```
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> set echo on:
SP2-0158: unknown SET option ":"
SQL> set serveroutput on format wrapped
SQL> -- To prevent dbms_output from trimming leading spaces
SQL>
SQL> @z:/air_main.sql
SP2-0310: unable to open file "z:/air_main.sql"
SQL>
SQL> REM: ***********************************************************Ex7 -
PL/SQL TRIGGERS**********************************************************
SQL> REM: INTEGRITY THRUOGH TRIGGERS
SQL>
SQL> REM: 1. The date of arrival should be always
SQL> REM:later than or on the same date of departure.
SQL>
SQL> CREATE OR REPLACE TRIGGER arrives_trg
  2  BEFORE INSERT OR UPDATE OF arrives
  3  ON fl_schedule
  4  FOR EACH ROW
  5  WHEN (NEW.arrives < NEW.departs)
  6  BEGIN
  7  raise_application_error(-20001, 'The date of arrival should be always
```

```
   later than or on the same date of departure !');
   8  END;
   9  /

Trigger created.

SQL>
SQL> --FIRES TRIGGER
SQL> INSERT INTO fl_schedule VALUES('WN-484', '13-SEP-2005', 800, '12-
SEP-2005', 935, 220.98);
INSERT INTO fl_schedule VALUES('WN-484', '13-SEP-2005', 800, '12-SEP-2005',
935, 220.98)
             *
ERROR at line 1:
ORA-20001: The date of arrival should be always later than or on the same date
of departure !
ORA-06512: at "NIVE.ARRIVES_TRG", line 2
ORA-04088: error during execution of trigger 'NIVE.ARRIVES_TRG'


SQL>
SQL> --DOESN'T FIRE TRIGGER
SQL>
SQL> /*
SQL> INSERT INTO fl schedule VALUES('WN-484', '11-SEP-2005', 800, '12-
SEP-2005', 935, 220.98);
SQL> SELECT * FROM fl_schedule WHERE flno='WN-484';
SQL> */
SQL>
SQL> REM: 2. Flight number CX-7520 is scheduled only on
SQL> REM:     Tuesday, Friday and Sunday.
SQL>
SQL> CREATE OR REPLACE TRIGGER fl_trg2
  2  BEFORE INSERT OR UPDATE OF departs
  3  ON fl_schedule
  4  FOR EACH ROW
  5  WHEN (to_char(NEW.departs,'DY') NOT IN ('TUE','FRI','SUN'))
  6  BEGIN
  7  raise_application_error(-20002, 'Flight number CX-7520 should be
  scheduled only on Tuesday, Friday and Sunday !');
  8  END;
  9  /

Trigger created.

SQL>
SQL> -- FIRES TRIGGER
SQL> INSERT INTO fl_schedule VALUES('CX-7520', '12-SEP-2005', 800, '12-
SEP-2005', 935, 220.98);
INSERT INTO fl_schedule VALUES('CX-7520', '12-SEP-2005', 800, '12-SEP-2005',
935, 220.98)
             *
ERROR at line 1:
ORA-20002: Flight number CX-7520 should be scheduled only on Tuesday, Friday
and Sunday !
ORA-06512: at "NIVE.FL_TRG2", line 2
ORA-04088: error during execution of trigger 'NIVE.FL_TRG2'


SQL>
SQL> -- DOESN'T FIRE TRIGGER
SQL> /*
SQL> INSERT INTO fl_schedule VALUES('CX-7520', '11-SEP-2005', 800, '12-
SEP-2005', 935, 220.98);
```

```
SQL> SELECT * FROM fl_schedule WHERE flno='CX-7520';
SQL> */
SQL>
SQL> REM: 3. An aircraft is assigned to a flight only
SQL> REM:    if its cruising range is more than the
SQL> REM:    distance of the flight's route.
SQL>
SQL> CREATE OR REPLACE TRIGGER cruising_trg
  2  BEFORE INSERT OR UPDATE OF flightno
  3  ON flights
  4  FOR EACH ROW
  5  DECLARE
  6  r_aircraft aircraft%ROWTYPE;
  7  r_routes routes%ROWTYPE;
  8  BEGIN
  9  SELECT * INTO r_aircraft
 10  FROM aircraft
 11  WHERE aid=:NEW.aid;
 12
 13  SELECT * INTO r_routes
 14  FROM routes
 15  WHERE routeid=:NEW.rid;
 16
 17  IF (r_aircraft.cruisingrange < r_routes.distance) THEN
 18  raise application error(-20003, 'Cruising range is more than the distance
 of the flight route !');
 19  END IF;
 20  END;
 21  /

Trigger created.

SQL>
SQL> -- FIRES TRIGGER
SQL> INSERT INTO flights VALUES('NIV-927', 'LW100', 4);
INSERT INTO flights VALUES('NIV-927', 'LW100', 4)
            *
ERROR at line 1:
ORA-20003: Cruising range is more than the distance of the flight route !
ORA-06512: at "NIVE.CRUISING_TRG", line 14
ORA-04088: error during execution of trigger 'NIVE.CRUISING_TRG'


SQL>
SQL> --DOESN'T FIRE TRIGGER
SQL> /*
SQL> INSERT INTO flights VALUES('NIV-927', 'LW100', 10);
SQL> SELECT * FROM flights WHERE flightno='NIV-927';
SQL> SELECT * FROM aircraft WHERE aid=10;
SQL> SELECT * FROM routes WHERE routeid='LW100';
SQL> */
SQL> spool off
```