```
SQL> @z:/ex2_1.sql
SQL> REM:       ASSIGNMENT 2
SQL> REM: ************************************************
SQL> REM: Part □  I : DML Update operations & TCL statements
SQL> REM: ************************************************
SQL>
SQL> drop table classes;

Table dropped.

SQL>
SQL> REM: Creating classes table
SQL>
SQL>      create table classes(class varchar2(20),
  2       type varchar2(5),
  3       country varchar2(20),
  4       numGuns number(2),
  5       bore number(2),
  6       displacement number(5),
  7       CONSTRAINT classes_pk PRIMARY KEY(class));

Table created.

SQL>
SQL> REM: Classes schema
SQL>
SQL>      desc classes
 Name                                                                                    Null?    Type
 -----------------------------------------------------------------------------------------------------------------
---- -------- ---------------------------------------------------------------------------------------------
 CLASS                                                                                   NOT NULL VARC
HAR2(20)
 TYPE                                                                                             VARCHAR2(5)

 COUNTRY                                                                                              VARCHAR
2(20)
 NUMGUNS                                                                                              NUMBER(
2)
 BORE                                                                                             NUMBER(2)
 DISPLACEMENT                                                                                            NUMBE
R(5)

SQL>
SQL> REM: 1)Add first two tuples from the above sample data.
SQL> REM:   List the columns explicitly in the INSERT clause. (No ordering of columns)
SQL>
SQL>      INSERT into classes
  2       (class,country,bore,type,numGuns,displacement)
  3       VALUES('Bismark','Germany',14,'bb',8,32000);

1 row created.
```

```
SQL>
SQL>
SQL>      INSERT into classes
  2       (class,country,bore,type,numGuns,displacement)
  3       VALUES('Iowa','USA',16,'bb',9,46000);

1 row created.

SQL>
SQL>      select * from classes;

CLASS                TYPE  COUNTRY                NUMGUNS      BORE DISPLACEMENT

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

Bismark              bb    Germany                       8         14        32000

Iowa                 bb    USA                           9         16        46000


SQL>
SQL> REM: 2)Populate the relation with the remaining set of tuples. This time,
SQL> REM:   do not list the columns in the INSERT clause.
SQL>
SQL>      INSERT into classes
  2       VALUES('Kongo','bc','Japan',8,15,42000);

1 row created.

SQL>
SQL>      INSERT into classes
  2       VALUES('North Carolina','bb','USA',9,16,37000);

1 row created.

SQL>
SQL>      INSERT into classes
  2       VALUES('Revenge','bb','Gt. Britain',8,15,29000);

1 row created.

SQL>
SQL>      INSERT into classes
  2       VALUES('Renown','bc','Gt. Britain',6,15,32000);

1 row created.

SQL>
SQL> REM: 3)Display the populated relation.
SQL>
SQL>      select * from classes;
```

```
CLASS               TYPE  COUNTRY              NUMGUNS      BORE DISPLACEMENT

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

Bismark             bb    Germany                   8        14       32000

Iowa                bb    USA                       9        16       46000

Kongo               bc    Japan                     8        15       42000

North Carolina      bb    USA                       9        16       37000

Revenge             bb    Gt. Britain               8        15       29000

Renown              bc    Gt. Britain               6        15       32000


6 rows selected.

SQL>
SQL> REM: 4)Mark an intermediate point here in this transaction.
SQL>
SQL>      SAVEPOINT A;

Savepoint created.

SQL>
SQL> REM: 5)Change the displacement of Bismark to 34000.
SQL>
SQL>      UPDATE classes
  2       SET displacement = 34000 WHERE class = 'Bismark';

1 row updated.

SQL>
SQL> REM: Displaying after updating
SQL>
SQL>      select * from classes;

CLASS               TYPE  COUNTRY              NUMGUNS      BORE DISPLACEMENT

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

Bismark             bb    Germany                   8        14       34000

Iowa                bb    USA                       9        16       46000

Kongo               bc    Japan                     8        15       42000

North Carolina      bb    USA                       9        16       37000

Revenge             bb    Gt. Britain               8        15       29000
```

```
Renown              bc    Gt. Britain                  6         15        32000


6 rows selected.

SQL>
SQL> REM:6)For the battleships having at least 9 number of guns or the ships
SQL> REM:  with at least 15 inch bore, increase the displacement by 10%.
SQL> REM:  Verify your changes to the table.
SQL>
SQL>      UPDATE classes
  2       SET displacement=displacement+(0.1*displacement)
  3       WHERE numGuns>=9 OR bore>=15;

5 rows updated.

SQL>
SQL>      select * from classes;

CLASS               TYPE  COUNTRY               NUMGUNS       BORE DISPLACEMENT

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

Bismark             bb    Germany                    8         14        34000

Iowa                bb    USA                        9         16        50600

Kongo               bc    Japan                      8         15        46200

North Carolina      bb    USA                        9         16        40700

Revenge             bb    Gt. Britain                8         15        31900

Renown              bc    Gt. Britain                6         15        35200


6 rows selected.

SQL>
SQL> REM: 7)Delete Kongo class of ship from Classes table.
SQL>
SQL>      DELETE from classes
  2       where class='Kongo';

1 row deleted.

SQL>
SQL> REM: 8)Display your changes to the table.
SQL>
SQL>      select * from classes;
```

```
CLASS               TYPE  COUNTRY              NUMGUNS      BORE DISPLACEMENT

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

Bismark              bb    Germany                    8         14        34000

Iowa                 bb    USA                        9         16        50600

North Carolina       bb    USA                        9         16        40700

Revenge              bb    Gt. Britain                8         15        31900

Renown               bc    Gt. Britain                6         15        35200


SQL>
SQL> REM: 9)Discard the recent updates to the relation without discarding the earlier INSERT operation(s)
SQL>
SQL>      ROLLBACK TO A;

Rollback complete.

SQL>
SQL>      select * from classes;

CLASS               TYPE  COUNTRY              NUMGUNS      BORE DISPLACEMENT

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

Bismark              bb    Germany                    8         14        32000

Iowa                 bb    USA                        9         16        46000

Kongo                bc    Japan                      8         15        42000

North Carolina       bb    USA                        9         16        37000

Revenge              bb    Gt. Britain                8         15        29000

Renown               bc    Gt. Britain                6         15        32000


6 rows selected.

SQL>
SQL> REM: 10)Commit the changes.
SQL>
SQL>      COMMIT;

Commit complete.

SQL> @z:/ex2_2.sql
SQL> REM:       ASSIGNMENT 2
SQL> REM: ****************************************************************************
*************
SQL> REM: Part □   II : DML Retrieval operations
SQL> REM: ****************************************************************************
*************
SQL>
SQL> drop table employees;

Table dropped.

SQL>
SQL> @z:/employees.sql
SQL> REM ******************************************************************
SQL> REM SSN COLLEGE OF ENGINEERING (An Autonomous Institution)
SQL> REM DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING
SQL> REM ******************************************************************
SQL> REM UCS 1412 - DATABASE LAB | IV SEMESTER
SQL> REM ASSIGNMENT-2: DML FUNDAMENTALS
SQL> REM FACULTY: P.MIRUNALINI | N.SUJAUDEEN | B.SENTHIL KUMAR
SQL> REM ******************************************************************
SQL> REM Note: Do not MODIFY/UPDATE the contents in this file. Use as it is.
SQL>
SQL> REM Create the EMPLOYEES table to hold the employee personnel
SQL> REM information for the company.
SQL> REM HR.EMPLOYEES has a self referencing foreign key to this table.
SQL>
SQL> Prompt ******  Creating EMPLOYEES table ....
******  Creating EMPLOYEES table ....
SQL>
SQL> CREATE TABLE employees
  2   ( employee_id   NUMBER(6)
  3   , first_name   VARCHAR2(20)
  4   , last_name   VARCHAR2(25)
  5        CONSTRAINT     emp_last_name_nn  NOT NULL
  6   , email   VARCHAR2(25)
  7       CONSTRAINT     emp_email_nn  NOT NULL
  8   , phone_number   VARCHAR2(20)
  9   , hire_date   DATE
 10        CONSTRAINT     emp_hire_date_nn  NOT NULL
 11    , job_id   VARCHAR2(10)
 12        CONSTRAINT     emp_job_nn NOT NULL
 13    , salary   NUMBER(8,2)
 14    , commission_pct NUMBER(2,2)
 15    , manager_id   NUMBER(6)
 16    , department_id  NUMBER(4)
 17    , CONSTRAINT   emp_salary_min
 18       CHECK (salary > 0)
 19    , CONSTRAINT   emp_email_uk
 20       UNIQUE (email)
 21    ) ;
```

```
Table created.

SQL>
SQL> ALTER TABLE employees
  2  ADD ( CONSTRAINT   emp_emp_id_pk
  3       PRIMARY KEY (employee_id)
  4    , CONSTRAINT   emp_manager_fk
  5       FOREIGN KEY (manager_id)
  6        REFERENCES employees
  7    ) ;

Table altered.

SQL>
SQL> REM ***************************insert data into the EMPLOYEES table
SQL>
SQL> Prompt ******  Populating EMPLOYEES table ....
******  Populating EMPLOYEES table ....
SQL>
SQL> INSERT INTO employees VALUES
  2        ( 100
  3        , 'Steven'
  4        , 'King'
  5        , 'SKING'
  6        , '515.123.4567'
  7        , TO_DATE('17-JUN-1987', 'dd-MON-yyyy')
  8        , 'AD_PRES'
  9        , 24000
 10        , NULL
 11        , NULL
 12        , 90
 13        );

1 row created.

SQL>
SQL> INSERT INTO employees VALUES
  2        ( 101
  3        , 'Neena'
  4        , 'Kochhar'
  5        , 'NKOCHHAR'
  6        , '515.123.4568'
  7        , TO_DATE('21-SEP-1989', 'dd-MON-yyyy')
  8        , 'AD_VP'
  9        , 17000
 10        , NULL
 11        , 100
 12        , 90
 13        );

1 row created.
```

```
SQL>
SQL> INSERT INTO employees VALUES
  2        ( 102
  3        , 'Lex'
  4        , 'De Haan'
  5        , 'LDEHAAN'
  6        , '515.123.4569'
  7        , TO_DATE('13-JAN-1993', 'dd-MON-yyyy')
  8        , 'AD_VP'
  9        , 17000
 10        , NULL
 11        , 100
 12        , 90
 13        );

1 row created.

SQL>
SQL> INSERT INTO employees VALUES
  2        ( 103
  3        , 'Alexander'
  4        , 'Hunold'
  5        , 'AHUNOLD'
  6        , '590.423.4567'
  7        , TO_DATE('03-JAN-1990', 'dd-MON-yyyy')
  8        , 'IT_PROG'
  9        , 9000
 10        , NULL
 11        , 102
 12        , 60
 13        );

1 row created.

SQL>
SQL> INSERT INTO employees VALUES
  2        ( 104
  3        , 'Bruce'
  4        , 'Ernst'
  5        , 'BERNST'
  6        , '590.423.4568'
  7        , TO_DATE('21-MAY-1991', 'dd-MON-yyyy')
  8        , 'IT_PROG'
  9        , 6000
 10        , NULL
 11        , 103
 12        , 60
 13        );

1 row created.

SQL>
SQL> INSERT INTO employees VALUES
  2        ( 105
  3        , 'David'
  4        , 'Austin'
  5        , 'DAUSTIN'
  6        , '590.423.4569'
  7        , TO_DATE('25-JUN-1997', 'dd-MON-yyyy')
  8        , 'IT_PROG'
  9        , 4800
 10        , NULL
 11        , 103
 12        , 60
 13        );

1 row created.

SQL>
SQL> INSERT INTO employees VALUES
  2        ( 106
  3        , 'Valli'
  4        , 'Pataballa'
  5        , 'VPATABAL'
  6        , '590.423.4560'
  7        , TO_DATE('05-FEB-1998', 'dd-MON-yyyy')
  8        , 'IT_PROG'
  9        , 4800
 10        , NULL
 11        , 103
 12        , 60
 13        );

1 row created.

SQL>
SQL> INSERT INTO employees VALUES
  2        ( 107
  3        , 'Diana'
  4        , 'Lorentz'
  5        , 'DLORENTZ'
  6        , '590.423.5567'
  7        , TO_DATE('07-FEB-1999', 'dd-MON-yyyy')
  8        , 'IT_PROG'
  9        , 4200
 10        , NULL
 11        , 103
 12        , 60
 13        );

1 row created.

SQL>
SQL> INSERT INTO employees VALUES
```

```
  2       ( 124
  3       , 'Kevin'
  4       , 'Mourgos'
  5       , 'KMOURGOS'
  6       , '650.123.5234'
  7       , TO_DATE('16-NOV-1999', 'dd-MON-yyyy')
  8       , 'ST_MAN'
  9       , 5800
 10       , NULL
 11       , 100
 12       , 50
 13       );

1 row created.

SQL>
SQL> INSERT INTO employees VALUES
  2       ( 141
  3       , 'Trenna'
  4       , 'Rajs'
  5       , 'TRAJS'
  6       , '650.121.8009'
  7       , TO_DATE('17-OCT-1995', 'dd-MON-yyyy')
  8       , 'ST_CLERK'
  9       , 3500
 10       , NULL
 11       , 124
 12       , 50
 13       );

1 row created.

SQL>
SQL> INSERT INTO employees VALUES
  2       ( 142
  3       , 'Curtis'
  4       , 'Davies'
  5       , 'CDAVIES'
  6       , '650.121.2994'
  7       , TO_DATE('29-JAN-1997', 'dd-MON-yyyy')
  8       , 'ST_CLERK'
  9       , 3100
 10       , NULL
 11       , 124
 12       , 50
 13       );

1 row created.

SQL>
SQL> INSERT INTO employees VALUES
  2       ( 143
  3        , 'Randall'
  4        , 'Matos'
  5        , 'RMATOS'
  6        , '650.121.2874'
  7        , TO_DATE('15-MAR-1998', 'dd-MON-yyyy')
  8        , 'ST_CLERK'
  9        , 2600
 10        , NULL
 11        , 124
 12        , 50
 13        );

1 row created.

SQL>
SQL> INSERT INTO employees VALUES
  2        ( 144
  3        , 'Peter'
  4        , 'Vargas'
  5        , 'PVARGAS'
  6        , '650.121.2004'
  7        , TO_DATE('09-JUL-1998', 'dd-MON-yyyy')
  8        , 'ST_CLERK'
  9        , 2500
 10        , NULL
 11        , 124
 12        , 50
 13        );

1 row created.

SQL>
SQL> INSERT INTO employees VALUES
  2        ( 149
  3        , 'Eleni'
  4        , 'Zlotkey'
  5        , 'EZLOTKEY'
  6        , '011.44.1344.429018'
  7        , TO_DATE('29-JAN-2000', 'dd-MON-yyyy')
  8        , 'SA_MAN'
  9        , 10500
 10        , .2
 11        , 100
 12        , 80
 13        );

1 row created.

SQL>
SQL> INSERT INTO employees VALUES
  2        ( 174
  3        , 'Ellen'
  4        , 'Abel'
  5        , 'EABEL'
  6        , '011.44.1644.429267'
  7        , TO_DATE('11-MAY-1996', 'dd-MON-yyyy')
  8        , 'SA_REP'
  9        , 11000
 10         , .30
 11         , 149
 12         , 80
 13         );

1 row created.

SQL>
SQL> INSERT INTO employees VALUES
  2        ( 176
  3        , 'Jonathon'
  4        , 'Taylor'
  5        , 'JTAYLOR'
  6        , '011.44.1644.429265'
  7        , TO_DATE('24-MAR-1998', 'dd-MON-yyyy')
  8        , 'SA_REP'
  9        , 8600
 10         , .20
 11         , 149
 12         , 80
 13         );

1 row created.

SQL>
SQL> INSERT INTO employees VALUES
  2        ( 178
  3        , 'Kimberely'
  4        , 'Grant'
  5        , 'KGRANT'
  6        , '011.44.1644.429263'
  7        , TO_DATE('24-MAY-1999', 'dd-MON-yyyy')
  8        , 'SA_REP'
  9        , 7000
 10         , .15
 11         , 149
 12         , NULL
 13         );

1 row created.

SQL>
SQL> INSERT INTO employees VALUES
  2        ( 200
  3        , 'Jennifer'
  4        , 'Whalen'
  5        , 'JWHALEN'
  6        , '515.123.4444'
  7        , TO_DATE('17-SEP-1987', 'dd-MON-yyyy')
  8        , 'AD_ASST'
  9        , 4400
 10         , NULL
 11         , 101
 12         , 10
 13         );

1 row created.

SQL>
SQL> INSERT INTO employees VALUES
  2        ( 201
  3        , 'Michael'
  4        , 'Hartstein'
  5        , 'MHARTSTE'
  6        , '515.123.5555'
  7        , TO_DATE('17-FEB-1996', 'dd-MON-yyyy')
  8        , 'MK_MAN'
  9        , 13000
 10         , NULL
 11         , 100
 12         , 20
 13         );

1 row created.

SQL>
SQL> INSERT INTO employees VALUES
  2        ( 202
  3        , 'Pat'
  4        , 'Fay'
  5        , 'PFAY'
  6        , '603.123.6666'
  7        , TO_DATE('17-AUG-1997', 'dd-MON-yyyy')
  8        , 'MK_REP'
  9        , 6000
 10         , NULL
 11         , 201
 12         , 20
 13         );

1 row created.

SQL>
SQL> INSERT INTO employees VALUES
  2        ( 205
  3        , 'Shelley'
  4        , 'Higgins'
  5        , 'SHIGGINS'
  6       , '515.123.8080'
  7       , TO_DATE('07-JUN-1994', 'dd-MON-yyyy')
  8       , 'AC_MGR'
  9       , 12000
 10       , NULL
 11       , 101
 12       , 110
 13       );

1 row created.

SQL>
SQL> INSERT INTO employees VALUES
  2       ( 206
  3       , 'William'
  4       , 'Gietz'
  5       , 'WGIETZ'
  6       , '515.123.8181'
  7       , TO_DATE('07-JUN-1994', 'dd-MON-yyyy')
  8       , 'AC_ACCOUNT'
  9       , 8300
 10       , NULL
 11       , 205
 12       , 110
 13       );

1 row created.

SQL>
SQL> COMMIT;

Commit complete.

SQL>
SQL> REM ***************************END OF insert data into the EMPLOYEES table
SQL>
SQL>
SQL> REM:Displaying all
SQL>
SQL>      select * from employees;

EMPLOYEE_ID FIRST_NAME           LAST_NAME                 EMAIL                     PHONE_NUMBER         HIR
E_DATE JOB_ID         SALARY COMMISSION_PCT MANAGER_ID DEPARTMENT_ID

----------- -------------------- ------------------------- ------------------------- -------------------- --------- ---------- ---------- ----
---------- ---------- -------------
        100 Steven               King                      SKING                     515.123.4567         17-JUN-87 AD_PRES         240
00                             90
        101 Neena                Kochhar                   NKOCHHAR                  515.123.4568         21-SEP-89 AD_VP
  17000                   100           90
        102 Lex                  De Haan                   LDEHAAN                   515.123.4569         13-JAN-93 AD_VP              1
7000                   100           90
```

```
      103 Alexander          Hunold               AHUNOLD               590.423.4567        03-JAN-90 IT_PROG
   9000                  102           60
      104 Bruce              Ernst                BERNST                590.423.4568        21-MAY-91 IT_PROG         6
000                  103           60
      105 David              Austin               DAUSTIN               590.423.4569        25-JUN-97 IT_PROG         4
800                  103           60
      106 Valli              Pataballa            VPATABAL              590.423.4560        05-FEB-98 IT_PROG
4800                  103           60
      107 Diana              Lorentz              DLORENTZ              590.423.5567        07-FEB-99 IT_PROG
 4200                  103           60
      124 Kevin              Mourgos              KMOURGOS              650.123.5234        16-NOV-99 ST_MAN
     5800                  100           50
      141 Trenna             Rajs                 TRAJS                 650.121.8009        17-OCT-95 ST_CLERK        35
00                  124           50
      142 Curtis             Davies               CDAVIES               650.121.2994        29-JAN-97 ST_CLERK
3100                  124           50

EMPLOYEE_ID FIRST_NAME           LAST_NAME                 EMAIL                     PHONE_NUMBER         HIR
E_DATE JOB_ID         SALARY COMMISSION_PCT MANAGER_ID DEPARTMENT_ID

----------- -------------------- ------------------------- ------------------------- -------------------- --------- ---------- ---------- ----
---------- ---------- -------------
      143 Randall            Matos                RMATOS                650.121.2874        15-MAR-98 ST_CLERK
  2600                  124           50
      144 Peter              Vargas               PVARGAS               650.121.2004        09-JUL-98 ST_CLERK
2500                  124           50
      149 Eleni              Zlotkey              EZLOTKEY              011.44.1344.429018   29-JAN-00 SA_MAN
   10500             .2        100           80
      174 Ellen              Abel                 EABEL                 011.44.1644.429267   11-MAY-96 SA_REP          1
1000             .3        149           80
      176 Jonathon           Taylor               JTAYLOR               011.44.1644.429265   24-MAR-98 SA_REP
    8600             .2        149           80
      178 Kimberely          Grant                KGRANT                011.44.1644.429263   24-MAY-99 SA_REP
     7000             .15        149
      200 Jennifer           Whalen               JWHALEN               515.123.4444        17-SEP-87 AD_ASST
  4400                  101           10
      201 Michael            Hartstein            MHARTSTE              515.123.5555        17-FEB-96 MK_MAN
   13000                  100           20
      202 Pat                Fay                  PFAY                  603.123.6666        17-AUG-97 MK_REP          6000
                  201           20
      205 Shelley            Higgins              SHIGGINS              515.123.8080        07-JUN-94 AC_MGR
12000                  101           110
      206 William            Gietz                WGIETZ                515.123.8181        07-JUN-94 AC_ACCOUNT
   8300                  205           110

22 rows selected.

SQL>
SQL> REM:11. Display firsy name, job id and salary of all the employees.
SQL>
SQL>       select first_name, job_id, salary from employees;
```

```
FIRST_NAME          JOB_ID        SALARY

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

Steven              AD_PRES        24000

Neena               AD_VP          17000

Lex                 AD_VP          17000

Alexander           IT_PROG         9000

Bruce               IT_PROG         6000

David               IT_PROG         4800

Valli               IT_PROG         4800

Diana               IT_PROG         4200

Kevin               ST_MAN          5800

Trenna              ST_CLERK        3500

Curtis              ST_CLERK        3100


FIRST_NAME          JOB_ID        SALARY

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

Randall             ST_CLERK        2600

Peter               ST_CLERK        2500

Eleni               SA_MAN         10500

Ellen               SA_REP         11000

Jonathon            SA_REP          8600

Kimberely           SA_REP          7000

Jennifer            AD_ASST         4400

Michael             MK_MAN         13000

Pat                 MK_REP          6000

Shelley             AC_MGR         12000

William             AC_ACCOUNT      8300
```

```
22 rows selected.

SQL>
SQL> REM:12. Display the id, name(first & last), salary and annual salary
SQL> REM:of all the employees. Sort the employees by first name.
SQL> REM:Label the columns as shown below:(EMPLOYEE_ID, FULL NAME, MONTHLY SAL, ANNUAL SA
LARY)
SQL>
SQL>      SELECT employee_id, first_name||' '||last_name AS full_name,salary as monthly_salary,salary*12 AS an
nual_salary
  2      FROM employees
  3      ORDER by first_name;

EMPLOYEE_ID FULL_NAME                                    MONTHLY_SALARY ANNUAL_SALARY

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

        103 Alexander Hunold                                       9000        108000

        104 Bruce Ernst                                            6000         72000

        142 Curtis Davies                                          3100         37200

        105 David Austin                                           4800         57600

        107 Diana Lorentz                                          4200         50400

        149 Eleni Zlotkey                                         10500        126000

        174 Ellen Abel                                            11000        132000

        200 Jennifer Whalen                                        4400         52800

        176 Jonathon Taylor                                        8600        103200

        124 Kevin Mourgos                                          5800         69600

        178 Kimberely Grant                                        7000         84000


EMPLOYEE_ID FULL_NAME                                    MONTHLY_SALARY ANNUAL_SALARY

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

        102 Lex De Haan                                           17000        204000

        201 Michael Hartstein                                     13000        156000

        101 Neena Kochhar                                         17000        204000
        202 Pat Fay                                   6000        72000

        144 Peter Vargas                                2500        30000

        143 Randall Matos                                 2600        31200

        205 Shelley Higgins                              12000       144000

        100 Steven King                                24000       288000

        141 Trenna Rajs                                 3500        42000

        106 Valli Pataballa                              4800        57600

        206 William Gietz                                 8300        99600


22 rows selected.

SQL>
SQL> REM:13. List the different jobs in which the employees are working for.
SQL>
SQL>       SELECT DISTINCT(job_id) from employees;

JOB_ID

----------

IT_PROG

AC_MGR

AC_ACCOUNT

ST_MAN

AD_ASST

AD_VP

SA_MAN

MK_MAN

AD_PRES

SA_REP

MK_REP


JOB_ID
```

```
----------

ST_CLERK


12 rows selected.

SQL>
SQL>
SQL> REM:14. Display the id, first name, job id, salary and commission of employees who are earning commission
s.
SQL>
SQL>       SELECT employee_id,first_name,last_name,job_id,salary,commission_pct
  2       FROM employees
  3       WHERE commission_pct is NOT NULL;

EMPLOYEE_ID FIRST_NAME          LAST_NAME               JOB_ID       SALARY COMMISSION_PCT

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

        149 Eleni              Zlotkey                  SA_MAN        10500           .2

        174 Ellen              Abel                    SA_REP        11000           .3

        176 Jonathon            Taylor                   SA_REP         8600           .2

        178 Kimberely           Grant                    SA_REP         7000           .15


SQL>
SQL> REM:15. Display the details (id, first name, job id, salary and dept id) of employees who are MANAGERS.
SQL>
SQL>       SELECT employee_id,first_name,job_id,salary,department_id
  2       FROM employees
  3       WHERE employee_id IN(select manager_id from employees);

EMPLOYEE_ID FIRST_NAME          JOB_ID       SALARY DEPARTMENT_ID

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

        100 Steven              AD_PRES       24000          90

        102 Lex                AD_VP         17000          90

        103 Alexander           IT_PROG         9000          60

        124 Kevin              ST_MAN         5800          50

        149 Eleni              SA_MAN        10500          80

        101 Neena              AD_VP         17000          90
        201 Michael              MK_MAN         13000           20

        205 Shelley             AC_MGR         12000          110


8 rows selected.

SQL>
SQL> REM:16. Display the details of employees other than sales representatives
SQL> REM:(id, first name, hire date, job id, salary and dept id) who are
SQL> REM:hired after □ 01□ May□ 1999□  or whose salary is at least 10000.
SQL>
SQL>      SELECT employee_id,first_name,hire_date,job_id,salary,department_id
  2       FROM employees
  3       WHERE job_id <> 'SA_REP' AND (hire_date > '01□ May□ 1999' OR salary>=10000);

EMPLOYEE_ID FIRST_NAME           HIRE_DATE JOB_ID         SALARY DEPARTMENT_ID

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

        100 Steven               17-JUN-87 AD_PRES         24000            90

        101 Neena                21-SEP-89 AD_VP           17000            90

        102 Lex                  13-JAN-93 AD_VP           17000            90

        124 Kevin                16-NOV-99 ST_MAN           5800            50

        149 Eleni                29-JAN-00 SA_MAN          10500            80

        201 Michael              17-FEB-96 MK_MAN          13000            20

        205 Shelley              07-JUN-94 AC_MGR          12000           110


7 rows selected.

SQL>
SQL> REM:17. Display the employee details (first name, salary, hire date and dept id) whose salary falls in the
SQL> REM:range of 5000 to 15000 and his/her name begins with any of characters (A,J,K,S). Sort the output by fir
st name.
SQL>
SQL>      SELECT first_name,salary,hire_date,department_id
  2       FROM employees
  3       WHERE (salary BETWEEN 5000 AND 15000) AND (first_name LIKE 'A%' OR first_name LIKE 'J%' OR
first_name LIKE 'K%' OR first_name LIKE 'S%')
  4       ORDER BY first_name;

FIRST_NAME               SALARY HIRE_DATE DEPARTMENT_ID

-------------------- ---------- --------- -------------
```

```
Alexander                9000 03-JAN-90           60

Jonathon                8600 24-MAR-98           80

Kevin                  5800 16-NOV-99           50

Kimberely                7000 24-MAY-99

Shelley               12000 07-JUN-94          110


SQL>
SQL> REM:18. Display the experience of employees in no. of years and months who were hired after 1998. Label t
he columns as:
SQL> REM:(EMPLOYEE_ID, FIRST_NAME, HIRE_DATE, EXP□ YRS, EXP□ MONTHS)
SQL>
SQL>       SELECT employee_id,first_name,hire_date,(extract(year from sysdate) - extract(year from hire_date)) A
S exp_yrs,floor(mod(months_between(sysdate,hire_date),12)) AS exp_months
  2       FROM employees
  3       WHERE extract(YEAR from hire_date)>1998;

EMPLOYEE_ID FIRST_NAME           HIRE_DATE    EXP_YRS EXP_MONTHS

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

        107 Diana                07-FEB-99         21         11

        124 Kevin                16-NOV-99         21          2

        149 Eleni                29-JAN-00         20         11

        178 Kimberely            24-MAY-99         21          8


SQL>
SQL> REM:19. Display the total number of departments.
SQL>
SQL>       SELECT COUNT(DISTINCT(department_id)) AS count_dept
  2       FROM employees;

COUNT_DEPT

----------

         7


SQL>
SQL> REM:20. Show the number of employees hired by year□ wise. Sort the result by year□ wise.
SQL>
SQL>       SELECT extract(year from hire_date) as hire_year,count(*) as no_of_emp
```

```
  2       FROM employees
  3       GROUP BY extract(year from hire_date)
  4       ORDER BY hire_year;

 HIRE_YEAR  NO_OF_EMP

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

      1987          2

      1989          1

      1990          1

      1991          1

      1993          1

      1994          2

      1995          1

      1996          2

      1997          3

      1998          4

      1999          3


 HIRE_YEAR  NO_OF_EMP

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

      2000          1


12 rows selected.

SQL>
SQL> REM:21. Display the minimum, maximum and average salary, number of employees for each department. Ex
clude the employee(s) who are not in
SQL> REM:any department. Include the department(s) with
SQL> REM:at least 2 employees and the average salary is more than 10000. Sort the result by minimum salary in de
scending order.
SQL>
SQL>       SELECT department_id,min(salary) AS min_sal ,max(salary) AS max_sal ,avg(salary) AS avg_sal,count(
*) as no_of_emp
  2       FROM employees
  3       WHERE department_id IS NOT NULL
  4       GROUP BY department_id
  5     HAVING count(*)>=2 AND avg(salary)>10000
  6     ORDER BY min_sal desc;

DEPARTMENT_ID    MIN_SAL    MAX_SAL    AVG_SAL  NO_OF_EMP

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

           90      17000      24000 19333.3333          3

           80       8600      11000 10033.3333          3

          110       8300      12000      10150          2


SQL> spool off
```