

DB Implementation Project

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Team 6

PART II A - Script #1

Additional constraints defined by us included in our tables:

- [Employee table] Check to ensure that emp_num does not equal super_id; entitled employee_emp_num_ck
- [Assignment table] Employees are not charging more than 180 hours per month to a project (assuming a 45-hour work week for 4 weeks); entitled assignment_hours_used_ck

```
-- dropping all tables
DROP TABLE skill          CASCADE CONSTRAINTS;
DROP TABLE department     CASCADE CONSTRAINTS;
DROP TABLE employee       CASCADE CONSTRAINTS;
DROP TABLE training       CASCADE CONSTRAINTS;
DROP TABLE client         CASCADE CONSTRAINTS;
DROP TABLE project        CASCADE CONSTRAINTS;
DROP TABLE assignment     CASCADE CONSTRAINTS;

--SKILL (Code, Description)

CREATE TABLE skill
(
    code          VARCHAR2(5) PRIMARY KEY,
    description   VARCHAR2(50) NOT NULL);

-- DEPARTMENT (Dept_Code, Name, Location, Phone, Manager_ID@)

CREATE TABLE department
(
    dept_code     NUMBER(3) PRIMARY KEY,
    name          VARCHAR2(20),
    location      VARCHAR2(20),
    phone         VARCHAR2(12),
    manager_id    NUMBER(10));

--EMPLOYEE (Emp_Num, Emp_Last, Emp_First, DOB, Hire_DATE, Super_ID@, Dept_Code@)

CREATE TABLE employee
(
    emp_num       NUMBER(10) PRIMARY KEY,
    emp_last      VARCHAR2(20),
    emp_first     VARCHAR2(20),
    dob           DATE,
    hire_date     DATE DEFAULT sysDATE,
    super_id      NUMBER(10),
    dept_code     NUMBER(2),
    FOREIGN KEY (dept_code) REFERENCES department(dept_code),
    FOREIGN KEY (super_id) REFERENCES employee(emp_num),
    CONSTRAINT employee_hire_date_ck      CHECK (((hire_DATE-dob)/365)>=17),
    CONSTRAINT employee_emp_num_super_id_ck CHECK (emp_num != super_id));
```

```

-- TRAINING (Train_Num, Code@, Emp_Num@, Date_Acquired, Name, Comments)

CREATE TABLE training
(
    train_num      NUMBER(3) PRIMARY KEY,
    code           VARCHAR2(5) NOT NULL,
    emp_num        NUMBER(10) NOT NULL,
    date_acquired  DATE NOT NULL,
    name           VARCHAR2(50),
    comments       VARCHAR2(50),
    FOREIGN KEY (code) REFERENCES skill(code),
    FOREIGN KEY (emp_num) REFERENCES employee(emp_num));

-- CLIENT      (Client_ID, Name, Street, City, State, Zip_Code, Industry,
--              Web_Address, Phone, Contact_Name)

CREATE TABLE client
(
    client_ID      VARCHAR2(5) PRIMARY KEY,
    name           VARCHAR2(30) NOT NULL,
    street         VARCHAR2(30) NOT NULL,
    city           VARCHAR2(20) NOT NULL,
    state          VARCHAR2(20) NOT NULL,
    zip_code       NUMBER(5) NOT NULL,
    industry       VARCHAR2(20),
    web_address    VARCHAR2(20),
    phone          VARCHAR2(12) NOT NULL,
    contact_name   VARCHAR2(20) NOT NULL);

-- PROJECT (Proj_number, Name, Start_date, Total_Cost, Dept_Code@, Client_ID@)

CREATE TABLE project
(
    proj_number    VARCHAR2(7) PRIMARY KEY,
    name           VARCHAR2(30) NOT NULL,
    start_DATE     DATE DEFAULT sysdate,
    total_cost     NUMBER(10,2),
    dept_code      NUMBER(2),
    client_ID      VARCHAR2(5),
    FOREIGN KEY (dept_code) REFERENCES department(dept_code),
    FOREIGN KEY (client_id) REFERENCES client(client_id));

```

```
-- ASSIGNMENT      (Assign_Num, Proj_NUMBER@, Emp_Num@, DATE_Assigned, DATE_Ended,  
--                  Hours_Used)
```

```
CREATE TABLE assignment  
(   assign_num      NUMBER(4) PRIMARY KEY,  
   proj_number      VARCHAR2(7),  
   emp_num          NUMBER(10),  
   date_assigned    DATE DEFAULT sysdate,  
   date_ended       DATE,  
   hours_used       NUMBER(5),  
   FOREIGN KEY (proj_number) REFERENCES project(proj_number),  
CONSTRAINT assignment_hours_used_ck    CHECK (hours_used<=180),  
CONSTRAINT assignment_DATE_ended_ck    CHECK (DATE_ended>=DATE_assigned));  
  
ALTER TABLE assignment  
ADD CONSTRAINT assignment_emp_num_FK  
FOREIGN KEY (emp_num) REFERENCES employee(emp_num);
```

PART II A - Script #2

--Adding values into the tables

```
INSERT INTO skill VALUES (1,'Project management');
INSERT INTO skill VALUES (2,'Negotiation');
INSERT INTO skill VALUES (3,'Data analyst');
INSERT INTO skill VALUES (4,'Financial management');
INSERT INTO skill VALUES (5,'Programming');
INSERT INTO skill VALUES (6,'Database administrator');
INSERT INTO skill VALUES (7,'Digital marketing');

INSERT INTO department
VALUES (1,'Executive management','New York City','7185432345', 2015071401);
INSERT INTO department
VALUES (3,'Human resources','New York City','718-217-8932', 2016012911);
INSERT INTO department
VALUES (5,'Finance','Boston','774-790-9182',2007030122);
INSERT INTO department
VALUES (6,'Accounting','Boston','774-813-9013',2004011708);
INSERT INTO department
VALUES (8,'Production','Chicago','312-212-6378', 2017110318);
INSERT INTO department
VALUES (12,'Purchasing','Boston','774-124-8456', 2009031713);
INSERT INTO department
VALUES (16,'R and D','San Francisco','415-890-1234',2010110401);

INSERT INTO employee
VALUES(2015071401,'Aguilera','Christina','18-DEC-1980','14-JUL-2015',NULL,1);
INSERT INTO employee
VALUES(2016012911,'Timberlake','Justin','31-DEC-1981','29-JAN-2016',2015071401,3);
INSERT INTO employee
VALUES(2007030122,'Spears','Britney','2-DEC-1981','1-MAR-2007',2015071401,5);
INSERT INTO employee
VALUES(2004011708,'Knowles','Beyonce','04-SEP-1981','17-JAN-2004',2015071401,6);
INSERT INTO employee
VALUES(2017110318,'McKnight','Brian','05-JUN-1969','3-NOV-2017',2015071401,8);
INSERT INTO employee
VALUES(2009031713,'Lachey','Nick','9-NOV-1973','17-MAR-2009',2015071401,12);
INSERT INTO employee
VALUES(2010110401,'Carter','Aaron','7-DEC-1987','04-NOV-2010',2015071401,16);
INSERT INTO employee
VALUES(2008110514,'Martin','Ricky','24-OCT-1971','5-NOV-2008',2015071401,12);
INSERT INTO employee
VALUES(2012041513,'Lopez','Jennifer','24-DEC-1969','15-APR-2012',2015071401,3);
INSERT INTO employee
VALUES(2011011012,'Smith','Will','25-SEP-1968','10-JAN-2011',2015071401,16);
INSERT INTO employee
```

```

VALUES(2012112604,'Chenna','Sathwik','19-AUG-1983','26-NOV-2012',2016012911,3);
INSERT INTO employee
VALUES(2013121601,'Jilla','Karthik','29-NOV-1984','16-DEC-2013',2016012911,3);
INSERT INTO employee
VALUES(2014062401,'Baba','Naseer','22-NOV-1984','24-JUN-2014',2016012911,3);
INSERT INTO employee
VALUES(2015010611,'Gupta','Chetna','09-JUL-1982','6-JAN-2015',2007030122,5);
INSERT INTO employee
VALUES(2017031204,'Chilkuri','Nagarjuna','22-JAN-1980','12-MAR-2017',2007030122,5);
INSERT INTO employee
VALUES(2016082803,'Arora','Abhilasha','10-FEB-1981','28-AUG-2016',2007030122,5);
INSERT INTO employee
VALUES(2014111611,'Yerragopu','Chandu','19-APR-1980','16-NOV-2014',2004011708,6);
INSERT INTO employee
VALUES(2015010605,'Nanduri','Poojitha','25-SEP-1982','6-JAN-2015',2004011708,6);
INSERT INTO employee
VALUES(2016022204,'Varma','Aditya','06-MAR-1981','22-FEB-2016',2004011708,6);
INSERT INTO employee
VALUES(2012032505,'Kowkuntla','Venky','29-APR-1989','25-MAR-2012',2017110318,8);
INSERT INTO employee
VALUES(2013041613,'KSS','Harish','23-MAY-1988','16-APR-2013',2017110318,8);
INSERT INTO employee
VALUES(2014050821,'Kothakota','Aditya','22-FEB-1980','8-MAY-2014',2017110318,8);
INSERT INTO employee
VALUES(2015062807,'Turlapati','Prabhat','09-JAN-1981','28-JUN-2015',2009031713,12);
INSERT INTO employee
VALUES(2015071803,'Krishna','Priyusha','18-JUL-1982','18-JUL-2015',2009031713,12);
INSERT INTO employee
VALUES(2016081411,'Devnani','Nikhil','16-JUN-1981','14-AUG-2016',2009031713,12);
INSERT INTO employee
VALUES(2017091708,'Boone','Breah','11-JAN-1980','17-SEP-2017',2010110401,16);
INSERT INTO employee
VALUES(2015100506,'William','Taft','12-DEC-1981','5-OCT-2015',2010110401,16);

INSERT INTO training
VALUES(11,'6',2011011012,'26-NOV-2013','Introduction to database management','One day course');
INSERT INTO training
VALUES(12,'6',2009031713,'26-NOV-2013','Introduction to database management','One day course');
INSERT INTO training
VALUES(13,'6',2008110514,'26-NOV-2013','Introduction to database management','One day course');
INSERT INTO training
VALUES(14,'6',2007030122,'26-NOV-2013','Introduction to database management','One day course');
INSERT INTO training
VALUES(15,'6',2010110401,'26-NOV-2013','Introduction to database management','One day course');
INSERT INTO training
VALUES(16,'6',2012032505,'26-NOV-2013','Introduction to database management','One day course');
INSERT INTO training
VALUES(25,'6',2012032505,'16-DEC-2014','Advanced database management','Pre-requisite: DB1');
INSERT INTO training

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VALUES(36,'2',2009031713,'16-APR-2015','Negotiations with clients','Weekend intensive');
INSERT INTO training
VALUES(37,'2',2014111611,'16-APR-2015','Negotiations with clients','Weekend intensive');
INSERT INTO training
VALUES(38,'2',2004011708,'16-APR-2015','Negotiations with clients','Weekend intensive');
INSERT INTO training
VALUES(39,'2',2010110401,'16-APR-2015','Negotiations with clients','Weekend intensive');
INSERT INTO training
VALUES(42,'1',2014111611,'24-JUN-2015','Project management essentials','Three-part series');
INSERT INTO training
VALUES(43,'1',2014050821,'24-JUN-2015','Project management essentials','Three-part series');
INSERT INTO training
VALUES(44,'1',2013041613,'24-JUN-2015','Project management essentials','Three-part series');
INSERT INTO training
VALUES(55,'7',2013041613,'6-JAN-2016','Social media marketing','Lunchtime session');
INSERT INTO training
VALUES(56,'7',2015071803,'6-JAN-2016','Social media marketing','Lunchtime session');
INSERT INTO training
VALUES(57,'7',2015010611,'6-JAN-2016','Social media marketing','Lunchtime session');
INSERT INTO training
VALUES(58,'7',2014062401,'6-JAN-2016','Social media marketing','Lunchtime session');
INSERT INTO training
VALUES(67,'5',2015062807,'8-MAY-2016','How to be a programmer','Lunchtime session');
INSERT INTO training
VALUES(68,'5',2011011012,'8-MAY-2016','How to be a programmer','Lunchtime session');
INSERT INTO training
VALUES(69,'5',2009031713,'8-MAY-2016','How to be a programmer','Lunchtime session');
INSERT INTO training
VALUES(70,'1',2015071401,'8-MAY-2016','Advanced project management','One day course');
INSERT INTO training
VALUES(71,'1',2016012911,'8-MAY-2016','Advanced project management','One day course');
INSERT INTO training
VALUES(72,'1',2017110318,'8-MAY-2016','Advanced project management','One day course');
INSERT INTO training
VALUES(73,'1',2008110514,'8-MAY-2016','Advanced project management','One day course');
INSERT INTO training
VALUES(74,'1',2014111611,'8-MAY-2016','Advanced project management','One day course');
INSERT INTO training
VALUES(75,'1',2012032505,'8-MAY-2016','Advanced project management','One day course');
INSERT INTO training
VALUES(76,'1',2014050821,'8-MAY-2016','Advanced project management','One day course');
INSERT INTO training
VALUES(77,'1',2016081411,'8-MAY-2016','Advanced project management','One day course');
INSERT INTO training
VALUES(80,'3',2012032505,'25-MAY-2016','Analyzing data like a boss','Lunchtime session');
INSERT INTO training
VALUES(81,'3',2012112604,'25-MAY-2016','Analyzing data like a boss','Lunchtime session');
INSERT INTO training
VALUES(82,'3',2007030122,'25-MAY-2016','Analyzing data like a boss','Lunchtime session');

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INSERT INTO training
VALUES(85,'7',2015062807,'12-JAN-2017','Marketing for print','Lunchtime session');
INSERT INTO training
VALUES(86,'7',2016081411,'12-JAN-2017','Marketing for print','Lunchtime session');
INSERT INTO training
VALUES(87,'7',2016022204,'12-JAN-2017','Marketing for print','Lunchtime session');
INSERT INTO training
VALUES(90,'2',2015071803,'22-FEB-2017','Negotiations with clients','Weekend intensive');
INSERT INTO training
VALUES(96,'4',2017031204,'28-AUG-2017','Finance for beginners','Half day course');
INSERT INTO training
VALUES(97,'4',2016022204,'28-AUG-2017','Finance for beginners','Half day course');
INSERT INTO training
VALUES(98,'4',2016081411,'28-AUG-2017','Finance for beginners','Half day course');

INSERT INTO client
VALUES('BAC21','Bank of America - ATL','435 Peachtree Avenue','Atlanta','GA',30301,'Banking','bankofamerica.com','526-526-5555','Warren Buffett');
INSERT INTO client
VALUES('BAC34','Bank of America - PIT','47 Forbes Avenue','Pittsburgh','PA',15213,'Banking','bankofamerica.com','475-598-6324','Jack Bogle');
INSERT INTO client
VALUES('BAC65','Bank of America - SEA','999 Pike Place','Seattle','WA',98105,'Banking','bankofamerica.com','638-962-4256','Paul Tudor Jones');
INSERT INTO client
VALUES('JPM02','JP Morgan - NYC','785 W 121st','New York City','NY',10007,'Finance','jpmorgan.com','345-578-8889','George Soros');
INSERT INTO client
VALUES('JPM05','JP Morgan - CHI','45 Wabash Avenue','Chicago','IL',60612,'Finance','jpmorgan.com','123-526-8579','Ray Dalio');
INSERT INTO client
VALUES('CRS07','Credit Suisse - NYC','57 Fashion Avenue','New York City','NY',10004,'Finance','creditsuisse.com','634-748-9634','Carl Icahn');
INSERT INTO client
VALUES('CRS11','Credit Suisse - SF','5246 Geary Boulevard','San Francisco','CA',94112,'Finance','creditsuisse.com','410-526-0014','David Swensen');
INSERT INTO client
VALUES('BNY03','Bank of New York Mellon','524354 W 52nd Street','New York City','NY',10020,'Banking','bny.com','417-859-4689','Mary Callahan');
INSERT INTO client
VALUES('MOS01','Morgan Stanley','5123 Wall Street','New York City','NY',10027,'Finance','morganstanley.com','635-685-7586','Charles Schwab');
INSERT INTO client
VALUES('MOR01','Morningstar','2 Chicago Avenue','Chicago','IL',60176,'Finance','morningstar.com','124-546-8596','John Templeton');

INSERT INTO project
VALUES('145-BAC','BOA Account reconciliation','18-MAY-2016',20000,5,'BAC21');
INSERT INTO project
VALUES('901-BAC','BOA Lean operations','07-JAN-2017',NULL,5,'BAC21');
INSERT INTO project

```



```

VALUES('145-JPM','JPM Account reconciliation','16-FEB-2016',200000,6,'JPM02');
INSERT INTO project
VALUES('211-JPM','JPM Financial consolidation','18-MAY-2012',50000,5,'JPM05');
INSERT INTO project
VALUES('014-CRS','CRS Account rationalization','25-JAN-2011',65000,6,'CRS11');
INSERT INTO project
VALUES('114-CRS','CRS Process improvement','7-JUN-2016',100000,5,'CRS11');
INSERT INTO project
VALUES('122-BNY','BNY Special project','5-OCT-2016',NULL,16,'BNY03');
INSERT INTO project
VALUES('065-MOS','MOS Account reconciliation','18-JUL-2012',150000,5,'MOS01');
INSERT INTO project
VALUES('123-MOS','MOS Financial consolidation','5-AUG-2016',750000,6,'MOS01');
INSERT INTO project
VALUES('226-MOS','MOS Strategic tax planning','4-JUN-2016',NULL,5,'MOS01');
INSERT INTO project
VALUES('438-TEC','Big Data Analytics','4-SEP-2016',NULL,16,'JPM05');

```

```

INSERT INTO assignment
VALUES(0984,'145-JPM',2012112604,'6-MAR-2016','17-MAR-2017',6);
INSERT INTO assignment
VALUES(0991,'122-BNY',2014111611,'17-OCT-2016','31-OCT-2016',48);
INSERT INTO assignment
VALUES(1000,'901-BAC',2007030122,'1-MAY-2017','31-MAY-2017',82);
INSERT INTO assignment
VALUES(1001,'901-BAC',2015010611,'1-MAY-2017','31-MAY-2017',155);
INSERT INTO assignment
VALUES(1002,'065-MOS',2016012911,'1-MAY-2017','31-MAY-2017',148);
INSERT INTO assignment
VALUES(1010,'145-BAC',2014111611,'4-JUN-2017','30-JUN-2017',111);
INSERT INTO assignment
VALUES(1012,'901-BAC',2007030122,'1-JUN-2017','30-JUN-2017',160);
INSERT INTO assignment
VALUES(1013,'901-BAC',2015010611,'1-JUN-2017','30-JUN-2017',65);
INSERT INTO assignment
VALUES(1020,'145-BAC',2014111611,'1-JUL-2017','31-JUL-2017',65);
INSERT INTO assignment
VALUES(1023,'145-BAC',2012112604,'1-JUL-2017','31-JUL-2017',86);
INSERT INTO assignment
VALUES(1029,'065-MOS',2016012911,'1-JUL-2017','31-JUL-2017',96);
INSERT INTO assignment
VALUES(1034,'901-BAC',2007030122,'1-AUG-2017','31-AUG-2017',24);
INSERT INTO assignment
VALUES(1042,'065-MOS',2016012911,'1-AUG-2017','31-AUG-2017',25);
INSERT INTO assignment
VALUES(1044,'145-BAC',2014111611,'1-AUG-2017','31-AUG-2017',48);
INSERT INTO assignment
VALUES(1045,'145-BAC',2012112604,'1-AUG-2017','31-AUG-2017',96);
INSERT INTO assignment

```

```

VALUES(1046,'145-BAC',2009031713,'1-AUG-2017','31-AUG-2017',48);
INSERT INTO assignment
VALUES(1051,'065-MOS',2016012911,'1-SEP-2017','30-SEP-2017',124);
INSERT INTO assignment
VALUES(1054,'438-TEC',2010110401,'10-SEP-2017','30-SEP-2017',95);
INSERT INTO assignment
VALUES(1057,'438-TEC',2009031713,'10-SEP-2017','30-SEP-2017',56);
INSERT INTO assignment
VALUES(1059,'438-TEC',2014111611,'10-SEP-2017','30-SEP-2017',122);
INSERT INTO assignment
VALUES(1072,'438-TEC',2016022204,'10-SEP-2017','30-SEP-2017',74);
INSERT INTO assignment
VALUES(1076,'438-TEC',2008110514,'10-SEP-2017','30-SEP-2017',85);
INSERT INTO assignment
VALUES(1082,'438-TEC',2008110514,'10-OCT-2017','30-OCT-2017',26);
INSERT INTO assignment
VALUES(1084,'438-TEC',2016022204,'10-OCT-2017','31-OCT-2017',52);
INSERT INTO assignment
VALUES(1087,'438-TEC',2014111611,'10-OCT-2017','31-OCT-2017',142);
INSERT INTO assignment
VALUES(1094,'438-TEC',2009031713,'10-OCT-2017','31-OCT-2017',75);
INSERT INTO assignment
VALUES(1097,'438-TEC',2010110401,'10-OCT-2017','31-OCT-2017',81);
INSERT INTO assignment
VALUES(1103,'901-BAC',2007030122,'1-OCT-2017','31-OCT-2017',85);
INSERT INTO assignment
VALUES(1006,'065-MOS',2016012911,'1-OCT-2017','31-OCT-2017',135);
INSERT INTO assignment
VALUES(1109,'065-MOS',2016012911,'1-NOV-2017','30-NOV-2017',51);
INSERT INTO assignment
VALUES(1113,'901-BAC',2015010611,'1-NOV-2017','30-NOV-2017',16);
INSERT INTO assignment
VALUES(1117,'438-TEC',2009031713,'10-NOV-2017','30-NOV-2017',8);
INSERT INTO assignment
VALUES(1119,'438-TEC',2010110401,'10-NOV-2017','30-NOV-2017',10);
INSERT INTO assignment
VALUES(1123,'438-TEC',2014111611,'10-NOV-2017','30-NOV-2017',66);
INSERT INTO assignment
VALUES(1126,'438-TEC',2016022204,'10-NOV-2017','30-NOV-2017',6);
INSERT INTO assignment
VALUES(1127,'438-TEC',2008110514,'10-NOV-2017','30-NOV-2017',14);
INSERT INTO assignment
VALUES(1131,'438-TEC',2008110514,'1-DEC-2017',NULL,NULL);
INSERT INTO assignment
VALUES(1132,'438-TEC',2016022204,'1-DEC-2017',NULL,NULL);
INSERT INTO assignment
VALUES(1133,'438-TEC',2014111611,'1-DEC-2017',NULL,NULL);
INSERT INTO assignment
VALUES(1134,'438-TEC',2009031713,'1-DEC-2017',NULL,NULL);

```

```
INSERT INTO assignment
VALUES(1135,'438-TEC',2010110401,'1-DEC-2017',NULL,NULL);
INSERT INTO assignment
VALUES(1136,'065-MOS',2016012911,'1-DEC-2017',NULL,NULL);
```

PART II A - Displaying table content

```
SQL> SELECT *  
      2 FROM skill;
```

CODE	DESCRIPTION
1	Project management
2	Negotiation
3	Data analyst
4	Financial management
5	Programming
6	Database administrator
7	Digital marketing

7 rows selected.

```
SQL> SELECT *  
      2 FROM department;
```

DEPT_CODE	NAME	LOCATION	PHONE	MANAGER_ID
1	Executive management	New York City	7185432345	2015071401
3	Human resources	New York City	718-217-8932	2016012911
5	Finance	Boston	774-790-9182	2007030122
6	Accounting	Boston	774-813-9013	2004011708
8	Production	Chicago	312-212-6378	2017110318
12	Purchasing	Boston	774-124-8456	2009031713
16	R and D	San Francisco	415-890-1234	2010110401

7 rows selected.

```
SQL> select *
      2  from employee;
```

EMP_NUM	EMP_LAST	EMP_FIRST	DOB	HIRE_DATE	SUPER_ID	DEPT_CODE
2015071401	Aguilera	Christina	18-DEC-80	14-JUL-15		1
2016012911	Timberlake	Justin	31-DEC-81	29-JAN-16	2015071401	3
2007030122	Spears	Britney	02-DEC-81	01-MAR-07	2015071401	5
2004011708	Knowles	Beyonce	04-SEP-81	17-JAN-04	2015071401	6
2017110318	McKnight	Brian	05-JUN-69	03-NOV-17	2015071401	8
2009031713	Lachey	Nick	09-NOV-73	17-MAR-09	2015071401	12
2010110401	Carter	Aaron	07-DEC-87	04-NOV-10	2015071401	16
2008110514	Martin	Ricky	24-OCT-71	05-NOV-08	2015071401	12
2012041513	Lopez	Jennifer	24-DEC-69	15-APR-12	2015071401	3
2011011012	Smith	Will	25-SEP-68	10-JAN-11	2015071401	16
2012112604	Chenna	Sathwik	19-AUG-83	26-NOV-12	2016012911	3
2013121601	Jilla	Karthik	29-NOV-84	16-DEC-13	2016012911	3
2014062401	Baba	Naseer	22-NOV-84	24-JUN-14	2016012911	3
2015010611	Gupta	Chetna	09-JUL-82	06-JAN-15	2007030122	5
2017031204	Chilkuri	Nagarjuna	22-JAN-80	12-MAR-17	2007030122	5
2016082803	Arora	Abhilahsa	10-FEB-81	28-AUG-16	2007030122	5
2014111611	Yerragopu	Chandu	19-APR-80	16-NOV-14	2004011708	6
2015010605	Nanduri	Poojitha	25-SEP-82	06-JAN-15	2004011708	6
2016022204	Varma	Aditya	06-MAR-81	22-FEB-16	2004011708	6
2012032505	Kowkuntla	Venky	29-APR-89	25-MAR-12	2017110318	8
2013041613	KSS	Harish	23-MAY-88	16-APR-13	2017110318	8
2014050821	Kothakota	Aditya	22-FEB-80	08-MAY-14	2017110318	8
2015062807	Turlapati	Prabhat	09-JAN-81	28-JUN-15	2009031713	12
2015071803	Krishna	Priyusha	18-JUL-82	18-JUL-15	2009031713	12
2016081411	Devnani	Nikhil	16-JUN-81	14-AUG-16	2009031713	12
2017091708	Boone	Breah	11-JAN-80	17-SEP-17	2010110401	16
2015100506	William	Taft	12-DEC-81	05-OCT-15	2010110401	16

27 rows selected.

```
SQL> select *
      2 from training;
```

TRAIN_NUM	CODE	EMP_NUM	DATE_ACQUIRED	NAME	COMMENTS
11	6	2011011012	26-NOV-13	Introduction to database management	One day course
12	6	2009031713	26-NOV-13	Introduction to database management	One day course
13	6	2008110514	26-NOV-13	Introduction to database management	One day course
14	6	2007030122	26-NOV-13	Introduction to database management	One day course
15	6	2010110401	26-NOV-13	Introduction to database management	One day course
16	6	2012032505	26-NOV-13	Introduction to database management	One day course
25	6	2012032505	16-DEC-14	Advanced database management	Pre-requisite: DB1
36	2	2009031713	16-APR-15	Negotiations with clients	Weekend intensive
37	2	2014111611	16-APR-15	Negotiations with clients	Weekend intensive
38	2	2004011708	16-APR-15	Negotiations with clients	Weekend intensive
39	2	2010110401	16-APR-15	Negotiations with clients	Weekend intensive
42	1	2014111611	24-JUN-15	Project management essentials	Three-part series
43	1	2014050821	24-JUN-15	Project management essentials	Three-part series
44	1	2013041613	24-JUN-15	Project management essentials	Three-part series
55	7	2013041613	06-JAN-16	Social media marketing	Lunchtime session
56	7	2015071803	06-JAN-16	Social media marketing	Lunchtime session
57	7	2015010611	06-JAN-16	Social media marketing	Lunchtime session
58	7	2014062401	06-JAN-16	Social media marketing	Lunchtime session
67	5	2015062807	08-MAY-16	How to be a programmer	Lunchtime session
68	5	2011011012	08-MAY-16	How to be a programmer	Lunchtime session
69	5	2009031713	08-MAY-16	How to be a programmer	Lunchtime session
70	1	2015071401	08-MAY-16	Advanced project management	One day course
71	1	2016012911	08-MAY-16	Advanced project management	One day course
72	1	2017110318	08-MAY-16	Advanced project management	One day course
73	1	2008110514	08-MAY-16	Advanced project management	One day course
74	1	2014111611	08-MAY-16	Advanced project management	One day course
75	1	2012032505	08-MAY-16	Advanced project management	One day course
76	1	2014050821	08-MAY-16	Advanced project management	One day course
77	1	2016081411	08-MAY-16	Advanced project management	One day course
80	3	2012032505	25-MAY-16	Analyzing data like a boss	Lunchtime session
81	3	2012112604	25-MAY-16	Analyzing data like a boss	Lunchtime session
82	3	2007030122	25-MAY-16	Analyzing data like a boss	Lunchtime session
85	7	2015062807	12-JAN-17	Marketing for print	Lunchtime session
86	7	2016081411	12-JAN-17	Marketing for print	Lunchtime session
87	7	2016022204	12-JAN-17	Marketing for print	Lunchtime session
90	2	2015071803	22-FEB-17	Negotiations with clients	Weekend intensive
96	4	2017031204	28-AUG-17	Finance for beginners	Half day course
97	4	2016022204	28-AUG-17	Finance for beginners	Half day course
98	4	2016081411	28-AUG-17	Finance for beginners	Half day course

39 rows selected.

```
SQL> select *
      2  from client;
```

CLIENT_ID	NAME	STREET	CITY	STATE	ZIP_CODE	INDUSTRY	WEB_ADDRESS	PHONE	CONTACT_NAME
BAC21	Bank of America - ATL	435 Peachtree Avenue	Atlanta	GA	30301	Banking	bankofamerica.com	526-526-5555	Warren Buffett
BAC34	Bank of America - PIT	47 Forbes Avenue	Pittsburgh	PA	15213	Banking	bankofamerica.com	475-598-6324	Jack Bogle
BAC65	Bank of America - SEA	999 Pike Place	Seattle	WA	98105	Banking	bankofamerica.com	638-962-4256	Paul Tudor Jones
JPM02	JP Morgan - NYC	785 W 121st	New York City	NY	10007	Finance	jpmorgan.com	345-578-8889	George Soros
JPM05	JP Morgan - CHI	45 Wabash Avenue	Chicago	IL	60612	Finance	jpmorgan.com	123-526-8579	Ray Dalio
CRS07	Credit Suisse - NYC	57 Fashion Avenue	New York City	NY	10004	Finance	creditsuisse.com	634-748-9634	Carl Icahn
CRS11	Credit Suisse - SF	5246 Geary Boulevard	San Francisco	CA	94112	Finance	creditsuisse.com	410-526-0014	David Swensen
BNY03	Bank of New York Mellon	524354 W 52nd Street	New York City	NY	10020	Banking	bnny.com	417-859-4689	Mary Callahan
MOS01	Morgan Stanley	5123 Wall Street	New York City	NY	10027	Finance	morganstanley.com	635-685-7586	Charles Schwab
MOR01	Morningstar	2 Chicago Avenue	Chicago	IL	60176	Finance	morningstar.com	124-546-8596	John Templeton

10 rows selected.

```
SQL> select *
      2  from project;
```

PROJ_NUMBER	NAME	START_DATE	TOTAL_COST	DEPT_CODE	CLIENT_ID
145-BAC	BOA Account reconciliation	18-MAY-16	20000	5	BAC21
901-BAC	BOA Lean operations	07-JAN-17		5	BAC21
145-JPM	JPM Account reconciliation	16-FEB-16	200000	6	JPM02
211-JPM	JPM Financial consolidation	18-MAY-12	50000	5	JPM05
014-CRS	CRS Account rationalization	25-JAN-11	65000	6	CRS11
114-CRS	CRS Process improvement	07-JUN-16	100000	5	CRS11
122-BNY	BNY Special project	05-OCT-16		16	BNY03
065-MOS	MOS Account reconciliation	18-JUL-12	150000	5	MOS01
123-MOS	MOS Financial consolidation	05-AUG-16	750000	6	MOS01
226-MOS	MOS Strategic tax planning	04-JUN-16		5	MOS01
438-TEC	Big Data Analytics	04-SEP-16		16	JPM05

11 rows selected.

```
SQL> select *
      2  from assignment;
```

ASSIGN_NUM	PROJ_NUMBER	EMP_NUM	DATE_ASSI	DATE_ENDE	HOURS_USED
984	145-JPM	2012112604	06-MAR-16	17-MAR-17	6
991	122-BNY	2014111611	17-OCT-16	31-OCT-16	48
1000	901-BAC	2007030122	01-MAY-17	31-MAY-17	82
1001	901-BAC	2015010611	01-MAY-17	31-MAY-17	155
1002	065-MOS	2016012911	01-MAY-17	31-MAY-17	148
1010	145-BAC	2014111611	04-JUN-17	30-JUN-17	111
1012	901-BAC	2007030122	01-JUN-17	30-JUN-17	160
1013	901-BAC	2015010611	01-JUN-17	30-JUN-17	65
1020	145-BAC	2014111611	01-JUL-17	31-JUL-17	65
1023	145-BAC	2012112604	01-JUL-17	31-JUL-17	86
1029	065-MOS	2016012911	01-JUL-17	31-JUL-17	96
1034	901-BAC	2007030122	01-AUG-17	31-AUG-17	24
1042	065-MOS	2016012911	01-AUG-17	31-AUG-17	25
1044	145-BAC	2014111611	01-AUG-17	31-AUG-17	48
1045	145-BAC	2012112604	01-AUG-17	31-AUG-17	96
1046	145-BAC	2009031713	01-AUG-17	31-AUG-17	48
1051	065-MOS	2016012911	01-SEP-17	30-SEP-17	124
1054	438-TEC	2010110401	10-SEP-17	30-SEP-17	95
1057	438-TEC	2009031713	10-SEP-17	30-SEP-17	56
1059	438-TEC	2014111611	10-SEP-17	30-SEP-17	122
1072	438-TEC	2016022204	10-SEP-17	30-SEP-17	74
1076	438-TEC	2008110514	10-SEP-17	30-SEP-17	85
1082	438-TEC	2008110514	10-OCT-17	30-OCT-17	26
1084	438-TEC	2016022204	10-OCT-17	31-OCT-17	52
1087	438-TEC	2014111611	10-OCT-17	31-OCT-17	142
1094	438-TEC	2009031713	10-OCT-17	31-OCT-17	75
1097	438-TEC	2010110401	10-OCT-17	31-OCT-17	81
1103	901-BAC	2007030122	01-OCT-17	31-OCT-17	85
1006	065-MOS	2016012911	01-OCT-17	31-OCT-17	135
1109	065-MOS	2016012911	01-NOV-17	30-NOV-17	51
1113	901-BAC	2015010611	01-NOV-17	30-NOV-17	16
1117	438-TEC	2009031713	10-NOV-17	30-NOV-17	8
1119	438-TEC	2010110401	10-NOV-17	30-NOV-17	10
1123	438-TEC	2014111611	10-NOV-17	30-NOV-17	66
1126	438-TEC	2016022204	10-NOV-17	30-NOV-17	6
1127	438-TEC	2008110514	10-NOV-17	30-NOV-17	14
1131	438-TEC	2008110514	01-DEC-17		
1132	438-TEC	2016022204	01-DEC-17		
1133	438-TEC	2014111611	01-DEC-17		
1134	438-TEC	2009031713	01-DEC-17		
1135	438-TEC	2010110401	01-DEC-17		
1136	065-MOS	2016012911	01-DEC-17		

42 rows selected.

PART II B - Queries

Query 1

```
SQL> SET LINESIZE 300
SQL> SET PAGESIZE 50
SQL> COLUMN employee format A35
SQL> COLUMN skill format A25
SQL> COLUMN 'date acquired' format A15
SQL> SELECT e.emp_num||': '||e.emp_first||' '||e.emp_last as "EMPLOYEE",
  2   s.description AS "SKILL",
  3   COUNT(t.train_num) as "NUMBER_OF_TRAININGS",
  4   MAX(t.date_acquired) as "DATE_ACQUIRED",
  5   ROUND(months_between(sysdate,max(t.date_acquired)),0) as "MONTHS_PASSED"
  6 FROM employee e
  7 LEFT JOIN (training t left join skill s on t.code=s.code) on t.emp_num=e.emp_num
  8 GROUP BY e.emp_num,t.code,s.description,e.emp_first,e.emp_last
  9 ORDER BY e.emp_num;
```

EMPLOYEE	SKILL	NUMBER_OF_TRAININGS	DATE_ACQUIRED	MONTHS_PASSED
2004011708: Beyonce Knowles	Negotiation	1	16-APR-15	32
2007030122: Britney Spears	Data analyst	1	25-MAY-16	18
	Database administrator	1	26-NOV-13	48
2008110514: Ricky Martin	Project management	1	08-MAY-16	19
	Database administrator	1	26-NOV-13	48
2009031713: Nick Lachey	Negotiation	1	16-APR-15	32
	Programming	1	08-MAY-16	19
	Database administrator	1	26-NOV-13	48
2010110401: Aaron Carter	Negotiation	1	16-APR-15	32
	Database administrator	1	26-NOV-13	48
2011011012: Will Smith	Programming	1	08-MAY-16	19
	Database administrator	1	26-NOV-13	48
2012032505: Venky Kowkuntla	Project management	1	08-MAY-16	19
	Data analyst	1	25-MAY-16	18
	Database administrator	2	16-DEC-14	36
2012041513: Jennifer Lopez		0		
2012112604: Sathwik Chenna	Data analyst	1	25-MAY-16	18
2013041613: Harish KSS	Project management	1	24-JUN-15	29
	Digital marketing	1	06-JAN-16	23
2013121601: Karthik Jilla		0		
2014050821: Aditya Kothakota	Project management	2	08-MAY-16	19
2014062401: Naseer Baba	Digital marketing	1	06-JAN-16	23
2014111611: Chandu Yerragopu	Project management	2	08-MAY-16	19
	Negotiation	1	16-APR-15	32
2015010605: Poojitha Nanduri		0		
2015010611: Chetna Gupta	Digital marketing	1	06-JAN-16	23
2015062807: Prabhat Turlapati	Programming	1	08-MAY-16	19
	Digital marketing	1	12-JAN-17	11
2015071401: Christina Aguilera	Project management	1	08-MAY-16	19
2015071803: Priyusha Krishna	Negotiation	1	22-FEB-17	9
	Digital marketing	1	06-JAN-16	23
2015100506: Taft William		0		
2016012911: Justin Timberlake	Project management	1	08-MAY-16	19
2016022204: Aditya Varma	Financial management	1	28-AUG-17	3
	Digital marketing	1	12-JAN-17	11
2016081411: Nikhil Devnani	Project management	1	08-MAY-16	19
	Financial management	1	28-AUG-17	3
	Digital marketing	1	12-JAN-17	11
2016082803: Abhilahsa Arora		0		
2017031204: Nagarjuna Chilkuri	Financial management	1	28-AUG-17	3
2017091708: Breah Boone		0		
2017110318: Brian McKnight	Project management	1	08-MAY-16	19

42 rows selected.

Query 2

```
SQL> COLUMN employee format A45
SQL> COLUMN 'department name' format A30
SQL> SELECT LEVEL,
  2 LPAD(' ', 3*(LEVEL - 1)) || emp_num || ': ' ||
  3 emp_first || ' ' || emp_last as "EMPLOYEE",
  4 d.name as "DEPARTMENT_NAME"
  5 FROM employee e
  6 LEFT JOIN department d on e.dept_code=d.dept_code
  7 START WITH emp_num = 2015071401
  8 CONNECT BY PRIOR emp_num = super_id;
```

LEVEL	EMPLOYEE	DEPARTMENT_NAME
1	2015071401: Christina Aguilera	Executive management
2	2004011708: Beyonce Knowles	Accounting
3	2014111611: Chandu Yerragopu	Accounting
3	2015010605: Poojitha Nanduri	Accounting
3	2016022204: Aditya Varma	Accounting
2	2007030122: Britney Spears	Finance
3	2015010611: Chetna Gupta	Finance
3	2016082803: Abhilasha Arora	Finance
3	2017031204: Nagarjuna Chilkuri	Finance
2	2008110514: Ricky Martin	Purchasing
2	2009031713: Nick Lachey	Purchasing
3	2015062807: Prabhat Turlapati	Purchasing
3	2015071803: Priyusha Krishna	Purchasing
3	2016081411: Nikhil Devnani	Purchasing
2	2010110401: Aaron Carter	R and D
3	2015100506: Taft William	R and D
3	2017091708: Breah Boone	R and D
2	2011011012: Will Smith	R and D
2	2012041513: Jennifer Lopez	Human resources
2	2016012911: Justin Timberlake	Human resources
3	2012112604: Sathwik Chenna	Human resources
3	2013121601: Karthik Jilla	Human resources
3	2014062401: Naseer Baba	Human resources
2	2017110318: Brian McKnight	Production
3	2012032505: Venky Kowkuntla	Production
3	2013041613: Harish KSS	Production
3	2014050821: Aditya Kothakota	Production

27 rows selected.

Query 3

```
SQL> COLUMN 'PROJECT START DATE' format A25
SQL> COLUMN month format A12
SQL> BREAK ON REPORT ON "PROJECT NAME" ON "PROJECT START DATE" SKIP 1
SQL> COMPUTE SUM LABEL 'Total' OF "EMPLOYEES ASSIGNED" ON "PROJECT NAME" SKIP 1
SQL> COMPUTE SUM LABEL 'Total ' OF "MONTHLY HOURS" ON "PROJECT NAME" SKIP 1
SQL> SELECT p.name as "PROJECT_NAME",
  2 p.start_date as "PROJECT_START_DATE",
  3 TO_CHAR(a.date_assigned,'mm')||'-'||initcap(to_char(a.date_assigned,'month')) as "MONTH",
  4 COUNT(a.emp_num) as "EMPLOYEES ASSIGNED",
  5 SUM(a.hours_used) as "MONTHLY_HOURS"
  6 FROM assignment a
  7 JOIN project p on a.proj_number=p.proj_number
  8 WHERE p.total_cost is null
  9 GROUP BY p.name, p.start_date, to_char(a.date_assigned,'mm')||'-'||initcap(to_char(a.date_assigned,'month'))
 10 ORDER BY p.name, p.start_date, MONTH;
```

PROJECT_NAME	PROJECT_START_DATE	MONTH	EMPLOYEES_ASSIGNED	MONTHLY_HOURS
BNY Special project	05-OCT-16	10-October	1	48
*****			-----	-----
Total			1	48
BOA Lean operations	07-JAN-17	05-May	2	237
		06-June	2	225
		08-August	1	24
		10-October	1	85
		11-November	1	16
*****			-----	-----
Total			7	587
Big Data Analytics	04-SEP-16	09-September	5	432
		10-October	5	376
		11-November	5	104
		12-December	5	
*****			-----	-----
Total			20	912

10 rows selected.

Query 4

```
SQL> ALTER TABLE employee
2 ADD bonus_amt number(5);
```

Table altered.

```
SQL> UPDATE employee
2 SET bonus_amt = 200*
3 (SELECT COUNT(distinct proj_number)as number_of_projects
4 FROM project p
5 WHERE extract(year from start_date)=extract(year from sysdate)-1
6 AND proj_number IN
7 (SELECT proj_number from assignment group BY proj_number having sum(hours_used)>40));
```

27 rows updated.

```
SQL> SET PAGESIZE 300
SQL> SET LINESIZE 300
SQL> SELECT *
2 FROM employee;
```

EMP_NUM	EMP_LAST	EMP_FIRST	DOB	HIRE_DATE	SUPER_ID	DEPT_CODE	BONUS_AMT
2015071401	Aguilera	Christina	18-DEC-80	14-JUL-15		1	600
2016012911	Timberlake	Justin	31-DEC-81	29-JAN-16	2015071401	3	600
2007030122	Spears	Britney	02-DEC-81	01-MAR-07	2015071401	5	600
2004011708	Knowles	Beyonce	04-SEP-81	17-JAN-04	2015071401	6	600
2017110318	McKnight	Brian	05-JUN-69	03-NOV-17	2015071401	8	600
2009031713	Lachey	Nick	09-NOV-73	17-MAR-09	2015071401	12	600
2010110401	Carter	Aaron	07-DEC-87	04-NOV-10	2015071401	16	600
2008110514	Martin	Ricky	24-OCT-71	05-NOV-08	2015071401	12	600
2012041513	Lopez	Jennifer	24-DEC-69	15-APR-12	2015071401	3	600
2011011012	Smith	Will	25-SEP-68	10-JAN-11	2015071401	16	600
2012112604	Chenna	Sathwik	19-AUG-83	26-NOV-12	2016012911	3	600
2013121601	Jilla	Karthik	29-NOV-84	16-DEC-13	2016012911	3	600
2014062401	Baba	Naseer	22-NOV-84	24-JUN-14	2016012911	3	600
2015010611	Gupta	Chetna	09-JUL-82	06-JAN-15	2007030122	5	600
2017031204	Chilkuri	Nagarjuna	22-JAN-80	12-MAR-17	2007030122	5	600
2016082803	Arora	Abhilasha	10-FEB-81	28-AUG-16	2007030122	5	600
2014111611	Yerragopu	Chandu	19-APR-80	16-NOV-14	2004011708	6	600
2015010605	Nanduri	Poojitha	25-SEP-82	06-JAN-15	2004011708	6	600
2016022204	Varma	Aditya	06-MAR-81	22-FEB-16	2004011708	6	600
2012032505	Kowkuntla	Venky	29-APR-89	25-MAR-12	2017110318	8	600
2013041613	KSS	Harish	23-MAY-88	16-APR-13	2017110318	8	600
2014050821	Kothakota	Aditya	22-FEB-80	08-MAY-14	2017110318	8	600
2015062807	Turlapati	Prabhat	09-JAN-81	28-JUN-15	2009031713	12	600
2015071803	Krishna	Priyusha	18-JUL-82	18-JUL-15	2009031713	12	600
2016081411	Devnani	Nikhil	16-JUN-81	14-AUG-16	2009031713	12	600
2017091708	Boone	Breah	11-JAN-80	17-SEP-17	2010110401	16	600
2015100506	William	Taft	12-DEC-81	05-OCT-15	2010110401	16	600

27 rows selected.

Query 5

```
SQL> COLUMN employee format A30
SQL> COLUMN 'hire_date' format A15
SQL> COLUMN 'training_name' format A35
SQL> COLUMN 'date_acquired' format A15
SQL> BREAK ON employee on hire_date
SQL> SELECT e.emp_num||': '||e.emp_first||' '||e.emp_last as employee,
  2   e.hire_date,
  3   nvl2(t.train_num,t.train_num||': '||t.name,null) as training_name,
  4   t.date_acquired,
  5   abs(e.hire_date-t.date_acquired) as number_of_days,
  6   COUNT(distinct a.proj_number) as number_of_projects
  7 FROM(employee e left join assignment a on e.emp_num=a.emp_num)
  8 left join training t on e.emp_num=t.emp_num
  9 left join assignment on e.emp_num=a.emp_num
 10 WHERE extract(year from hire_date)=extract(year from sysdate)-1
 11 GROUP BY e.emp_num, e.emp_first,e.emp_last,e.hire_date,t.train_num,t.name,t.date_acquired;
```

EMPLOYEE	HIRE_DATE	TRAINING_NAME	DATE_ACQUIRED	NUMBER_OF_DAYS	NUMBER_OF_PROJECTS
2016012911: Justin Timberlake	29-JAN-16	71: Advanced project management	08-MAY-16	100	1
2016022204: Aditya Varma	22-FEB-16	87: Marketing for print	12-JAN-17	325	1
		97: Finance for beginners	28-AUG-17	553	1
2016081411: Nikhil Devnani	14-AUG-16	77: Advanced project management	08-MAY-16	98	0
		86: Marketing for print	12-JAN-17	151	0
		97: Finance for beginners	28-AUG-17	379	0
2016082803: Abhilahsa Arora	28-AUG-16	97: Finance for beginners	28-AUG-17	365	0

7 rows selected.

Query 6

```
SQL> COLUMN name format a30
SQL> COLUMN start_date format a20
SQL> COLUMN status format a20
SQL> SELECT name, start_date, case
  2   WHEN total_cost IS NULL THEN 'on-going'
  3   ELSE 'completed' end status
  4   FROM project
  5   WHERE proj_number IN (SELECT proj_number
  6   FROM assignment
  7   GROUP BY proj_number
  8   HAVING COUNT(distinct date_assigned) <>
  9   CEIL(ABS(months_between(TRUNC(MIN(date_assigned)) -
10   (TO_NUMBER(TO_CHAR(MIN(date_assigned), 'DD')) - 1),
11   add_months(TRUNC(MAX(date_assigned)) -
12   (TO_NUMBER(TO_CHAR(MAX(date_assigned), 'DD')) - 1), 1) -1)))));
```

NAME	START_DATE	STATUS
BOA Lean operations	07-JAN-17	on-going
MOS Account reconciliation	18-JUL-12	completed

Query 7

```
SQL> COLUMN quarter format a8;
SQL> COLUMN average_number_of_hours_used format a50
SQL> SELECT TO_CHAR(start_date,'q') AS Quarter,
  2   COUNT(distinct p.proj_number) AS No_of_projects,
  3   COUNT(DISTINCT a.emp_num) AS No_of_Employees,
  4   TO_char(round(sum(a.hours_used)/count( a.emp_num),2),999.99)
  5   AS Average_number_of_hours_used
  6   FROM project p
  7   LEFT JOIN assignment a ON p.proj_number = a.proj_number
  8   WHERE EXTRACT(year from p.start_date)=EXTRACT(year from sysdate)-1
  9   GROUP BY TO_CHAR(p.start_date,'q')
 10  ORDER BY TO_CHAR(p.start_date,'q');
```

QUARTER	NO_OF_PROJECTS	NO_OF_EMPLOYEES	AVERAGE_NUMBER_OF_HOURS_USED
1	1	1	6.00
2	3	3	75.67
3	2	5	45.60
4	1	1	48.00

Query 8

```
SQL> COLUMN employee HEADING 'Employee Name' FORMAT a20
SQL> COLUMN code1date heading 'Latest|Date|Acquired' format a9
SQL> COLUMN code2date heading 'Latest|Date|Acquired' format a9
SQL> COLUMN code3date heading 'Latest|Date|Acquired' format a9
SQL> COLUMN code4date heading 'Latest|Date|Acquired' format a9
SQL> COLUMN code5date heading 'Latest|Date|Acquired' format a9
SQL> COLUMN code6date heading 'Latest|Date|Acquired' format a9
SQL> COLUMN code7date heading 'Latest|Date|Acquired' format a9
SQL> COLUMN code1 heading 'Project|Management'
SQL> COLUMN code2 heading 'Negotiation'
SQL> COLUMN code3 heading 'Data|Analyst'
SQL> COLUMN code5 heading 'Programming'
SQL> COLUMN code6 heading 'Database|Administrator'
SQL> COLUMN code7 heading 'Digital|Marketing'
SQL> COLUMN code4 heading 'Financial|Management'
SQL> SELECT main_table.emp_num,
2         Nvl2(main_table.emp_num, e.emp_first || ' ' || e.emp_last, 'Number of Trainings: ') AS employee,
3         code1,          code1date,
4         code2,          code2date,
5         code3,          code2date,
6         code4,          code4date,
7         code5,          code5date,
8         code6,          code6date,
9         code7,          code7date
10  FROM    (SELECT t.emp_num,
11              Nvl(SUM(Decode(t.code, '1', 1, 0)), 0)          code1,
12              Decode(t.emp_num, NULL, NULL, Max(Decode(t.code, '1', date_acquired, NULL))) AS code1DATE,
13              Nvl(SUM(Decode(t.code, '2', 1, 0)), 0)          code2,
14              Decode(t.emp_num, NULL, NULL, Max(Decode(t.code, '2', date_acquired, NULL))) AS code2DATE,
15              Nvl(SUM(Decode(t.code, '3', 1, 0)), 0)          code3,
16              Decode(t.emp_num, NULL, NULL, Max(Decode(t.code, '3', date_acquired, NULL))) AS code3DATE,
17              Nvl(SUM(Decode(t.code, '4', 1, 0)), 0)          code4,
18              Decode(t.emp_num, NULL, NULL, Max(Decode(t.code, '4', date_acquired, NULL))) AS code4DATE,
19              Nvl(SUM(Decode(t.code, '5', 1, 0)), 0)          code5,
20              Decode(t.emp_num, NULL, NULL, Max(Decode(t.code, '5', date_acquired, NULL))) AS code5DATE,
21              Nvl(SUM(Decode(t.code, '6', 1, 0)), 0)          code6,
```

```

22      Decode(t.emp_num, NULL, NULL,Max(Decode(t.code, '6', date_acquired, NULL))) AS code6DATE,
23      Nvl(SUM(Decode(t.code, '7', 1, 0)), 0)                                code7,
24      Decode(t.emp_num, NULL, NULL,Max(Decode(t.code, '7', date_acquired, NULL))) AS code7DATE,
25      Count(code)                                                            AS total
26  FROM    training t
27  GROUP BY grouping sets ( emp_num, ( ) ) main_table
28  left join employee e
29      ON main_table.emp_num = e.emp_num;

```

EMP_NUM	Employee Name	Project Management	Latest Date Acquired	Negotiation	Latest Date Acquired	Data Analyst	Latest Date Acquired	Financial Management	Latest Date Acquired	Programming	Latest Date Acquired	Database Administrator	Latest Date Acquired	Digital Marketing	Latest Date Acquired
2015071401	Christina Aguilera	1	08-MAY-16	0	0	0	0	0	0	0	0	0	0	0	
2016012911	Justin Timberlake	1	08-MAY-16	0	0	0	0	0	0	0	0	0	0	0	
2007030122	Britney Spears	0	0	0	1	0	0	0	0	0	0	1	26-NOV-13	0	
2004011708	Beyonce Knowles	0	0	1	16-APR-15	0	16-APR-15	0	0	0	0	0	0	0	
2017110318	Brian McKnight	1	08-MAY-16	0	0	0	0	0	0	0	0	0	0	0	
2009031713	Nick Lachey	0	0	1	16-APR-15	0	16-APR-15	0	0	1	08-MAY-16	1	26-NOV-13	0	
2010110401	Aaron Carter	0	0	1	16-APR-15	0	16-APR-15	0	0	0	0	1	26-NOV-13	0	
2008110514	Ricky Martin	1	08-MAY-16	0	0	0	0	0	0	0	0	1	26-NOV-13	0	
2011011012	Will Smith	0	0	0	0	0	0	0	0	1	08-MAY-16	1	26-NOV-13	0	
2012112604	Sathwik Chenna	0	0	0	1	0	0	0	0	0	0	0	0	0	
2014062401	Naseer Baba	0	0	0	0	0	0	0	0	0	0	0	0	1	06-JAN-16
2015010611	Chetna Gupta	0	0	0	0	0	0	0	0	0	0	0	0	1	06-JAN-16
2017031204	Nagarjuna Chilkuri	0	0	0	0	0	0	1	28-AUG-17	0	0	0	0	0	
2014111611	Chandu Yerragopu	2	08-MAY-16	1	16-APR-15	0	16-APR-15	0	0	0	0	0	0	0	
2016022204	Aditya Varma	0	0	0	0	0	0	1	28-AUG-17	0	0	0	0	1	12-JAN-17
2012032505	Venky Kowkuntla	1	08-MAY-16	0	0	1	0	0	0	0	0	2	16-DEC-14	0	
2013041613	Harish KSS	1	24-JUN-15	0	0	0	0	0	0	0	0	0	0	1	06-JAN-16
2014050821	Aditya Kothakota	2	08-MAY-16	0	0	0	0	0	0	0	0	0	0	0	
2015062807	Prabhat Turlapati	0	0	0	0	0	0	0	0	1	08-MAY-16	0	0	1	12-JAN-17
2015071803	Priyusha Krishna	0	0	1	22-FEB-17	0	22-FEB-17	0	0	0	0	0	0	1	06-JAN-16
2016081411	Nikhil Devnani	1	08-MAY-16	0	0	0	0	1	28-AUG-17	0	0	0	0	1	12-JAN-17
Number of Trainings:		11		5		3		3		3		7		7	

22 rows selected.

Query 9

```

SQL>
SQL> SELECT a.dept_code|| ': ' || a.NAME      AS Department,
2         a.code|| ': ' || a.description    AS skill,
3         Nvl(b.num_trainings, 0)           AS "NUMBER OF TRAININGS",
4         Dense_rank() OVER ( partition BY a.dept_code ORDER BY Nvl(b.num_trainings, 0) DESC ) AS rank
5 FROM   (SELECT dept_code,
6             NAME,
7             code,
8             description
9         FROM   department,
10        skill) a
11      LEFT JOIN (SELECT dept_code,  code,  Count(*) num_trainings
12                FROM   training t
13                LEFT JOIN employee e
14                      ON t.emp_num = e.emp_num
15                GROUP BY dept_code, code) b
16      ON a.dept_code = b.dept_code
17      AND a.code = b.code
18 ORDER BY a.dept_code, rank;

```

DEPARTMENT	SKILL	NUMBER OF TRAININGS	RANK
1: Executive management	1: Project management	1	1
	4: Financial management	0	2
	2: Negotiation	0	2
	3: Data analyst	0	2
	6: Database administrator	0	2
	7: Digital marketing	0	2
	5: Programming	0	2
3: Human resources	7: Digital marketing	1	1
	3: Data analyst	1	1
	1: Project management	1	1
	4: Financial management	0	2
	6: Database administrator	0	2
	5: Programming	0	2
5: Finance	2: Negotiation	0	2
	6: Database administrator	1	1
	3: Data analyst	1	1

	7: Digital marketing	1	1
	4: Financial management	1	1
	5: Programming	0	2
	2: Negotiation	0	2
	1: Project management	0	2
6: Accounting	1: Project management	2	1
	2: Negotiation	2	1
	7: Digital marketing	1	2
	4: Financial management	1	2
	6: Database administrator	0	3
	3: Data analyst	0	3
	5: Programming	0	3
8: Production	1: Project management	5	1
	6: Database administrator	2	2
	3: Data analyst	1	3
	7: Digital marketing	1	3
	2: Negotiation	0	4
	5: Programming	0	4
	4: Financial management	0	4
12: Purchasing	7: Digital marketing	3	1
	2: Negotiation	2	2
	6: Database administrator	2	2
	1: Project management	2	2
	5: Programming	2	2
	4: Financial management	1	3
	3: Data analyst	0	4
16: R and D	6: Database administrator	2	1
	2: Negotiation	1	2
	5: Programming	1	2
	3: Data analyst	0	3
	1: Project management	0	3
	7: Digital marketing	0	3
	4: Financial management	0	3

49 rows selected.

PART II C - Reporting

Query 1

```
SQL>
SQL> CREATE VIEW employee_information
2 AS
3 SELECT e.emp_num ||': ' ||e.emp_first ||' ' ||e.emp_last AS employee,
4 DECODE(e.super_id,NULL,NULL,e.super_id ||': ' ||s.emp_first ||' '||s.emp_last) AS supervisor,
5 DECODE(train_num,NULL,NULL,train_num ||': ' ||t.name) AS "TRAINING NAME",
6 date_acquired AS "TRAINING DATE",
7 Trim(To_char(Round(Months_between(SYSDATE, date_acquired), 0))) AS "NUMBER OF MONTHS"
8 FROM employee e
9 left join employee s
10 ON e.super_id = s.emp_num
11 left join training t
12 ON e.emp_num = t.emp_num;
SQL>
SQL> REM "EMPLOYEE INFORMATION REPORT" created ON december 4 2017
SQL> REM BY USER sathwik
SQL> SET feedback OFF linesize 150 pagesize 70
SQL> REM SET up the appropriate parameters TO increase readability
SQL> COLUMN employee heading 'EMPLOYEE' format A35
SQL> COLUMN supervisor heading 'SUPERVISOR' format A35
SQL> COLUMN "TRAINING NAME" heading 'TRAINING NAME' format A45
SQL> COLUMN "TRAINING DATE" heading 'TRAINING DATE' format A15
SQL> COLUMN "NUMBER OF MONTHS" heading 'NUMBER OF MONTHS' format A16
SQL> TTITLE center 'EMPLOYEE INFORMATION REPORT' SKIP 1
SQL> BTITLE center 'End of Employee Information Report' right 'Run By: ' SQL.USER format A7
SQL> BREAK ON report ON employee skip 1
SQL> COMPUTE count label 'Num of Trainings' OF "TRAINING NAME" ON employee
SQL> SELECT *
2 FROM employee_information;
```

EMPLOYEE	SUPERVISOR	EMPLOYEE INFORMATION REPORT TRAINING NAME	TRAINING DATE	NUMBER OF MONTHS
2011011012: Will Smith *****	2015071401: Christina Aguilera	11: Introduction to database management	26-NOV-13	48
Num of Trainings		1		
2009031713: Nick Lachey *****	2015071401: Christina Aguilera	12: Introduction to database management	26-NOV-13	48
Num of Trainings		1		
2008110514: Ricky Martin *****	2015071401: Christina Aguilera	13: Introduction to database management	26-NOV-13	48
Num of Trainings		1		
2007030122: Britney Spears *****	2015071401: Christina Aguilera	14: Introduction to database management	26-NOV-13	48
Num of Trainings		1		
2010110401: Aaron Carter *****	2015071401: Christina Aguilera	15: Introduction to database management	26-NOV-13	48
Num of Trainings		1		
2012032505: Venky Kowkuntla *****	2017110318: Brian McKnight 2017110318: Brian McKnight	16: Introduction to database management 25: Advanced database management	26-NOV-13 16-DEC-14	48 36
Num of Trainings		2		
2009031713: Nick Lachey *****	2015071401: Christina Aguilera	36: Negotiations with clients	16-APR-15	32
Num of Trainings		1		
2014111611: Chandu Yerragopu *****	2004011708: Beyonce Knowles	37: Negotiations with clients	16-APR-15	32
Num of Trainings		1		
2004011708: Beyonce Knowles *****	2015071401: Christina Aguilera	38: Negotiations with clients	16-APR-15	32
Num of Trainings		1		
2010110401: Aaron Carter *****	2015071401: Christina Aguilera	39: Negotiations with clients	16-APR-15	32
Num of Trainings		1		
2014111611: Chandu Yerragopu *****	2004011708: Beyonce Knowles	42: Project management essentials	24-JUN-15	29
Num of Trainings		1		

End of Employee Information Report

Run By: MARIA

EMPLOYEE	SUPERVISOR	TRAINING NAME	TRAINING DATE	NUMBER OF MONTHS
2014050821: Aditya Kothakota ***** Num of Trainings	2017110318: Brian McKnight	43: Project management essentials ----- 1	24-JUN-15	29
2013041613: Harish KSS ***** Num of Trainings	2017110318: Brian McKnight 2017110318: Brian McKnight	44: Project management essentials 55: Social media marketing ----- 2	24-JUN-15 06-JAN-16	29 23
2015071803: Priyusha Krishna ***** Num of Trainings	2009031713: Nick Lachey	56: Social media marketing ----- 1	06-JAN-16	23
2015010611: Chetna Gupta ***** Num of Trainings	2007030122: Britney Spears	57: Social media marketing ----- 1	06-JAN-16	23
2014062401: Naseer Baba ***** Num of Trainings	2016012911: Justin Timberlake	58: Social media marketing ----- 1	06-JAN-16	23
2015062807: Prabhat Turlapati ***** Num of Trainings	2009031713: Nick Lachey	67: How to be a programmer ----- 1	08-MAY-16	19
2011011012: Will Smith ***** Num of Trainings	2015071401: Christina Aguilera	68: How to be a programmer ----- 1	08-MAY-16	19
2009031713: Nick Lachey ***** Num of Trainings	2015071401: Christina Aguilera	69: How to be a programmer ----- 1	08-MAY-16	19
2015071401: Christina Aguilera ***** Num of Trainings		70: Advanced project management ----- 1	08-MAY-16	19
2016012911: Justin Timberlake ***** Num of Trainings	2015071401: Christina Aguilera	71: Advanced project management ----- 1	08-MAY-16	19
2017110318: Brian McKnight ***** Num of Trainings	2015071401: Christina Aguilera	72: Advanced project management ----- 1	08-MAY-16	19

End of Employee Information Report

Run By: MARIA

EMPLOYEE INFORMATION REPORT

EMPLOYEE	SUPERVISOR	TRAINING NAME	TRAINING DATE	NUMBER OF MONTHS
2008110514: Ricky Martin ***** Num of Trainings	2015071401: Christina Aguilera	73: Advanced project management ----- 1	08-MAY-16	19
2014111611: Chandu Yerragopu ***** Num of Trainings	2004011708: Beyonce Knowles	74: Advanced project management ----- 1	08-MAY-16	19
2012032505: Venky Kowkuntla ***** Num of Trainings	2017110318: Brian McKnight	75: Advanced project management ----- 1	08-MAY-16	19
2014050821: Aditya Kothakota ***** Num of Trainings	2017110318: Brian McKnight	76: Advanced project management ----- 1	08-MAY-16	19
2016081411: Nikhil Devnani ***** Num of Trainings	2009031713: Nick Lachey	77: Advanced project management ----- 1	08-MAY-16	19
2012032505: Venky Kowkuntla ***** Num of Trainings	2017110318: Brian McKnight	80: Analyzing data like a boss ----- 1	25-MAY-16	18
2012112604: Sathwik Chenna ***** Num of Trainings	2016012911: Justin Timberlake	81: Analyzing data like a boss ----- 1	25-MAY-16	18
2007030122: Britney Spears ***** Num of Trainings	2015071401: Christina Aguilera	82: Analyzing data like a boss ----- 1	25-MAY-16	18
2015062807: Prabhat Turlapati ***** Num of Trainings	2009031713: Nick Lachey	85: Marketing for print ----- 1	12-JAN-17	11
2016081411: Nikhil Devnani ***** Num of Trainings	2009031713: Nick Lachey	86: Marketing for print ----- 1	12-JAN-17	11
2016022204: Aditya Varma ***** Num of Trainings	2004011708: Beyonce Knowles	87: Marketing for print ----- 1	12-JAN-17	11

End of Employee Information Report

Run By: MARIA

EMPLOYEE INFORMATION REPORT				
EMPLOYEE	SUPERVISOR	TRAINING NAME	TRAINING DATE	NUMBER OF MONTHS
2015071803: Priyusha Krishna *****	2009031713: Nick Lachey	90: Negotiations with clients	22-FEB-17	10
Num of Trainings		1		
2017031204: Nagarjuna Chilkuri *****	2007030122: Britney Spears	96: Finance for beginners	28-AUG-17	3
Num of Trainings		1		
2016022204: Aditya Varma *****	2004011708: Beyonce Knowles	97: Finance for beginners	28-AUG-17	3
Num of Trainings		1		
2016081411: Nikhil Devnani *****	2009031713: Nick Lachey	98: Finance for beginners	28-AUG-17	3
Num of Trainings		1		
2015100506: Taft William *****	2010110401: Aaron Carter			
Num of Trainings		0		
2015010605: Poojitha Nanduri *****	2004011708: Beyonce Knowles			
Num of Trainings		0		
2013121601: Karthik Jilla *****	2016012911: Justin Timberlake			
Num of Trainings		0		
2012041513: Jennifer Lopez *****	2015071401: Christina Aguilera			
Num of Trainings		0		
2017091708: Brea Boone *****	2010110401: Aaron Carter			
Num of Trainings		0		
2016082803: Abhilasha Arora *****	2007030122: Britney Spears			
Num of Trainings		0		

End of Employee Information Report

Run By: MARIA

SQL>

Query 2

```
SQL> CREATE VIEW table_info_view
 2 AS
 3     SELECT a.table_name,
 4            a.column_name,
 5            b.constraint_name,
 6            Decode(c.constraint_type, 'C', 'CK or NN', 'P', 'PK', 'R', 'FK', 'U', 'UK', c.constraint_type)
 7 AS constraint_type,
 8     c.search_condition,
 9     Decode(fk_table.table_name, NULL, NULL, Trim(fk_table.table_name||' and '||fk_table.column_name))
10 AS foreign_table_column
11 FROM   user_tab_columns a
12        left join user_cons_columns b
13              ON a.table_name = b.table_name
14              AND a.column_name = b.column_name
15        left join user_constraints c
16              ON b.constraint_name = c.constraint_name
17        left join (SELECT a.constraint_name,
18                          a.r_constraint_name,
19                          b.table_name,
20                          b.column_name
21                  FROM    user_constraints a
22                          left join user_cons_columns b
23                                ON a.r_constraint_name = b.constraint_name
24                  WHERE   a.constraint_type = 'R') fk_table
25              ON b.constraint_name = fk_table.constraint_name
26 ORDER BY a.table_name,
27          a.column_id;
```

View created.

```
SQL> REM "TABLES AND COLUMNS CONSTRAINT INFORMATION REPORT" created on December 4 2017
SQL> REM by user SATHWIK
SQL> SET FEEDBACK OFF LINESIZE 150 PAGESIZE 55
SQL> REM set up the appropriate parameters to increase readability
SQL> COLUMN TABLE_NAME HEADING 'TABLE_NAME' FORMAT A20
SQL> COLUMN COLUMN_NAME HEADING 'COLUMN_NAME' FORMAT A20
SQL> COLUMN CONSTRAINT_NAME HEADING 'CONSTRAINT_NAME' FORMAT A30
SQL> COLUMN CONSTRAINT_TYPE HEADING 'CONSTRAINT_TYPE' FORMAT A15
SQL> COLUMN SEARCH_CONDITION HEADING 'SEARCH_CONDITION' FORMAT A30
SQL> COLUMN FOREIGN_TABLE_COLUMN HEADING 'FOREIGN_TABLE_COLUMN' FORMAT A25
SQL> TTITLE CENTER 'TABLES AND COLUMNS INFORMATION REPORT'
SQL> BTITLE CENTER 'End of Tables and Columns Information Report' RIGHT 'Run By: ' SQL.USER FORMAT A7
SQL> BREAK ON REPORT ON TABLE_NAME SKIP 1
SQL> COMPUTE COUNT LABEL 'Num of Constraints' OF CONSTRAINT_NAME ON TABLE_NAME
SQL> SELECT * FROM table_info_view;
```

TABLES AND COLUMNS INFORMATION REPORT

TABLE_NAME	COLUMN_NAME	CONSTRAINT_NAME	CONSTRAINT_TYPE	SEARCH_CONDITION	FOREIGN_TABLE_COLUMN
ASSIGNMENT	ASSIGN_NUM	SYS_C007716	PK		
	PROJ_NUMBER	SYS_C007717	FK		PROJECT and PROJ_NUMBER
	EMP_NUM	SYS_C007718	FK		EMPLOYEE and EMP_NUM
	DATE_ASSIGNED	ASSIGNMENT_DATE_ENDED_CK	CK or NN	date_ended>=date_assigned	
	DATE_ENDED	ASSIGNMENT_DATE_ENDED_CK	CK or NN	date_ended>=date_assigned	
	HOURS_USED	ASSIGNMENT_HOURS_USED_CK	CK or NN	hours_used<=180	
*****		-----			
Num of Constraints			6		
CLIENT	CLIENT_ID	SYS_C007709	PK		
	NAME	SYS_C007702	CK or NN	"NAME" IS NOT NULL	
	STREET	SYS_C007703	CK or NN	"STREET" IS NOT NULL	
	CITY	SYS_C007704	CK or NN	"CITY" IS NOT NULL	
	STATE	SYS_C007705	CK or NN	"STATE" IS NOT NULL	
	ZIP_CODE	SYS_C007706	CK or NN	"ZIP_CODE" IS NOT NULL	
	INDUSTRY				
	WEB_ADDRESS				
	PHONE	SYS_C007707	CK or NN	"PHONE" IS NOT NULL	
	CONTACT_NAME	SYS_C007708	CK or NN	"CONTACT_NAME" IS NOT NULL	
*****		-----			
Num of Constraints			8		
DEPARTMENT	DEPT_CODE	SYS_C007690	PK		
	NAME				
	LOCATION				
	PHONE				
	MANAGER_ID				
*****		-----			
Num of Constraints			1		
EMPLOYEE	EMP_NUM	SYS_C007693	PK		
	EMP_NUM	EMPLOYEE_EMP_NUM_SUPER_ID_CK	CK or NN	emp_num != super_id	
	EMP_LAST				
	EMP_FIRST				
	DOB	EMPLOYEE_HIRE_DATE_CK	CK or NN	((hire_date-dob)/365)>=17	
	HIRE_DATE	EMPLOYEE_HIRE_DATE_CK	CK or NN	((hire_date-dob)/365)>=17	
	SUPER_ID	EMPLOYEE_EMP_NUM_SUPER_ID_CK	CK or NN	emp_num != super_id	
	SUPER_ID	SYS_C007695	FK		EMPLOYEE and EMP_NUM
	DEPT_CODE	SYS_C007694	FK		DEPARTMENT and DEPT_CODE
	BONUS_AMT				
*****		-----			
Num of Constraints			7		
EMPLOYEE_INFORMATION	EMPLOYEE				
	SUPERVISOR				
	TRAINING_NAME				
	TRAINING_DATE				
	NUMBER_OF_MONTHS				
*****		-----			
Num of Constraints			0		

End of Tables and Columns Information Report

Run By: MARIA

TABLES AND COLUMNS INFORMATION REPORT

TABLE_NAME	COLUMN_NAME	CONSTRAINT_NAME	CONSTRAINT_TYPE	SEARCH_CONDITION	FOREIGN_TABLE_COLUMN
PARTC_VIEW	TABLE_NAME COLUMN_NAME CONSTRAINT_NAME CONSTRAINT_TYPE SEARCH_CONDITION FOREIGN_TABLE_COLUMN				
*****		-----			
Num of Constraints			0		
PROJECT	PROJ_NUMBER NAME START_DATE TOTAL_COST DEPT_CODE CLIENT_ID	SYS_C007711 SYS_C007710 SYS_C007712 SYS_C007713	PK CK or NN FK FK	"NAME" IS NOT NULL 	DEPARTMENT and DEPT_CODE CLIENT and CLIENT_ID
*****		-----			
Num of Constraints			4		
SKILL	CODE DESCRIPTION	SYS_C007689 SYS_C007688	PK CK or NN	"DESCRIPTION" IS NOT NULL	
*****		-----			
Num of Constraints			2		
TABLE_INFO_VIEW	TABLE_NAME COLUMN_NAME CONSTRAINT_NAME CONSTRAINT_TYPE SEARCH_CONDITION FOREIGN_TABLE_COLUMN				
*****		-----			
Num of Constraints			0		
TRAINING	TRAIN_NUM CODE CODE EMP_NUM EMP_NUM DATE_ACQUIRED NAME COMMENTS	SYS_C007699 SYS_C007700 SYS_C007696 SYS_C007697 SYS_C007701 SYS_C007698 	PK FK CK or NN CK or NN FK CK or NN 	 "CODE" IS NOT NULL "EMP_NUM" IS NOT NULL "DATE_ACQUIRED" IS NOT NULL 	SKILL and CODE EMPLOYEE and EMP_NUM
*****		-----			
Num of Constraints			6		

End of Tables and Columns Information Report

Run By: MARIA

SQL>