**UCS1412 – Database Lab**

**Assignment – 3**

**NAME:** Rahul Ram M

**ROLL NO:** 185001121

@E:/air\_all

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 x.flightno,a.departs,a.dtime,b.orig\_airport,b.dest\_airport,c.aname,c.type

2 from flights x,fl\_schedule a,routes b,aircraft c

3 where x.flightno=a.flno and x.rid=b.routeid and x.aid=c.aid and c.type in('Schweizer','Piper') and a.dtime between 2000 and 2100;

rows will be truncated

FLIGHTN DEPARTS DTIME ORIG\_AIRPORT DEST\_AIRPORT ANAME

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RP-5018 15-APR-05 2100 Madison Chicago Schweizer

AS-5062 13-APR-05 2010 Madison Minneapolis Piper PA-

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 a.flightno,b.orig\_airport,b.dest\_airport

2 from flights a,routes b

3 where a.rid=b.routeid;

FLIGHTN ORIG\_AIRPORT DEST\_AIRPORT

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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

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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

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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

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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(b.salary) as average\_salary

2 from aircraft a,employee b,certified c

3 where a.aid=c.aid and b.eid=c.eid and a.cruisingrange>5000

4 group by a.aname;

ANAME AVERAGE\_SALARY

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Airbus A340-300 217597.667

Boeing 777-300 257973.333

Boeing 747-400 244776.75

Lockheed L1011 Tristar 242685.75

Boeing 767-400ER 209557

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 eid,ename,salary

2 from employee

3 where eid not in(select eid from certified) and salary>(select avg(a.salary) from employee a,certified b where a.eid=b.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 a.eid,a.ename

2 from employee a,certified b,aircraft c

3 where a.eid=b.eid and b.aid=c.aid and b.aid not in(select aid from flights);

EID ENAME

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567354612 Lisa Walker

390487451 Lawrence Sperry

356187925 Robert Brown

142519864 Betty Adams

269734834 George Wright

269734834 George Wright

90873519 Elizabeth Taylor

556784565 Mark Young

573284895 Eric Cooper

574489456 William Jones

10 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 a.orig\_airport,a.dest\_airport

2 from routes a,flights b

3 where a.routeid=b.rid and distance=(select max(distance) from routes)

4 group by orig\_airport,dest\_airport

5 having count(\*)>=3;

ORIG\_AIRPORT DEST\_AIRPORT

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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 ename,salary

2 from employee

3 where salary>(select avg(a.salary) from employee a,certified b,routes c,flights d where a.eid=b.eid and b.aid=d.aid and c.routeid=d.rid and c.orig\_airport!='Madison');

ENAME SALARY

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Lisa Walker 256481

Lawrence Sperry 212156

Angela Martinez 212156

Joseph Thompson 212156

Betty Adams 227489

George Wright 289950

David Anderson 743001

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 a.flightno,b.type,c.orig\_airport,c.dest\_airport

2 from flights a,aircraft b,routes c

3 where b.aid=a.aid and c.routeid=a.rid and c.dest\_airport='Honolulu'

4 and a.flightno in(select a.flightno from flights a,aircraft b,routes c where b.aid=a.aid and c.routeid=a.rid and c.dest\_airport='Honolulu'

5 group by a.flightno

6 having count(\*)=(select max(count(\*)) from flights a,aircraft b,routes c

7 where b.aid=a.aid and c.routeid=a.rid and c.dest\_airport='Honolulu' group by a.flightno));

FLIGHTN TYPE ORIG\_AIRPORT DEST\_AIRPORT

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HA-3 Airbus Los Angeles Honolulu

UA-1428 Boeing Los Angeles Honolulu

HA-1 Airbus 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 a.eid,a.ename from employee a,certified b,aircraft c

2 where a.eid=b.eid and b.aid=c.aid and a.eid in(select a.eid from

3 employee a,certified b,aircraft c where a.eid=b.eid and b.aid=c.aid

4 group by a.eid

5 having count(distinct(c.type))=1)

6 group by a.eid,a.ename,c.type

7 having count(\*)=(select count(a1.aid) from aircraft a1 where a1.type=c.type);

EID ENAME

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390487451 Lawrence Sperry

574489457 Milo Brooks

90873519 Elizabeth Taylor

548977562 William Ward

356187925 Robert Brown

287321212 Michael Miller

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 ename,eid,salary from employee

2 where salary=(select max(a.salary) from employee a,certified b,routes c,flights d

3 where a.eid=b.eid and d.aid=b.aid and c.routeid=d.rid

4 group by orig\_airport

5 having orig\_airport=(select a.orig\_airport from routes a,flights b

6 where a.routeid=b.rid group by a.orig\_airport having count(\*)=(select max(count(\*))

7 from routes a,flights b where a.routeid=b.rid group by a.orig\_airport)));

ENAME EID SALARY

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George Wright 269734834 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 a.flno,a.departs,a.dtime,a.arrives,a.atime,b.flightno,c.dest\_airport,d.aname

2 from fl\_schedule a,flights b,routes c,aircraft d

3 where a.flno=b.flightno and b.rid=c.routeid and d.aid=b.aid and orig\_airport='New York' and departs between '15-APR-05' AND '19-APR-05' and (select count(\*) from (select a.flno

4 from fl\_schedule a,flights b,routes c,aircraft d

5 where a.flno=b.flightno and b.rid=c.routeid and d.aid=b.aid and orig\_airport='New York'))>2;

FLNO DEPARTS DTIME ARRIVES ATIME FLIGHTN DEST\_AIRPORT A

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BA-178 15-APR-05 1140 16-APR-05 1020 BA-178 London B

IB-4618 18-APR-05 1310 19-APR-05 1150 IB-4618 London L

AF-11 17-APR-05 1340 18-APR-05 1530 AF-11 Paris B

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 a.flno

2 from fl\_schedule a,flights b,routes c

3 where a.flno=b.flightno and b.rid=c.routeid and c.orig\_airport='Madison' and c.dest\_airport='New York' and a.dtime<1850

4 UNION

5 select a.flno

6 from fl\_schedule a,flights b,routes c,routes d,fl\_schedule x,flights y

7 where a.flno=b.flightno and x.flno=y.flightno and b.rid=c.routeid and y.rid=d.routeid and c.orig\_airport='Madison' and c.dest\_airport=d.orig\_airport and d.dest\_airport='New York' and d.orig\_airport<>'New York' and a.atime<x.dtime and x.atime<1850;

FLNO

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9E-3851

FX-2351

G7-6205

SQL>

SQL> REM 13. Display the id and name of employee(s) who are not pilots.

SQL>

SQL> select eid,ename

2 from employee

3 where eid in(select eid from employee minus select eid from certified);

EID ENAME

---------- ------------------------------

254099823 Patricia Jones

489456522 Linda Davis

489221823 Richard Jackson

310454877 Chad Stewart

552455348 Dorthy Lewis

248965255 Barbara Wilson

348121549 Haywood Kelly

486512566 David Anderson

619023588 Jennifer Thomas

15645489 Donald King

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 distinct a.ename,a.eid

2 from employee a,certified b,routes c,flights d

3 where a.eid=b.eid and c.routeid=d.rid and b.aid=d.aid and c.orig\_airport='Los Angeles'

4 INTERSECT

5 select distinct a.ename,a.eid

6 from employee a,certified b,routes c,flights d

7 where a.eid=b.eid and c.routeid=d.rid and b.aid=d.aid and c.orig\_airport='Detroit'

8 ;

ENAME EID

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Eric Cooper 573284895

George Wright 269734834

Lisa Walker 567354612

Mark Young 556784565

William Moore 159542516

SQL>