```
SQL> SET linesize 4000
SQL> SET pagesize 200
SQL> --1.
SQL> clear columns
columns cleared
SQL> column Employee format a20
SQL> column "Skill" format a20
SQL> column "# Trainings" format a10
SQL> column "Most Recent Date" format a20
SQL> column "Months Since Training" format 99999
SQL> column "Skill" format a30
SQL>
SQL> SELECT emp_num
  2         || ': '
  3         || emp_first
  4         || ' '
  5         || emp_last                                    "Employee",
  6         Nvl(description, '--')                         "Skill",
  7         Ltrim(To_char(Count(DISTINCT code)))           "# Trainings",
  8         Ltrim(Nvl(To_char(Max(date_acquired)), '--')) "Most Recent Date",
  9         CASE
 10           WHEN ( ( sysdate - Max(date_acquired) ) / 30.4 ) IS NULL THEN '--'
 11           WHEN ( ( sysdate - Max(date_acquired) ) / 30.4 ) < 0 THEN '0'
 12           ELSE To_char(Trunc(( sysdate - Max(date_acquired) ) / 30.4))
 13         END                                            AS "Months Since Training"
 14  FROM   training
 15         JOIN skill using(code)
 16         RIGHT JOIN employee using (emp_num)
 17  GROUP  BY emp_num,
 18            emp_first,
 19            emp_last,
 20            description;
```

Employee	Skill	# Training	Most Recent Date	Months Since Training
137: Jim Hall	--	0	--	--
400: Amelia Jones	Business Writing	1	04-DEC-18	11
168: Chris Corman	Business Writing	1	12-AUG-16	39
225: Stan Evans	Business Writing	1	30-NOV-15	48
225: Stan Evans	Data Mining	1	05-FEB-19	9
128: Pat Boon	--	0	--	--
401: Scott Harris	Database Design	1	07-DEC-17	23
100: Mary Krall	Database Design	1	08-JAN-18	22
203: Bill Getz	Data Mining	1	02-DEC-13	72
153: Adam Roditi	--	0	--	--
214: Ana Ramos	Data Mining	1	10-DEC-19	0
162: Ray Nelson	Business Writing	1	06-JUL-19	4

12 rows selected.

```
SQL> --2.
SQL> column "Level" format a5
SQL> column "Employee Info" format a50
SQL>
SQL> SELECT Ltrim(LEVEL) AS "Level",
  2         Lpad(' ', 3 * ( LEVEL - 1 ))
  3         || emp_num
  4         ||' : '
  5         || emp_first
  6         || ' '
  7         ||emp_last
  8         || ' | '
  9         || d.name    "Employee Info"
 10  FROM   employee e,
 11         department d
 12  WHERE  e.dept_code = d.dept_code
 13  START WITH emp_num = 400
 14  CONNECT BY PRIOR emp_num = super_id;

Level Employee Info
----- --------------------------------------------------
1     400 : Amelia Jones | executive
2        128 : Pat Boon | management consulting
3           168 : Chris Corman | management consulting
3           225 : Stan Evans | management consulting
2        214 : Ana Ramos | technology
3           137 : Jim Hall | technology
4              153 : Adam Roditi | technology
3           162 : Ray Nelson | technology
2        401 : Scott Harris | marketing
3           100 : Mary Krall | marketing
3           203 : Bill Getz | marketing

11 rows selected.
```

```
SQL> --3.
SQL> column "Project Info" format a30
SQL> column "Start Date" format a10
SQL> column "proj_month" format a10
SQL> column "#emp" format a7
SQL> column "#hours" format a10
SQL> SELECT DISTINCT ( ( proj_number )
  2                    ||':'
  3                    ||name )             AS "Project Info",
  4                  Ltrim(start_date)      AS "Start Date",
  5                  Ltrim(p_month)         "proj_month",
  6                  Ltrim(emp_count)       "#emp",
  7                  Nvl(Ltrim(t_hours), 0) "#hours"
  8  FROM   project
  9         join(SELECT proj_number,
 10                     Extract(month FROM date_assigned) p_month,
 11                     Count(DISTINCT emp_num)           emp_Count,
 12                     SUM(hours_used)                   t_hours
 13              FROM   assignment
 14                     join project USING (proj_number)
 15              WHERE  total_cost IS NULL
 16              GROUP  BY proj_number,
 17                        Extract(month FROM date_assigned)) USING(proj_number)
 18  UNION ALL
 19  SELECT 'TOTAL for '
 20         || proj_number
 21         ||':'
 22         || name                         AS "Project Info",
 23         NULL,
 24         NULL,
 25         Ltrim(Count(DISTINCT emp_num)) "#emp",
 26         Nvl(Ltrim(SUM(hours_used)), 0)
 27  FROM   assignment
 28         join project USING (proj_number)
 29  WHERE  total_cost IS NULL
 30  GROUP  BY 'TOTAL for '
 31            || proj_number
 32            ||':'
 33            || name;
```

```
Project Info                   Start Date proj_month #emp    #hours
------------------------------ ---------- ---------- ------- ----------
20332:Seas the Day             17-NOV-19  11         1       0
20327:Smart Mattress           12-SEP-19  9          1       180
20332:Seas the Day             17-NOV-19  4          1       50
20327:Smart Mattress           12-SEP-19  11         1       0
TOTAL for 20327:Smart Mattress                       1       180
TOTAL for 20332:Seas the Day                         1       50

6 rows selected.
```

```
SQL> --4.
SQL> ALTER TABLE employee
  2    ADD (bonus_amt NUMBER(10) DEFAULT 0);

Table altered.

SQL> UPDATE employee
  2  SET    bonus_amt = 200
  3  WHERE  emp_num IN (SELECT emp_num
  4                     FROM   ((SELECT e.emp_num,
  5                                     a.proj_number
  6                              FROM   employee e,
  7                                     project p,
  8                                     assignment a
  9                              WHERE  e.emp_num = a.emp_num
 10                                     AND a.proj_number = p.proj_number
 11                                     AND Extract(year FROM p.start_date) =
 12                                         ( Extract(year FROM SYSDATE) - 1 )
 13                              GROUP  BY e.emp_num,
 14                                        a.proj_number,
 15                                        p.start_date)
 16                             INTERSECT
 17                             (SELECT emp_num,
 18                                     proj_number
 19                              FROM   assignment
 20                              HAVING SUM(hours_used) > 40
 21                              GROUP  BY proj_number,
 22                                        emp_num)));

2 rows updated.

SQL> SELECT *

  2  FROM   employee;
```

```
   EMP_NUM EMP_LAST                EMP_FIRST                DOB       HIRE_DATE   SUPER_ID  DEPT_CODE  BONUS_AMT
---------- ----------------------- ----------------------- --------- --------- ---------- ---------- ----------
       400 Jones                   Amelia                   17-MAY-74 01-OCT-02                  1003          0
       401 Harris                  Scott                    28-MAR-72 02-DEC-03        400       1001          0
       203 Getz                    Bill                     08-OCT-75 05-APR-05        401       1001          0
       214 Ramos                   Ana                      09-MAR-75 12-JAN-18        400       1002        200
       100 Krall                   Mary                     11-FEB-88 18-MAY-10        401       1001          0
       128 Boon                    Pat                      23-NOV-84 20-OCT-09        400       1000          0
       137 Hall                    Jim                      06-AUG-80 10-NOV-09        214       1002          0
       153 Roditi                  Adam                     05-MAR-88 02-DEC-19        137       1002          0
       162 Nelson                  Ray                      24-SEP-91 20-OCT-18        214       1002          0
       168 Corman                  Chris                    11-AUG-90 20-OCT-11        128       1000        200
       225 Evans                   Stan                     14-JUL-76 01-JUN-05        128       1000          0

11 rows selected.
```

```
SQL> --5.
SQL> COLUMN "Employee Information" format a25
SQL> column "Training Date" format a20
SQL> column "Training Name" format a27
SQL> column "proj_count" format a11
SQL> SELECT emp_num
  2         ||' : '
  3         ||emp_first
  4         ||' '
  5         ||emp_last                                          "Employee Information"
  6                                     ,
  7         hire_date,
  8         training.name                                       "Training Name",
  9         date_acquired                                       "Training Date",
 10         Ltrim(To_char(Count(DISTINCT( proj_number ))))      "proj_count",
 11         Ltrim(training.date_acquired - employee.hire_date) "Num of Days Between"
 12  FROM   employee
 13         left join training USING (emp_num)
 14         left join assignment USING (emp_num)
 15         left join project USING (proj_number)
 16  WHERE  Extract(year FROM hire_date) = ( Extract(year FROM SYSDATE) - 1 )
 17  GROUP  BY emp_num
 18            ||' : '
 19            ||emp_first
 20            ||' '
 21            ||emp_last,
 22            hire_date,
 23            training.name,
 24            date_acquired,
 25            proj_number;

Employee Information      HIRE_DATE Training Name               Training Date        proj_count  Num of Days Between
------------------------- --------- --------------------------- ------------------- ----------- ----------------------------------------
214 : Ana Ramos           12-JAN-18 Blockchain                  10-DEC-19           1           697
162 : Ray Nelson          20-OCT-18 Database Normalization      02-NOV-18           0           13
162 : Ray Nelson          20-OCT-18 Database Normalization II   06-JUL-19           0           259
```

```
SQL> --6.
SQL> SELECT proj_number "Project #",
  2         NAME,
  3         start_date,
  4         b.discontinuity,
  5         CASE
  6           WHEN total_cost > 0 THEN 'Complete'
  7           ELSE 'On-going'
  8         END         AS "Status"
  9  FROM   assignment
 10         JOIN (SELECT proj_number,
 11                      NAME,
 12                      start_date,
 13                      total_cost,
 14                      date_assigned,
 15                      date_ended,
 16                      Lead(date_assigned, 1)
 17                        OVER (
 18                           partition BY proj_number
 19                           ORDER BY date_ended) - date_assigned discontinuity
 20               FROM   assignment
 21                      JOIN project using (proj_number)) b using(proj_number)
 22  WHERE  b.discontinuity > 45
 23  GROUP  BY proj_number,
 24            NAME,
 25            start_date,
 26            b.discontinuity,
 27            total_cost
 28  ORDER  BY proj_number;

 Project # NAME                      START_DAT DISCONTINUITY Status
---------- ------------------------ --------- ------------ --------
     20327 Smart Mattress           12-SEP-19            50 On-going
     20332 Seas the Day             17-NOV-19           214 On-going
```

```
SQL> --7.

column "Project #" format 9999999
column "Start Date" format a20
column "# Employees Assigned" format 999
column "Average Hours" format 999
 BREAK ON quarter
 SELECT CASE
             WHEN '01-Jan-2019'= p.Start_Date and p.Start_Date <= '30-Mar-2019' THEN 'Quarter 1'
             WHEN'30-Mar-2019'< p.Start_Date and p.Start_Date <= '30-Jun-2019' THEN 'Quarter 2'
             WHEN '30-Jun-2019' < p.Start_Date and p.Start_Date <='30-Sep-2019' THEN 'Quarter 3'
             WHEN '30-Sep-2019' < p.Start_Date and p.Start_Date <='31-Dec-2019' THEN 'Quarter 4'
           END                                    AS Quarter,
           a.proj_number                          "Project #",
           p.start_date                           "Start Date",
         Count(a.emp_num)                        "# Employees Assigned",
          SUM(hours_used) / Count(a.proj_number) "Average Hours",
           NVL(Count(DISTINCT p.proj_number) ,0)         "Number of Projects"
          FROM   project p,
          assignment a
   WHERE  p.proj_number = a.proj_number
   and  p.start_date >'01-Jan-2019'
   GROUP  BY a.proj_number,p.start_date
  ORDER  BY p.start_date;

QUARTER    Project # Start Dat # Employees Assigned Average Hours Number of Projects
--------- ---------- --------- -------------------- ------------- ------------------
Quarter 3      20327 12-SEP-19                    2            90                  1
Quarter 4      20332 17-NOV-19                    2            25                  1
```

```
SQL> --8.
SQL> column "emp_num" format a7
SQL> column "EMPLOYEE" format a20
SQL> column "Business Writing" format a17
SQL> column "Database Design" format a15
SQL> column "Analytics" format a17
SQL> column "Management Science" format a18
SQL> column "Data Mining" format a13
SQL> column "Cloud Computing" format a17
SQL> column "Digital Media" format a17
SQL> column "Blockchain" format a17
SQL> column "Be a Better Boss" format a17
SQL> COLUMN "Date_Acquired" format a13
SQL> SELECT ltrim(emp_num) emp_num,
  2         ltrim(Decode(emp_first
  3                || ' '
  4                || emp_last, NULL, 'Number of Trainings:',
  5                             emp_first
  6                             || ' '
  7                             || emp_last)) Employee,
  8         ltrim(to_char(SUM(Decode(code, 100, 1,
  9                          0))))             "Business Writing",
 10         CASE
 11           WHEN emp_first
 12                || ' '
 13                || emp_last IS NULL THEN '-----'
 14           ELSE Max(Decode(code, 100, To_char(date_acquired),'-----'))
 15         END                               AS "Date_Acquired",
 16           ltrim(to_char(SUM(DECODE(Code, 102, 1, 0)))) "Database Design",
 17           CASE WHEN Emp_First || ' ' || Emp_Last IS NULL
 18                THEN '-----'
 19                ELSE MAX(DECODE(Code, 102, TO_CHAR(Date_Acquired),'-----'))
 20                END AS "Date_Acquired",
 21           ltrim(to_char(SUM(DECODE(Code,121, 1, 0)))) "Data Mining",
 22           CASE WHEN Emp_First || ' ' || Emp_Last IS NULL
 23                THEN '-----'
 24                ELSE MAX(DECODE(Code, 121, TO_CHAR(Date_Acquired),'-----'))
 25                END AS "Date_Acquired",
 26         ltrim(to_char(SUM(Decode(code, NULL, 0,
 27                          1))))             AS "Number of Skills"
 28  FROM   employee
 29         join training USING (emp_num)
 30         join skill USING (code)
 31  GROUP  BY grouping sets ( ( emp_num, emp_first
 32                           || ' '
 33                           || emp_last ), ( ) );
```

EMP_NUM	EMPLOYEE	Business Writing	Date_Acquired	Database Design	Date_Acquired	Data Mining	Date_Acquired	Number of Skills
100	Mary Krall	0	-----	1	08-JAN-18	0	-----	1
400	Amelia Jones	1	04-DEC-18	0	-----	0	-----	1
162	Ray Nelson	2	06-JUL-19	0	-----	0	-----	2
168	Chris Corman	1	12-AUG-16	0	-----	0	-----	1
203	Bill Getz	0	-----	0	-----	1	02-DEC-13	1
214	Ana Ramos	0	-----	0	-----	1	10-DEC-19	1
225	Stan Evans	1	30-NOV-15	0	-----	1	05-FEB-19	2
401	Scott Harris	0	-----	1	07-DEC-17	0	-----	1
	Number of Trainings:	5	-----	2	-----	3	-----	10

9 rows selected.

```
SQL> --9.
SQL> column "Description" format a45
SQL> BREAK ON "Department"
SQL> SELECT Upper(d.name)                    "Department",
  2         s.description                    "Description",
  3         Count(t.code)                    "Num Trainings",
  4         Rank()
  5           over(
  6             PARTITION BY d.name
  7             ORDER BY Count(t.code) DESC) rank
  8  FROM   training t,
  9         skill s,
 10         employee e,
 11         department d
 12  WHERE  s.code = t.code
 13         AND t.emp_num = e.emp_num
 14         AND d.dept_code = e.dept_code
 15  GROUP  BY s.description,
 16            e.dept_code,
 17            d.name
 18  ORDER  BY e.dept_code,
 19            Count(t.code) DESC;

Department             Description                                Num Trainings       RANK
---------------------- ------------------------------------------ ------------- ----------
MANAGEMENT CONSULTING  Business Writing                                    2          1
                       Data Mining                                         1          2
MARKETING              Database Design                                     2          1
                       Data Mining                                         1          2
TECHNOLOGY             Business Writing                                    2          1
                       Data Mining                                         1          2
EXECUTIVE              Business Writing                                    1          1

7 rows selected.
```

```
--10
COLUMN "Employee" format a20
COLUMN "Supervisor" format a18
COLUMN "Training Info" format a32
COLUMN "Date_Acquired" format a10
COLUMN "Skill" format a20
COLUMN "Months" format 99
COLUMN "#Trainings" format 99

BREAK ON "Employee" ON "Supervisor"
select  a.Emp_Num || ': '||b.Emp_First ||' ' ||b.Emp_Last "Employee",
case when (b.Super_ID) is null then '--'else to_char(b.Super_ID || ':'||b.sfirst || ' ' || b.slast) end as   "Supervisor",
       a.Train_Num ||': '|| a.Name "Training Info",
       a.Date_Acquired "Date_Acquired",
(trunc((sysdate-a.Date_Acquired)/30.4)) "Months", b.tnums "#Trainings", a.Description "Skill"
from(
(select  e.Emp_Num, t.Train_Num,t.Name,t.Date_Acquired,s.Description, ROUND(sysdate-t.Date_Acquired)
       from Employee e, Training t, Skill s
       where e.Emp_Num = t.Emp_Num
       and t.Code = s.Code
       group by e.Emp_Num, e.Emp_First, e.Emp_Last,t.Train_Num,t.Name,t.Date_Acquired,s.Description,e.Super_ID) a
join (
select t.Emp_Num, e.Emp_First, e.Emp_Last, count(Train_Num) tnums, e.super_id, e2.emp_first sfirst, e2.emp_last slast
from training t, employee  e, employee e2
where t.emp_num = e.emp_num
and e.super_id = e2.emp_num
GROUP BY t.Emp_Num, e.Emp_First, e.Emp_Last,e.super_id , e2.emp_first, e2.emp_last) b
on a.emp_num = b.emp_num)
GROUP BY a.Emp_Num, b.Emp_First, b.Emp_Last,b.Super_ID,  b.sfirst, b.slast,
a.Train_Num ||': '|| a.Name, a.Date_Acquired , a.Description, b.tnums
order by a.Emp_Num, b.Emp_First, b.Emp_Last,b.Super_ID,   b.sfirst, b.slast;

Employee             Supervisor         Training Info                    Date_Acqui Months #Trainings Skill
-------------------- ------------------ -------------------------------- ---------- ------ ---------- --------------------
100: Mary Krall      401:Scott Harris   878: Dig Media for Influencers   08-JAN-18      22          1 Database Design
162: Ray Nelson      214:Ana Ramos      675: Database Normalization II   06-JUL-19       4          2 Business Writing
                                        823: Database Normalization      02-NOV-18      13          2 Business Writing
168: Chris Corman    128:Pat Boon       824: Database Normalization      12-AUG-16      39          1 Business Writing
203: Bill Getz       401:Scott Harris   857: Data Mining                 02-DEC-13      72          1 Data Mining
214: Ana Ramos       400:Amelia Jones   897: Blockchain                  10-DEC-19       0          1 Data Mining
225: Stan Evans      128:Pat Boon       835: Analytics                   05-FEB-19       9          2 Data Mining
                                        899: Big Data                    30-NOV-15      48          2 Business Writing
401: Scott Harris    400:Amelia Jones   826: Dig.Med for the Elderly     07-DEC-17      23          1 Database Design

9 rows selected.
```

```
SQL> --11.
SQL> column utilization format 99.9999
SQL> SELECT b.*,
  2         Ltrim(To_char(11000 - ( rank * 1000 ), '$999,999.00')) "Bonus Amt"
  3  FROM  (SELECT DISTINCT e.emp_num
  4                         ||': '
  5                         ||e.emp_first
  6                         ||' '
  7                         ||e.emp_last
  8                               "Employee",
  9                         e.hire_date,
 10                         SUM(hours_used) / ( 40 * ( ( SYSDATE - hire_date ) / 7 )
 11                                           )
 12                               "Utilization",
 13                         Rank()
 14                           over(
 15                             ORDER BY (SUM(hours_used)/(40*((SYSDATE-hire_date)/7)
 16                           ))
 17                           DESC nulls last)
 18                         Rank
 19         FROM   employee e,
 20                assignment a
 21         WHERE  e.emp_num = a.emp_num
 22         GROUP  BY e.emp_num,
 23                   e.hire_date,
 24                   e.emp_first,
 25                   e.emp_last) b
 26  WHERE  rank <= 5
 27  ORDER  BY rank;

Employee             HIRE_DATE Utilization       RANK Bonus Amt
-------------------- --------- ----------- ---------- ------------
214: Ana Ramos       12-JAN-18       .0608          1 $10,000.00
168: Chris Corman    20-OCT-11       .0301          2 $9,000.00
137: Jim Hall        10-NOV-09       .0110          3 $8,000.00
100: Mary Krall      18-MAY-10       .0080          4 $7,000.00
128: Pat Boon        20-OCT-09       .0047          5 $6,000.00
```

```
SQL> --12.
SQL> column "f_table_name" format a15
SQL> column "Table_Name" format a15
SQL> column "column_name" format a15
SQL> column constraint_name format a30
SQL> column constraint_type format a10
SQL> column "search_condition" format a30
SQL>
SQL> BREAK on "Table_Name"
SQL> SELECT    ut.table_name "Table_Name",
  2            ut.column_name "column_name",
  3            Ltrim(Nvl(uc.constraint_name,'--')) constraint_name,
  4            CASE
  5                      WHEN ac.constraint_type IS NULL THEN '--'
  6                      WHEN ac.constraint_type='C' THEN 'CK'
  7                      WHEN ac.constraint_type='P' THEN 'PK'
  8                      WHEN ac.constraint_type='R' THEN 'FK'
  9                      WHEN ac.constraint_type='U' THEN 'UK'
 10            END AS constraint_type,
 11            ac.search_condition "search_condition",
 12            Ltrim(Nvl(fkt.table_name,'--'))  f_table_name,
 13            Ltrim(Nvl(fkt.column_name,'--')) column_name
 14  FROM      user_tab_columns ut
 15  LEFT JOIN user_cons_columns uc
 16  ON        ((
 17                               ut.table_name=uc.table_name)
 18            AND       (
 19                               ut.column_name=uc.column_name) )
 20  LEFT JOIN all_constraints ac
 21  ON        (
 22                      ac.constraint_name=uc.constraint_name)
 23  LEFT JOIN user_cons_columns fkt
 24  ON        ac.r_constraint_name = fkt.constraint_name
 25  ORDER BY  ut.table_name,ut.column_name;
```

Table_Name	column_name	CONSTRAINT_NAME	CONSTRAINT	search_condition	F_TABLE_NAME	COLUMN_NAME
ASSIGNMENT	ASSIGN_NUM	ASSIGNMENT_ASSIGN_NUM_PK	PK		--	--
	DATE_ASSIGNED	ASSIGNMENT_DATE_ENDED_CK	CK	Date_Assigned<Date_Ended	--	--
	DATE_ENDED	ASSIGNMENT_DATE_ENDED_CK	CK	Date_Assigned<Date_Ended	--	--
	EMP_NUM	ASSIGNMENT_EMP_NUM_FK	FK		EMPLOYEE	EMP_NUM
	HOURS_USED	--	--		--	--
	PROJ_NUMBER	ASSIGNMENT_PROJ_NUMBER_FK	FK		PROJECT	PROJ_NUMBER
CLIENT	CITY	--	--		--	--
	CLIENT_ID	CLIENT_CLIENT_ID_PK	PK		--	--
	CONTACT_NAME	CLIENT_CONTACT_NAME_NN	CK	"CONTACT_NAME" IS NOT NULL	--	--
	INDUSTRY	--	--		--	--
	NAME	CLIENT_NAME_CK	CK	Name=UPPER(Name)	--	--
	NAME	CLIENT_NAME_NN	CK	"NAME" IS NOT NULL	--	--
	PHONE	CLIENT_PHONE_NN	CK	"PHONE" IS NOT NULL	--	--
	STATE	--	--		--	--
	STREET	--	--		--	--
	WEB_ADDRESS	--	--		--	--
	ZIP_CODE	--	--		--	--
DEPARTMENT	DEPT_CODE	DEPARTMENT_DEPT_CODE_PK	PK		--	--
	LOCATION	DEPARTMENT_LOCATION_NN	CK	"LOCATION" IS NOT NULL	--	--
	MANAGER_ID	DEPARTMENT_MANAGER_ID_FK	FK		EMPLOYEE	EMP_NUM
	NAME	DEPARTMENT_NAME_NN	CK	"NAME" IS NOT NULL	--	--
	PHONE	DEPARTMENT_PHONE_NN	CK	"PHONE" IS NOT NULL	--	--
EMPLOYEE	BONUS_AMT	--	--		--	--
	DEPT_CODE	EMPLOYEE_DEPT_CODE_FK	FK		DEPARTMENT	DEPT_CODE
	DOB	--	--		--	--
	EMP_FIRST	EMPLOYEE_EMP_FIRST_NN	CK	"EMP_FIRST" IS NOT NULL	--	--
	EMP_LAST	--	--		--	--
	EMP_NUM	EMPLOYEE_EMP_NUM_PK	PK		--	--
	EMP_NUM	EMPLOYEE_EMP_NUM_FK	FK		EMPLOYEE	EMP_NUM
	EMP_NUM	EMPLOYEE_EMP_NUM_CK	CK	Emp_Num between 1 and 99999	--	--
	HIRE_DATE	--	--		--	--
	SUPER_ID	EMPLOYEE_SUPER_ID_FK	FK		EMPLOYEE	EMP_NUM
PROJECT	CLIENT_ID	PROJECT_CLIENT_ID_FK	FK		CLIENT	CLIENT_ID
	DEPT_CODE	PROJECT_DEPT_CODE_FK	FK		DEPARTMENT	DEPT_CODE
	NAME	PROJECT_NAME_NN	CK	"NAME" IS NOT NULL	--	--
	PROJ_NUMBER	PROJECT_PROJ_NUMBER_PK	PK		--	--
	START_DATE	--	--		--	--
	TOTAL_COST	--	--		--	--
SKILL	CODE	SKILL_CODE_PK	PK		--	--
	DESCRIPTION	--	--		--	--
TRAINING	CODE	TRAINING_CODE_FK	FK		SKILL	CODE
	COMMENTS	--	--		--	--
	DATE_ACQUIRED	--	--		--	--
	EMP_NUM	TRAINING_EMP_NUM_FK	FK		EMPLOYEE	EMP_NUM
	NAME	--	--		--	--
	TRAIN_NUM	TRAINING_TRAIN_NUM_PK	PK		--	--

46 rows selected.