references flights
 10  );

Table created.

SQL>
SQL> --********************END OF CREATE********************************
SQL> --***************************************************
SQL> --CS 2258                              B.Senthil Kumar
SQL> --DBMS LabAsst. Prof
SQL> --       Computer Science Department
SQL> --               SSN College of Engineering
SQL> --                    senthil@ssn.edu.in
SQL> --***************************************************
SQL> --         AIRLINES DATASET
SQL> --              Version 1.0
SQL> --              February 05, 2013
SQL> --***************************************************
SQL> --Sources:
SQL> --        This dataset is prepared for the assignment
SQL> --on Subqueries and Join in SQL to students. This
SQL> --is a test dataset.
SQL> --The below SQL statements will populate the
SQL> --airlines database. The flight schedule contains
```

```
SQL> --information pertained to flights during 12 to 22
SQL> --April 2005. Do NOT MODIFY the instances.
SQL> --
SQL> --*****************************************************
SQL> --
SQL> -- Populating Aircraft
SQL> --aircraft(aid,aname, type, cruisingrange)
SQL>
SQL> INSERT INTO  aircraft VALUES (1,'Boeing 747-400','Boeing',8430);

1 row created.

SQL> INSERT INTO  aircraft VALUES (2,'Boeing 737-800','Boeing',3383);

1 row created.

SQL> INSERT INTO  aircraft VALUES (3,'Airbus A340-300','Airbus',7120);

1 row created.

SQL> INSERT INTO  aircraft VALUES (4,'British Aerospace Jetstream
41','BAe',1502);

1 row created.

SQL> INSERT INTO  aircraft VALUES (5,'Embraer ERJ-145','Embraer',1530);

1 row created.

SQL> INSERT INTO  aircraft VALUES (6,'SAAB 340','Saab',2128);

1 row created.

SQL> INSERT INTO  aircraft VALUES (7,'Piper PA-46 Meridian','Piper',520);

1 row created.

SQL> INSERT INTO  aircraft VALUES (8,'Tupolev Tu-154','Tupolev',4103);

1 row created.

SQL> INSERT INTO  aircraft VALUES (16,'Schweizer 2-33','Schweizer',300);

1 row created.

SQL> INSERT INTO  aircraft VALUES (9,'Lockheed L1011
Tristar','Lockheed',6900);

1 row created.

SQL> INSERT INTO  aircraft VALUES (10,'Boeing 757-300','Boeing',4010);

1 row created.

SQL> INSERT INTO  aircraft VALUES (11,'Boeing 777-300','Boeing',6441);

1 row created.

SQL> INSERT INTO  aircraft VALUES (12,'Boeing 767-400ER','Boeing',6475);

1 row created.

SQL> INSERT INTO  aircraft VALUES (13,'Airbus A320','Airbus',2605);
```

1 row created.

SQL> INSERT INTO aircraft VALUES (14,'Airbus A319','Airbus',1805);

1 row created.

SQL> INSERT INTO aircraft VALUES (15,'Boeing 727','Boeing',1504);

1 row created.

SQL>
SQL>
SQL> -- Populating employee relation
SQL> --employee(eid, ename, salary)
SQL>
SQL> INSERT INTO employee VALUES (242518965,'James Smith',120433);

1 row created.

SQL> INSERT INTO employee VALUES (141582651,'Mary Johnson',178345);

1 row created.

SQL> INSERT INTO employee VALUES (011564812,'John Williams',153972);

1 row created.

SQL> INSERT INTO employee VALUES (567354612,'Lisa Walker',256481);

1 row created.

SQL> INSERT INTO employee VALUES (552455318,'Larry West',101745);

1 row created.

SQL> INSERT INTO employee VALUES (550156548,'Karen Scott',205187);

1 row created.

SQL> INSERT INTO employee VALUES (390487451,'Lawrence Sperry',212156);

1 row created.

SQL> INSERT INTO employee VALUES (274878974,'Michael Miller',99890);

1 row created.

SQL> INSERT INTO employee VALUES (254099823,'Patricia Jones',24450);

1 row created.

SQL> INSERT INTO employee VALUES (356187925,'Robert Brown',44740);

1 row created.

SQL> INSERT INTO employee VALUES (355548984,'Angela Martinez',212156);

1 row created.

SQL> INSERT INTO employee VALUES (310454876,'Joseph Thompson',212156);

1 row created.

SQL> INSERT INTO employee VALUES (489456522,'Linda Davis',127984);

1 row created.

SQL> INSERT INTO employee VALUES (489221823,'Richard Jackson',23980);

1 row created.

SQL> INSERT INTO employee VALUES (548977562,'William Ward',84476);

1 row created.

SQL> INSERT INTO employee VALUES (310454877,'Chad Stewart',33546);

1 row created.

SQL> INSERT INTO employee VALUES (142519864,'Betty Adams',227489);

1 row created.

SQL> INSERT INTO employee VALUES (269734834,'George Wright',289950);

1 row created.

SQL> INSERT INTO employee VALUES (287321212,'Michael Miller',48090);

1 row created.

SQL> INSERT INTO employee VALUES (552455348,'Dorthy Lewis',92013);

1 row created.

SQL> INSERT INTO employee VALUES (248965255,'Barbara Wilson',43723);

1 row created.

SQL> INSERT INTO employee VALUES (159542516,'William Moore',48250);

1 row created.

SQL> INSERT INTO employee VALUES (348121549,'Haywood Kelly',32899);

1 row created.

SQL> INSERT INTO employee VALUES (090873519,'Elizabeth Taylor',32021);

1 row created.

SQL> INSERT INTO employee VALUES (486512566,'David Anderson',743001);

1 row created.

SQL> INSERT INTO employee VALUES (619023588,'Jennifer Thomas',54921);

1 row created.

SQL> INSERT INTO employee VALUES (015645489,'Donald King',18050);

1 row created.

SQL> INSERT INTO employee VALUES (556784565,'Mark Young',205187);

1 row created.

SQL> INSERT INTO employee VALUES (573284895,'Eric Cooper',114323);

```
1 row created.

SQL> INSERT INTO  employee VALUES (574489456,'William Jones',105743);

1 row created.

SQL> INSERT INTO  employee VALUES (574489457,'Milo Brooks',12000);

1 row created.

SQL>
SQL>
SQL> -- Populating Certified relation
SQL> --certified(eid, aid)
SQL>
SQL> INSERT INTO certified VALUES (567354612,1);

1 row created.

SQL> INSERT INTO certified VALUES (567354612,2);

1 row created.

SQL> INSERT INTO certified VALUES (567354612,10);

1 row created.

SQL> INSERT INTO certified VALUES (567354612,11);

1 row created.

SQL> INSERT INTO certified VALUES (567354612,12);

1 row created.

SQL> INSERT INTO certified VALUES (567354612,15);

1 row created.

SQL> INSERT INTO certified VALUES (567354612,7);

1 row created.

SQL> INSERT INTO certified VALUES (567354612,9);

1 row created.

SQL> INSERT INTO certified VALUES (567354612,3);

1 row created.

SQL> INSERT INTO certified VALUES (567354612,4);

1 row created.

SQL> INSERT INTO certified VALUES (567354612,5);

1 row created.

SQL> INSERT INTO certified VALUES (552455318,2);

1 row created.
```

```
SQL> INSERT INTO certified VALUES (552455318,14);

1 row created.

SQL> INSERT INTO certified VALUES (550156548,1);

1 row created.

SQL> INSERT INTO certified VALUES (550156548,12);

1 row created.

SQL> INSERT INTO certified VALUES (390487451,3);

1 row created.

SQL> INSERT INTO certified VALUES (390487451,13);

1 row created.

SQL> INSERT INTO certified VALUES (390487451,14);

1 row created.

SQL> INSERT INTO certified VALUES (274878974,10);

1 row created.

SQL> INSERT INTO certified VALUES (274878974,12);

1 row created.

SQL> INSERT INTO certified VALUES (355548984,8);

1 row created.

SQL> INSERT INTO certified VALUES (355548984,9);

1 row created.

SQL> INSERT INTO certified VALUES (310454876,8);

1 row created.

SQL> INSERT INTO certified VALUES (310454876,9);

1 row created.

SQL> INSERT INTO certified VALUES (548977562,7);

1 row created.

SQL> INSERT INTO certified VALUES (142519864,1);

1 row created.

SQL> INSERT INTO certified VALUES (142519864,11);

1 row created.

SQL> INSERT INTO certified VALUES (142519864,12);

1 row created.
```

```
SQL> INSERT INTO certified VALUES (142519864,10);

1 row created.

SQL> INSERT INTO certified VALUES (142519864,3);

1 row created.

SQL> INSERT INTO certified VALUES (142519864,2);

1 row created.

SQL> INSERT INTO certified VALUES (142519864,13);

1 row created.

SQL> INSERT INTO certified VALUES (142519864,7);

1 row created.

SQL> INSERT INTO certified VALUES (269734834,1);

1 row created.

SQL> INSERT INTO certified VALUES (269734834,2);

1 row created.

SQL> INSERT INTO certified VALUES (269734834,3);

1 row created.

SQL> INSERT INTO certified VALUES (269734834,4);

1 row created.

SQL> INSERT INTO certified VALUES (269734834,5);

1 row created.

SQL> INSERT INTO certified VALUES (269734834,6);

1 row created.

SQL> INSERT INTO certified VALUES (269734834,7);

1 row created.

SQL> INSERT INTO certified VALUES (269734834,8);

1 row created.

SQL> INSERT INTO certified VALUES (269734834,9);

1 row created.

SQL> INSERT INTO certified VALUES (269734834,10);

1 row created.

SQL> INSERT INTO certified VALUES (269734834,11);

1 row created.
```

```
SQL> INSERT INTO certified VALUES (269734834,12);

1 row created.

SQL> INSERT INTO certified VALUES (269734834,13);

1 row created.

SQL> INSERT INTO certified VALUES (269734834,14);

1 row created.

SQL> INSERT INTO certified VALUES (269734834,15);

1 row created.

SQL> INSERT INTO certified VALUES (552455318,7);

1 row created.

SQL> INSERT INTO certified VALUES (556784565,5);

1 row created.

SQL> INSERT INTO certified VALUES (556784565,2);

1 row created.

SQL> INSERT INTO certified VALUES (556784565,3);

1 row created.

SQL> INSERT INTO certified VALUES (573284895,3);

1 row created.

SQL> INSERT INTO certified VALUES (573284895,4);

1 row created.

SQL> INSERT INTO certified VALUES (573284895,5);

1 row created.

SQL> INSERT INTO certified VALUES (574489456,8);

1 row created.

SQL> INSERT INTO certified VALUES (574489456,6);

1 row created.

SQL> INSERT INTO certified VALUES (574489457,16);

1 row created.

SQL> INSERT INTO certified VALUES (287321212,7);

1 row created.

SQL> INSERT INTO certified VALUES (242518965,2);

1 row created.
```

```
SQL> INSERT INTO certified VALUES (242518965,10);

1 row created.

SQL> INSERT INTO certified VALUES (141582651,2);

1 row created.

SQL> INSERT INTO certified VALUES (141582651,10);

1 row created.

SQL> INSERT INTO certified VALUES (141582651,12);

1 row created.

SQL> INSERT INTO certified VALUES (011564812,2);

1 row created.

SQL> INSERT INTO certified VALUES (011564812,10);

1 row created.

SQL> INSERT INTO certified VALUES (356187925,6);

1 row created.

SQL> INSERT INTO certified VALUES (159542516,5);

1 row created.

SQL> INSERT INTO certified VALUES (159542516,7);

1 row created.

SQL> INSERT INTO certified VALUES (090873519,6);

1 row created.

SQL>
SQL>
SQL> -- Populating Routes relation
SQL> --routes(routeID, orig_airport,dest_airport, distance)
SQL>
SQL> INSERT INTO routes VALUES ('LW100','Los Angeles','Washington D.C.',2308);

1 row created.

SQL> INSERT INTO routes VALUES ('LC101','Los Angeles','Chicago',1749);

1 row created.

SQL> INSERT INTO routes VALUES ('LD102','Los Angeles','Dallas',1251);

1 row created.

SQL> INSERT INTO routes VALUES ('LB103','Los Angeles','Boston',2606);

1 row created.

SQL> INSERT INTO routes VALUES ('LS104','Los Angeles','Sydney',7487);

1 row created.
```

```
SQL> INSERT INTO routes VALUES ('LT105','Los Angeles','Tokyo',5478);

1 row created.

SQL> INSERT INTO routes VALUES ('LH106','Los Angeles','Honolulu',2551);

1 row created.

SQL> INSERT INTO routes VALUES ('CL150','Chicago','Los Angeles',1749);

1 row created.

SQL> INSERT INTO routes VALUES ('CN151','Chicago','New York',802);

1 row created.

SQL> INSERT INTO routes VALUES ('MD200','Madison','Detroit',319);

1 row created.

SQL> INSERT INTO routes VALUES ('DN250','Detroit','New York',470);

1 row created.

SQL> INSERT INTO routes VALUES ('DM251','Detroit','Montreal',517);

1 row created.

SQL> INSERT INTO routes VALUES ('MN204','Madison','New York',789);

1 row created.

SQL> INSERT INTO routes VALUES ('MC201','Madison','Chicago',150);

1 row created.

SQL> INSERT INTO routes VALUES ('MP202','Madison','Pittsburgh',510);

1 row created.

SQL> INSERT INTO routes VALUES ('MM203','Madison','Minneapolis',247);

1 row created.

SQL> INSERT INTO routes VALUES ('MNY300','Minneapolis','New York',991);

1 row created.

SQL> INSERT INTO routes VALUES ('PN350','Pittsburgh','New York',303);

1 row created.

SQL> INSERT INTO routes VALUES ('PC351','Pittsburgh','Chicago',409);

1 row created.

SQL> INSERT INTO routes VALUES ('NYL400','New York','London',3471);

1 row created.

SQL> INSERT INTO routes VALUES ('NYP401','New York','Paris',3631);

1 row created.
```

```
SQL> INSERT INTO routes values('LNY107','Los Angeles','New York',2510);

1 row created.

SQL>
SQL>
SQL> -- Populating Fligts relations
SQL> --flights(flightNo, rID, aid)
SQL>
SQL> INSERT INTO flights VALUES ('9E-3749','DM251',4);

1 row created.

SQL> INSERT INTO flights VALUES ('MQ-4477','DN250',5);

1 row created.

SQL> INSERT INTO flights VALUES ('MQ-4565','DN250',5);

1 row created.

SQL> INSERT INTO flights VALUES ('CX-7520','LD102',4);

1 row created.

SQL> INSERT INTO flights VALUES ('WS-5060','LD102',5);

1 row created.

SQL> INSERT INTO flights VALUES ('QF-3045','LD102',15);

1 row created.

SQL> INSERT INTO flights VALUES ('JJ-7456','LW100',13);

1 row created.

SQL> INSERT INTO flights VALUES ('JJ-2482','LW100',13);

1 row created.

SQL> INSERT INTO flights VALUES ('SN-8814','LW100',2);

1 row created.

SQL> INSERT INTO flights VALUES ('WN-484','LC101',14);

1 row created.

SQL> INSERT INTO flights VALUES ('WN-434','LC101',13);

1 row created.

SQL> INSERT INTO flights VALUES ('B6-474','LB103',2);

1 row created.

SQL> INSERT INTO flights VALUES ('B6-482','LB103',2);

1 row created.

SQL> INSERT INTO flights VALUES ('VA-6551','LS104',1);
```

1 row created.

SQL> INSERT INTO flights VALUES ('VA-2','LS104',1);

1 row created.

SQL> INSERT INTO flights VALUES ('DJ-2','LS104',1);

1 row created.

SQL> INSERT INTO flights VALUES ('SQ-11','LT105',11);

1 row created.

SQL> INSERT INTO flights VALUES ('AI-7205','LT105',12);

1 row created.

SQL> INSERT INTO flights VALUES ('MH-93','LT105',11);

1 row created.

SQL> INSERT INTO flights VALUES ('HA-3','LH106',13);

1 row created.

SQL> INSERT INTO flights VALUES ('HA-1','LH106',13);

1 row created.

SQL> INSERT INTO flights VALUES ('UA-1428','LH106',2);

1 row created.

SQL> INSERT INTO flights VALUES ('A5-3376','CL150',14);

1 row created.

SQL> INSERT INTO flights VALUES ('A5-3246','CN151',4);

1 row created.

SQL> INSERT INTO flights VALUES ('9E-3851','MD200',5);

1 row created.

SQL> INSERT INTO flights VALUES ('9E-3622','MD200',4);

1 row created.

SQL> INSERT INTO flights VALUES ('G7-6205','MN204',4);

1 row created.

SQL> INSERT INTO flights VALUES ('EV-5134','MN204',15);

1 row created.

SQL> INSERT INTO flights VALUES ('RP-5018','MC201',16);

1 row created.

SQL> INSERT INTO flights VALUES ('G7-3664','MC201',5);

1 row created.

SQL> INSERT INTO flights VALUES ('FX-2351','MP202',7);

1 row created.

SQL> INSERT INTO flights VALUES ('AS-5958','MM203',16);

1 row created.

SQL> INSERT INTO flights VALUES ('AS-5062','MM203',7);

1 row created.

SQL> INSERT INTO flights VALUES ('DL-3402','PN350',15);

1 row created.

SQL> INSERT INTO flights VALUES ('CY-1846','NYL400',8);

1 row created.

SQL> INSERT INTO flights VALUES ('BA-178','NYL400',10);

1 row created.

SQL> INSERT INTO flights VALUES ('IB-4618','NYL400',9);

1 row created.

SQL> INSERT INTO flights VALUES ('VS-26','NYL400',8);

1 row created.

SQL> INSERT INTO flights VALUES ('AF-23','NYP401',10);

1 row created.

SQL> INSERT INTO flights VALUES ('AF-11','NYP401',10);

1 row created.

SQL> INSERT INTO flights VALUES ('RJ-7056','NYP401',8);

1 row created.

SQL> INSERT INTO flights values('AF-12','LNY107',10);

1 row created.

SQL>
SQL>
SQL> -- Populating Fl_schedule relation
SQL> --fl_schedule(flno, departs, dtime, arrives, atime, price)
SQL>
SQL> INSERT INTO fl_schedule VALUES ('9E-3851','12-apr-2005',0710,'12-apr-2005',0800,120.40);

1 row created.

SQL> INSERT INTO fl_schedule VALUES ('CX-7520','12-apr-2005',0730,'12-apr-2005',0840,225.43);

1 row created.

```
SQL> INSERT INTO fl_schedule VALUES ('JJ-7456','12-apr-2005',0930,'12-
apr-2005',1240,235.98);

1 row created.

SQL> INSERT INTO fl_schedule VALUES ('WS-5060','12-apr-2005',0930,'12-
apr-2005',1042,227.60);

1 row created.

SQL> INSERT INTO fl_schedule VALUES ('AI-7205','12-apr-2005',1010,'13-
apr-2005',1850,785.19);

1 row created.

SQL> INSERT INTO fl_schedule VALUES ('CY-1846','12-apr-2005',1040,'13-
apr-2005',0920,250.50);

1 row created.

SQL> INSERT INTO fl_schedule VALUES ('DL-3402','12-apr-2005',1140,'12-
apr-2005',1220,116.50);

1 row created.

SQL> INSERT INTO fl_schedule VALUES ('AS-5958','12-apr-2005',1210,'14-
apr-2005',1300,220.15);

1 row created.

SQL> INSERT INTO fl_schedule VALUES ('QF-3045','12-apr-2005',1320,'12-
apr-2005',1440,227.60);

1 row created.

SQL> INSERT INTO fl_schedule VALUES ('9E-3749','12-apr-2005',1940,'14-
apr-2005',2020,170.40);

1 row created.

SQL> INSERT INTO fl_schedule VALUES ('G7-3664','13-apr-2005',0535,'13-
apr-2005',0610,112.45);

1 row created.

SQL> INSERT INTO fl_schedule VALUES ('WN-484','13-apr-2005',0800,'13-
apr-2005',0935,220.98);

1 row created.

SQL> INSERT INTO fl_schedule VALUES ('HA-3','13-apr-2005',1230,'13-
apr-2005',1555,375.23);

1 row created.

SQL> INSERT INTO fl_schedule VALUES ('AS-5062','13-apr-2005',2010,'14-
apr-2005',2100,120.11);

1 row created.

SQL> INSERT INTO fl_schedule VALUES ('VA-2','13-apr-2005',2030,'15-
apr-2005',0430,1300.50);
```

1 row created.

SQL> INSERT INTO fl_schedule VALUES ('A5-3376','13-apr-2005',2030,'13-apr-2005',2150,220.98);

1 row created.

SQL> INSERT INTO fl_schedule VALUES ('FX-2351','14-apr-2005',0810,'14-apr-2005',0900,208.98);

1 row created.

SQL> INSERT INTO fl_schedule VALUES ('AF-23','14-apr-2005',1020,'15-apr-2005',1210,320.70);

1 row created.

SQL> INSERT INTO fl_schedule VALUES ('B6-474','14-apr-2005',1710,'14-apr-2005',2120,261.56);

1 row created.

SQL> INSERT INTO fl_schedule VALUES ('G7-6205','22-apr-2005',1725,'22-apr-2005',1850,202.34);

1 row created.

SQL> INSERT INTO fl_schedule VALUES ('VA-6551','14-apr-2005',2230,'16-apr-2005',0610,1278.56);

1 row created.

SQL> INSERT INTO fl_schedule VALUES ('9E-3851','15-apr-2005',1035,'15-apr-2005',1140,120.40);

1 row created.

SQL> INSERT INTO fl_schedule VALUES ('HA-1','15-apr-2005',1110,'15-apr-2005',1445,375.23);

1 row created.

SQL> INSERT INTO fl_schedule VALUES ('BA-178','15-apr-2005',1140,'16-apr-2005',1020,250.50);

1 row created.

SQL> INSERT INTO fl_schedule VALUES ('SQ-11','15-apr-2005',1230,'16-apr-2005',2055,780.99);

1 row created.

SQL> INSERT INTO fl_schedule VALUES ('JJ-2482','15-apr-2005',1230,'15-apr-2005',1540,235.98);

1 row created.

SQL> INSERT INTO fl_schedule VALUES ('MQ-4477','15-apr-2005',1510,'15-apr-2005',1600,180.56);

1 row created.

SQL> INSERT INTO fl_schedule VALUES ('A5-3246','15-apr-2005',1810,'15-apr-2005',1900,202.45);

1 row created.

SQL> INSERT INTO fl_schedule VALUES ('RP-5018','15-apr-2005',2100,'15-apr-2005',2155,225.45);

1 row created.

SQL> INSERT INTO fl_schedule VALUES ('WS-5060','16-apr-2005',0930,'16-apr-2005',1042,227.60);

1 row created.

SQL> INSERT INTO fl_schedule VALUES ('WN-484','16-apr-2005',0940,'16-apr-2005',1110,220.98);

1 row created.

SQL> INSERT INTO fl schedule VALUES ('WN-434','16-apr-2005',1410,'16-apr-2005',1530,225.10);

1 row created.

SQL> INSERT INTO fl_schedule VALUES ('MH-93','17-apr-2005',0440,'18-apr-2005',1315,783.30);

1 row created.

SQL> INSERT INTO fl_schedule VALUES ('G7-3664','17-apr-2005',0725,'17-apr-2005',0815,112.45);

1 row created.

SQL> INSERT INTO fl_schedule VALUES ('CX-7520','17-apr-2005',0730,'17-apr-2005',0840,225.43);

1 row created.

SQL> INSERT INTO fl_schedule VALUES ('AF-11','17-apr-2005',1340,'18-apr-2005',1530,320.70);

1 row created.

SQL> INSERT INTO fl schedule VALUES ('9E-3622','17-apr-2005',1655,'17-apr-2005',1750,118.40);

1 row created.

SQL> INSERT INTO fl_schedule VALUES ('EV-5134','17-apr-2005',2135,'17-apr-2005',2240,202.34);

1 row created.

SQL> INSERT INTO fl_schedule VALUES ('B6-482','18-apr-2005',0330,'18-apr-2005',0740,261.56);

1 row created.

SQL> INSERT INTO fl_schedule VALUES ('DL-3402','18-apr-2005',1140,'18-apr-2005',1220,116.50);

1 row created.

SQL> INSERT INTO fl_schedule VALUES ('IB-4618','18-apr-2005',1310,'19-

apr-2005',1150,250.50);

1 row created.

SQL> INSERT INTO fl_schedule VALUES ('UA-1428','18-apr-2005',1420,'18-apr-2005',1740,425.38);

1 row created.

SQL> INSERT INTO fl_schedule VALUES ('MQ-4565','18-apr-2005',1810,'18-apr-2005',1900,180.56);

1 row created.

SQL> INSERT INTO fl_schedule VALUES ('JJ-7456','19-apr-2005',0930,'19-apr-2005',1240,235.98);

1 row created.

SQL> INSERT INTO fl_schedule VALUES ('WN-484','19-apr-2005',1000,'19-apr-2005',1120,220.98);

1 row created.

SQL> INSERT INTO fl_schedule VALUES ('QF-3045','19-apr-2005',1320,'19-apr-2005',1440,227.60);

1 row created.

SQL> INSERT INTO fl_schedule VALUES ('WS-5060','20-apr-2005',0930,'20-apr-2005',1042,227.60);

1 row created.

SQL> INSERT INTO fl_schedule VALUES ('RJ-7056','20-apr-2005',1810,'21-apr-2005',2020,320.70);

1 row created.

SQL> INSERT INTO fl_schedule VALUES ('FX-2351','21-apr-2005',0810,'21-apr-2005',0900,208.98);

1 row created.

SQL> INSERT INTO fl_schedule VALUES ('AF-23','21-apr-2005',1020,'22-apr-2005',1210,320.70);

1 row created.

SQL> INSERT INTO fl_schedule VALUES ('VS-26','21-apr-2005',1340,'22-apr-2005',1230,250.50);

1 row created.

SQL> INSERT INTO fl_schedule VALUES ('VA-6551','21-apr-2005',2230,'23-apr-2005',0610,1278.56);

1 row created.

SQL> INSERT INTO fl_schedule VALUES ('G7-3664','22-apr-2005',0535,'22-apr-2005',0610,112.45);

1 row created.

```
SQL> INSERT INTO fl_schedule VALUES ('CX-7520','22-apr-2005',0730,'22-
apr-2005',0840,225.43);

1 row created.

SQL> INSERT INTO fl_schedule VALUES ('SN-8814','22-apr-2005',1030,'22-
apr-2005',1335,245);

1 row created.

SQL> INSERT INTO fl_schedule VALUES ('WN-484','22-apr-2005',1200,'22-
apr-2005',1325,220.98);

1 row created.

SQL> INSERT INTO fl_schedule VALUES ('JJ-2482','22-apr-2005',1230,'22-
apr-2005',1540,235.98);

1 row created.

SQL> INSERT INTO fl_schedule VALUES ('WN-434','22-apr-2005',1540,'22-
apr-2005',1700,225.10);

1 row created.

SQL> INSERT INTO fl_schedule VALUES ('B6-474','22-apr-2005',1710,'22-
apr-2005',2120,261.56);

1 row created.

SQL> INSERT INTO fl_schedule VALUES ('A5-3246','22-apr-2005',1810,'22-
apr-2005',1900,202.45);

1 row created.

SQL> INSERT INTO fl_schedule values('AF-12','22-apr-05',1245,'22-
apr-05',1850,450.25);

1 row created.

SQL>
SQL> --***************************END OF INSERT***************************
SQL>
SQL> REM:***************************ADVANCED DML: Nested Queries, Joins, Set
Operations***************************
SQL>
SQL> REM:1. Display the flight number,departure date and time of a flight, its
route details and aircraft
SQL> REM:   name of type either Schweizer or Piper that departs during 8.00 PM
and 9.00 PM.
SQL>
SQL> SELECT fs.flno, fs.departs, fs.dtime, r.routeid, r.orig_airport,
r.dest_airport, r.distance, a.aname
  2  FROM fl_schedule fs
  3  JOIN flights f
  4  ON(fs.flno = f.flightno)
  5  JOIN routes r
  6  ON(f.rid = r.routeid)
  7  JOIN aircraft a
  8  ON(f.aid = a.aid)
  9  WHERE (a.type='Schweizer' OR a.type='Piper') AND fs.dtime BETWEEN 2000
  AND 2100;

FLNO    DEPARTS        DTIME ROUTEI ORIG_AIRPORT      DEST_AIRPORT
```

```
DISTANCE ANAME
------- -------- --------- ------ ------------------- --------------------
---------- -----------------------------
AS-5062 13-APR-05       2010 MM203  Madison             Minneapolis
247 Piper PA-46 Meridian
RP-5018 15-APR-05       2100 MC201  Madison             Chicago
150 Schweizer 2-33

SQL>
SQL> REM:2. For all the routes, display the flight number, origin and
destination airport, if a flight is
SQL> REM:   assigned for that route.
SQL>
SQL> SELECT f.flightno, r.orig_airport, r.dest_airport
  2  FROM flights f
  3  JOIN routes r
  4  ON(f.rid = r.routeid);

FLIGHTN ORIG AIRPORT         DEST AIRPORT
------- ------------------- --------------------
9E-3749 Detroit             Montreal
MQ-4477 Detroit             New York
MQ-4565 Detroit             New York
CX-7520 Los Angeles         Dallas
WS-5060 Los Angeles         Dallas
QF-3045 Los Angeles         Dallas
JJ-7456 Los Angeles         Washington D.C.
JJ-2482 Los Angeles         Washington D.C.
SN-8814 Los Angeles         Washington D.C.
WN-484  Los Angeles         Chicago
WN-434  Los Angeles         Chicago

FLIGHTN ORIG_AIRPORT        DEST_AIRPORT
------- ------------------- --------------------
B6-474  Los Angeles         Boston
B6-482  Los Angeles         Boston
VA-6551 Los Angeles         Sydney
VA-2    Los Angeles         Sydney
DJ-2    Los Angeles         Sydney
SQ-11   Los Angeles         Tokyo
AI-7205 Los Angeles         Tokyo
MH-93   Los Angeles         Tokyo
HA-3    Los Angeles         Honolulu
HA-1    Los Angeles         Honolulu
UA-1428 Los Angeles         Honolulu

FLIGHTN ORIG_AIRPORT        DEST_AIRPORT
------- ------------------- --------------------
A5-3376 Chicago             Los Angeles
A5-3246 Chicago             New York
9E-3851 Madison             Detroit
9E-3622 Madison             Detroit
G7-6205 Madison             New York
EV-5134 Madison             New York
RP-5018 Madison             Chicago
G7-3664 Madison             Chicago
FX-2351 Madison             Pittsburgh
AS-5958 Madison             Minneapolis
AS-5062 Madison             Minneapolis

FLIGHTN ORIG_AIRPORT        DEST_AIRPORT
------- ------------------- --------------------
DL-3402 Pittsburgh          New York
CY-1846 New York            London
```

```
BA-178  New York            London
IB-4618 New York            London
VS-26   New York            London
AF-23   New York            Paris
AF-11   New York            Paris
RJ-7056 New York            Paris
AF-12   Los Angeles         New York


42 rows selected.

SQL>
SQL> REM:3. For all aircraft with cruisingrange over 5,000 miles, find the
name of the aircraft and the
SQL> REM:   average salary of all pilots certified for this aircraft.
SQL>
SQL> SELECT a.aname, AVG(salary)
  2  FROM aircraft a
  3  JOIN certified c
  4  ON(a.aid = c.aid)
  5  JOIN employee e
  6  ON(e.eid = c.eid)
  7  WHERE a.cruisingrange > 5000
  8  GROUP BY a.aname;

ANAME                        AVG(SALARY)
---------------------------- -----------
Airbus A340-300               217597.667
Boeing 777-300                257973.333
Boeing 747-400                 244776.75
Boeing 767-400ER                  209557
Lockheed L1011 Tristar         242685.75

SQL>
SQL> REM: 4. Show the employee details such as id, name and salary who are not
pilots and whose salary
SQL> REM:    is more than the average salary of pilots.
SQL>
SQL> SELECT e.eid, e.ename, e.salary
  2  FROM employee e
  3  WHERE e.eid NOT IN
  4  (SELECT eid FROM certified)
  5  AND e.salary > (SELECT AVG(e.salary) FROM employee e JOIN certified c
  ON(c.eid = e.eid));

       EID ENAME                          SALARY
---------- ------------------------------ ----------
 486512566 David Anderson                 743001

SQL>
SQL> REM: 5. Find the id and name of pilots who were certified to operate some
aircrafts but at least one
SQL> REM:    of that aircraft is not scheduled from any routes.
SQL>
SQL> SELECT DISTINCT e.eid, e.ename
  2  FROM employee e, certified c
  3  WHERE e.eid=c.eid AND NOT EXISTS (SELECT * FROM flights f WHERE
  c.aid=f.aid);


       EID ENAME
---------- ------------------------------
 269734834 George Wright
 356187925 Robert Brown
  90873519 Elizabeth Taylor
 574489456 William Jones
```

```
 567354612 Lisa Walker
 556784565 Mark Young
 573284895 Eric Cooper
 390487451 Lawrence Sperry
 142519864 Betty Adams


9 rows selected.

SQL>
SQL> REM: 6. Display the origin and destination of the flights having at least
three departures with
SQL> REM:    maximum distance covered
SQL>
SQL> SELECT DISTINCT(orig_airport), dest_airport
  2  FROM routes
  3  JOIN flights
  4  ON (routeid=rid)
  5  WHERE distance = (SELECT MAX(distance) FROM routes HAVING COUNT(*) > 3);

ORIG_AIRPORT         DEST_AIRPORT
-------------------- --------------------
Los Angeles          Sydney


SQL>
SQL> REM: 7. Display name and salary of pilot whose salary is more than the
average salary of any pilots
SQL> REM:    for each route other than flights originating from Madison
airport.
SQL>
SQL> SELECT distinct ename,salary
  2  FROM employee e
  3  JOIN certified c21
  4  USING(eid)
  5  JOIN flights f1
  6  USING(aid)
  7  JOIN routes r1
  8  ON(rid=routeid)
  9  WHERE salary > ( SELECT avg(salary)
 10  FROM employee e2
 11  JOIN certified c2
 12  USING(eid)
 13  JOIN flights f2
 14  USING(aid)
 15  JOIN routes r2
 16  ON(rid=routeid)
 17  WHERE r2.routeid=r1.routeid)
 18  AND orig_airport<>'Madison';

ENAME                          SALARY
------------------------------ ----------
George Wright                  289950
Betty Adams                    227489
Angela Martinez                212156
Lawrence Sperry                212156
Joseph Thompson                212156
Mark Young                     205187
Lisa Walker                    256481


7 rows selected.

SQL>
SQL> REM: 8. Display the flight number, aircraft type, source and destination
airport of the aircraft having
SQL> REM:    maximum number of flights to Honolulu.
```

```
SQL>
SQL> SELECT fl.flno, a.type, r.orig_airport, r.dest_airport
  2  FROM fl_schedule fl, aircraft a, flights f, routes r
  3  WHERE a.aid=f.aid AND f.flightno=fl.flno AND f.rid=r.routeid
  4  AND r.dest_airport='Honolulu';

FLNO    TYPE       ORIG_AIRPORT         DEST_AIRPORT
------- ---------- -------------------- --------------------
HA-3    Airbus     Los Angeles          Honolulu
HA-1    Airbus     Los Angeles          Honolulu
UA-1428 Boeing     Los Angeles          Honolulu

SQL>
SQL> REM: 9. Display the pilot(s) who are certified exclusively to pilot all
aircraft in a type.
SQL>
SQL> SELECT distinct eid, ename,type
  2  FROM employee
  3  JOIN certified USING(eid)
  4  JOIN aircraft USING(aid)
  5  WHERE eid IN ( SELECT c.eid
  6  FROM certified c
  7  JOIN aircraft a USING(aid)
  8  WHERE c.eid IN ( SELECT c1.eid
  9  FROM certified c1
 10  JOIN aircraft a1 USING(aid)
 11  GROUP BY c1.eid
 12  HAVING(count(distinct a1.type))=1)
 13  GROUP BY c.eid,a.type
 14  HAVING count(*)=(SELECT COUNT (a1.aid)
 15  FROM aircraft a1
 16  WHERE a1.type=a.type)
 17     );

       EID ENAME                          TYPE
---------- ------------------------------ ----------
 574489457 Milo Brooks                    Schweizer
 390487451 Lawrence Sperry                Airbus
  90873519 Elizabeth Taylor               Saab
 548977562 William Ward                   Piper
 356187925 Robert Brown                   Saab
 287321212 Michael Miller                 Piper

6 rows selected.

SQL>
SQL> REM: 10. Name the employee(s) who is earning the maximum salary among the
airport having
SQL> REM: maximum number of departures.
SQL>
SQL> SELECT eid,ename,salary
  2  FROM employee e
  3  WHERE salary = (SELECT max(salary)
  4  FROM employee
  5  JOIN certified c USING (eid)
  6  JOIN flights f USING (aid)
  7  JOIN routes r ON (rid=routeid)
  8  WHERE orig_airport = (SELECT orig_airport
  9  FROM routes r
 10  JOIN flights f ON (routeid=rid)
 11  GROUP BY orig_airport
 12  HAVING count(*) = (SELECT max(count(*))
 13  FROM routes r
 14  JOIN flights f ON (routeid=rid)
```

23

```
 15  GROUP BY orig_airport)));

      EID ENAME                              SALARY
---------- ----------------------------- ----------
 269734834 George Wright                     289950

SQL>
SQL> REM: 11. Display the departure chart as follows:
SQL> REM:      flight number, departure(date,airport,time), destination
airport, arrival time, aircraft name
SQL> REM:      for the flights from New York airport during 15 to 19th April
2005. Make sure that the route
SQL> REM:      contains at least two flights in the above specified condition.
SQL>
SQL> SELECT flno, departs, orig_airport, dtime, dest_airport, atime, aname
  2  FROM flights f
  3  JOIN aircraft a
  4  ON(f.aid = a.aid)
  5  JOIN fl_schedule fl
  6  ON(f.flightno = fl.flno)
  7  JOIN routes r
  8  ON(r.routeid=f.rid)
  9  WHERE orig_airport='New York'
 10  AND departs BETWEEN TO_DATE('15-04-2005', 'dd-mm-yyyy') AND
 TO_DATE('19-04-2005', 'dd-mm-yyyy');

FLNO    DEPARTS   ORIG_AIRPORT              DTIME DEST_AIRPORT
ATIME ANAME
------- --------- -------------------- ---------- --------------------
---------- -----------------------------
IB-4618 18-APR-05 New York                   1310 London
1150 Lockheed L1011 Tristar
BA-178  15-APR-05 New York                   1140 London
1020 Boeing 757-300
AF-11   17-APR-05 New York                   1340 Paris
1530 Boeing 757-300

SQL>
SQL> REM: Use SET operators (any one operator) for each of the following:
SQL>
SQL> REM: 12. A customer wants to travel from Madison to New York with no more
than two changes of
SQL> REM:      flight. List the flight numbers from Madison if the customer
wants to arrive in New York by
SQL> REM:      6.50 p.m.
SQL>
SQL> SELECT f.flightno
  2  FROM flights f
  3  WHERE f.flightno
  4  IN (( SELECT fl.flno
  5  FROM fl_schedule fl, flights f, routes r
  6  WHERE fl.flno = f.flightno AND f.rid = r.routeid
  7  AND r.orig_airport = 'Madison' AND r.dest_airport = 'New York'
  8  AND fl.atime < 1850)
  9        UNION
 10      (SELECT fl1.flno
 11  FROM fl_schedule fl1, fl_schedule fl2, flights f, routes r1, routes r2
 12  WHERE fl1.flno=f.flightno AND f.rid=r1.routeid
 13  AND r1.orig_airport = 'Madison'
 14  AND r1.dest_airport <> 'New York'
 15  AND r1.dest_airport = r2.orig_airport
 16  AND r2 .dest_airport = 'New York'
 17  AND fl2.dtime > fl1.atime
 18  AND fl2.atime < 1850 )
```

```
19   UNION
20       (SELECT fl1.flno
21   FROM fl_schedule fl1, fl_schedule fl2, fl_schedule fl3, flights f, routes
r1, routes r2, routes r3
22   WHERE fl1.flno=f.flightno AND f.rid=r1.routeid
23   AND r1.orig_airport = 'Madison'
24   AND r1.dest_airport = r2.orig_airport
25   AND r2.dest_airport = r3.orig_airport
26   AND r3.dest_airport = 'New York'
27   AND r1.dest_airport <> 'New York'
28   AND r2.dest_airport <> 'New York'
29   AND fl2.dtime > fl1.atime
30   AND fl3.dtime > fl2.atime
31   AND fl3.atime < 1850 ));

FLIGHTN
-------
9E-3622
9E-3851
AS-5062
AS-5958
FX-2351
G7-3664
RP-5018

7 rows selected.

SQL>
SQL> REM: 13. Display the id and name of employee(s) who are not pilots.
SQL>
SQL> SELECT eid, ename FROM employee
  2  MINUS
  3  SELECT eid, ename FROM employee WHERE eid IN (SELECT eid FROM certified);

       EID ENAME
---------- ------------------------------
  15645489 Donald King
 248965255 Barbara Wilson
 254099823 Patricia Jones
 310454877 Chad Stewart
 348121549 Haywood Kelly
 486512566 David Anderson
 489221823 Richard Jackson
 489456522 Linda Davis
 552455348 Dorthy Lewis
 619023588 Jennifer Thomas

10 rows selected.

SQL>
SQL> REM: 14. Display the id and name of employee(s) who pilots the aircraft
from Los Angels and Detroit
SQL> REM:     airport.
SQL>
SQL> SELECT e.eid, e.ename FROM employee e, certified c, aircraft a, flights
f, routes r
  2  WHERE e.eid=c.eid AND c.aid = a.aid
  3  AND a.aid = f.aid AND f.rid=r.routeid
  4  AND r.orig_airport='Los Angeles'
  5  INTERSECT
  6  SELECT e.eid, e.ename FROM employee e, certified c, aircraft a, flights
  f, routes r
  7  WHERE e.eid=c.eid AND c.aid = a.aid
  8  AND a.aid = f.aid AND f.rid=r.routeid
```

```
  9  AND r.orig_airport='Detroit';

       EID ENAME
---------- -----------------------------
 159542516 William Moore
 269734834 George Wright
 556784565 Mark Young
 567354612 Lisa Walker
 573284895 Eric Cooper

SQL> spool off
```