

SQL HW#1 I-Wen Chou

SQL> SET ECHO ON

SQL> SET FEEDBACK ON

SQL> SET LINESIZE 255

SQL> SET PAGESIZE 999

SQL> START C:\DBM\SQL_HW#1.txt

SQL>

SQL> --Part I

SQL>

SQL> ALTER TABLE Employee

2 ADD CONSTRAINT Employee_Sup_ID_FK

3 FOREIGN KEY (Sup_ID)

4 REFERENCES Employee (Emp_ID);

Table altered.

SQL>

SQL> ALTER TABLE Employee

2 MODIFY (Dept_ID CONSTRAINT Employee_Dept_ID_nn NOT NULL);

Table altered.

SQL>

SQL> ALTER TABLE Department

2 ADD CONSTRAINT Department_Dept_Mngr_FK

3 FOREIGN KEY (Dept_Mngr)

4 REFERENCES Employee (Emp_ID);

Table altered.

SQL>

SQL> ALTER TABLE Department

2 MODIFY (Dept_mngr CONSTRAINT Department_Dept_mngr_nn NOT NULL);

Table altered.

SQL>

SQL> ALTER TABLE Training

2 ADD CONSTRAINT Training_Crs_Section_Sem_FK

3 FOREIGN KEY (Crs_ID, Section, Sem_Cmpltd)

4 REFERENCES CLASS (Crs_ID, Section, Sem_Cmpltd);

Table altered.

SQL>

SQL> ALTER TABLE Training

2 MODIFY (Emp_ID CONSTRAINT Training_Emp_ID_nn NOT NULL);

Table altered.

SQL>

SQL> ALTER TABLE Training

2 MODIFY (Appr_Date CONSTRAINT Training_Appr_Date_nn NOT NULL);

Table altered.

SQL>

SQL> ALTER TABLE Training

2 MODIFY (Crs_ID CONSTRAINT Training_Crs_ID_nn NOT NULL);

Table altered.

SQL>

SQL> ALTER TABLE Training

2 MODIFY (Section CONSTRAINT Training_Section_nn NOT NULL);

Table altered.

SQL>

SQL> ALTER TABLE Training

2 MODIFY (Sem_Cmpltd CONSTRAINT Training_Sem_Cmpltd_nn NOT NULL);

Table altered.

SQL>

SQL> ALTER TABLE Training

2 MODIFY (ApprovedBy CONSTRAINT Training_ApprovedBy_nn NOT NULL);

Table altered.

SQL>

SQL> ALTER TABLE Class

2 MODIFY (Instr_ID CONSTRAINT Training_Instr_ID_nn NOT NULL);

Table altered.

```

SQL> --FORMAT
SQL> COLUMN Dept_name FORMAT A30
SQL> COLUMN EMPLOYEES FORMAT A40
SQL> COLUMN Grade FORMAT A6
SQL> COLUMN Sem_Cmpltd FORMAT A15
SQL> COLUMN Section FORMAT A10
SQL> =====
SQL> --Part II
SQL> --Q1
SQL> SELECT DISTINCT Emp_ID || ' - ' || Fname || ' - ' || Lname AS EMPLOYEES
  2 FROM Employee e
  3 JOIN Training t
  4 USING (Emp_ID)
  5 WHERE Grade IS NOT NULL
  6 MINUS
  7 SELECT DISTINCT Emp_ID || ' - ' || Fname || ' - ' || Lname AS EMPLOYEES
  8 FROM Employee
  9 JOIN Training
10 USING (Emp_ID)
11 WHERE Grade = ANY('C+', 'C', 'C-', 'B-', 'R');

```

EMPLOYEES

```

162 - Ray - Nelson
171 - Willam - Belli
317 - Steve - Newton
314 - Bob - Gates

```

4 rows selected.

SQL> --=====

SQL> --Q2

```
SQL> SELECT e.Emp_ID, e.Fname, e.Lname
  2  FROM Employee s
  3  JOIN Employee e
  4  ON s.Sup_ID = e.Emp_ID
  5  MINUS
  6  SELECT s.Emp_ID, s.Fname, s.Lname
  7  FROM Employee s
  8  JOIN TRAINING t
  9  ON s.Emp_ID = t.ApprovedBy
 10  Where t.Appr_Date LIKE '%21%';
```

EMP_ID	FNAME	LNAME
400	Amelia	Jones
401	Scott	Harris
225	Stan	Evans
168	Chris	Corman

4 rows selected.

SQL> --=====

SQL> --Q3

```
SQL> SELECT Employee.Emp_ID, Fname, Lname, Course.Crs_Title, TRAINING.Sem_Cmpltd
  2  FROM Employee, TRAINING, Class, Course
  3  WHERE Employee.Emp_ID = TRAINING.Emp_ID
  4  AND TRAINING.Crs_ID = Class.Crs_ID
  5  AND TRAINING.Section = Class.Section
```

```

6 AND TRAINING.Sem_Cmpltd = Class.Sem_Cmpltd
7 AND Class.Crs_ID = Course.Crs_ID
8 AND GRADE = 'R';

```

EMP_ID	FNAME	LNAME	CRS_TITLE	SEM_CMPLTD
128	Pat	Boon	C++	Spr 2017
168	Chris	Corman	Corporate Finance	Fall 2019

2 rows selected.

SQL> =====

SQL> --Q4

```

SQL>
SQL> SELECT e.Emp_ID || ' - ' || e.Fname || ' - ' || e.Lname AS EMPLOYEES, Crs_Title, Tuition, Dept_name
2 FROM Employee e, TRAINING, CLASS, Course, DEPARTMENT
3 WHERE DEPARTMENT.Dept_ID = e.Dept_ID
4 AND e.Emp_ID = TRAINING.Emp_ID
5 AND TRAINING.Crs_ID = Class.Crs_ID
6 AND TRAINING.Section = Class.Section
7 AND TRAINING.Sem_Cmpltd = Class.Sem_Cmpltd
8 AND CLASS.Crs_ID = Course.Crs_ID
9 AND Crs_Title LIKE '%ing%'
10 AND Tuition < 3000
11 ORDER BY Dept_name, e.Lname;

```

EMPLOYEES	CRS_TITLE	TUITION	DEPT_NAME

128 - Pat - Boon	Accounting	2500	Executive
137 - Jim - Hall	Mobile Computing	2500	IT
162 - Ray - Nelson	Mobile Computing	2500	IT
153 - Adam - Roditi	Mobile Computing	2500	IT
171 - Willam - Belli	Marketing	2000	Sales
100 - Mary - Krall	Mobile Computing	2500	Sales
172 - Lisa - Swift	Marketing	2000	Sales

7 rows selected.

SQL> =====

SQL> --Q5

```
SQL> SELECT DISTINCT Instructor.Instr_ID, Instructor.Lname, Instructor.Fname, Specialty, College_Name
2  FROM Course, CLASS, Instructor
3  WHERE CLASS.Crs_ID = Course.Crs_ID
4  AND CLASS.Instr_ID = Instructor.Instr_ID
5  AND(College_Name = 'Oakland'
6  OR Specialty = '%Promgramming%');
```

INSTR_ID	LNAME	FNAME	SPECIALTY	COLLEGE_NAME

503	Miller	Adam	Analytics	Oakland
521	Hall	Steve	Data Mining	Oakland
533	Jones	Carol	Cloud Computing	Oakland

3 rows selected.

SQL> -----

SQL> --Q6

```
SQL> SELECT e.Fname, e.Lname, TRAINING.Section, TRAINING.Sem_Cmpltd, Grade
  2 FROM Employee e, TRAINING, CLASS, Course
  3 WHERE e.Emp_ID = TRAINING.Emp_ID
  4 AND TRAINING.Crs_ID = Class.Crs_ID
  5 AND TRAINING.Section = Class.Section
  6 AND TRAINING.Sem_Cmpltd = Class.Sem_Cmpltd
  7 AND CLASS.Crs_ID = Course.Crs_ID
  8 AND Crs_Title = 'Database Management'
  9 AND TRAINING.Sem_Cmpltd LIKE '%Spr%'
 10 AND Grade = ANY('A+', 'A', 'A-', 'B+', 'B')
 11 ORDER BY Sem_Cmpltd DESC, e.Lname;
```

FNAME	LNAME	SECTION	SEM_CMPLTD	GRADE
Mary	Krall	A	Spr 2020	A+
Jim	Hall	B	Spr 2017	B
Adam	Roditi	B	Spr 2017	B

3 rows selected.

SQL> -----

SQL> --Q7

```
SQL> SELECT DISTINCT Crs_Title, TRAINING.Sem_Cmpltd
  2 FROM Employee e, TRAINING, CLASS, Course, DEPARTMENT
  3 WHERE DEPARTMENT.Dept_ID = e.Dept_ID
  4 AND e.Emp_ID = TRAINING.Emp_ID
  5 AND TRAINING.Crs_ID = CLASS.Crs_ID
```



```
6  AND TRAINING.Section = CLASS.Section
7  AND TRAINING.Sem_Cmpltd = CLASS.Sem_Cmpltd
8  AND CLASS.Crs_ID = Course.Crs_ID
9  AND (TRAINING.Sem_Cmpltd LIKE '%2020%' OR TRAINING.Sem_Cmpltd LIKE '%2021%')
10 AND Dept_name = 'IT'
11 ORDER BY TRAINING.Sem_Cmpltd DESC, Crs_Title;
```

CRS_TITLE	SEM_CMPLTD

Web Applications	Spr 2021
Social Networks	Spr 2020
Social Networks	Fall 2020

3 rows selected.

SQL>

SQL> SPOOL OFF