```
SQL> cl scr

SQL> CREATE VIEW Employees
  2  AS
  3  SELECT
  4   Empno "ID Number",
  5   Ename Name,
  6   Sal "Basic Salary",
  7   Job Designation
  8  FROM Emp;

View created.

SQL> SELECT
  2     Empno "ID Number",
  3     Ename Name,
  4     Sal "Basic Salary",
  5     Job Designation
  6  FROM Emp;

 ID Number NAME       Basic Salary DESIGNATI
---------- ---------- ------------ ---------
      7839 KING               5000 PRESIDENT
      7698 BLAKE              2850 MANAGER
      7782 CLARK              2450 MANAGER
      7566 JONES              2975 MANAGER
      7654 MARTIN             1250 SALESMAN
      7499 ALLEN              1600 SALESMAN
      7844 TURNER             1500 SALESMAN
      7900 JAMES               950 CLERK
      7521 WARD               1250 SALESMAN
      7902 FORD               3000 ANALYST
      7369 SMITH               800 CLERK

 ID Number NAME       Basic Salary DESIGNATI
---------- ---------- ------------ ---------
      7788 SCOTT              3000 ANALYST
      7876 ADAMS              1100 CLERK
      7934 MILLER             1300 CLERK

14 rows selected.


Execution Plan
----------------------------------------------------------
   0      SELECT STATEMENT Optimizer=ALL_ROWS (Cost=3 Card=14 Bytes=54
          6)

   1    0   TABLE ACCESS (FULL) OF 'EMP' (TABLE) (Cost=3 Card=14 Bytes
          =546)



SQL> DESC Employees
 Name                                      Null?    Type
```

```
 ----------------------------------------- -------- ----------------------------
 ID Number                                 NOT NULL NUMBER(4)
 NAME                                               VARCHAR2(10)
 Basic Salary                                       NUMBER(7,2)
 DESIGNATION                                        VARCHAR2(9)

SQL> SELECT * FROM Employees;

 ID Number NAME       Basic Salary DESIGNATI
---------- ---------- ------------ ---------
      7839 KING               5000 PRESIDENT
      7698 BLAKE              2850 MANAGER
      7782 CLARK              2450 MANAGER
      7566 JONES              2975 MANAGER
      7654 MARTIN             1250 SALESMAN
      7499 ALLEN              1600 SALESMAN
      7844 TURNER             1500 SALESMAN
      7900 JAMES               950 CLERK
      7521 WARD               1250 SALESMAN
      7902 FORD               3000 ANALYST
      7369 SMITH               800 CLERK

 ID Number NAME       Basic Salary DESIGNATI
---------- ---------- ------------ ---------
      7788 SCOTT              3000 ANALYST
      7876 ADAMS              1100 CLERK
      7934 MILLER             1300 CLERK

14 rows selected.


Execution Plan
----------------------------------------------------------
   0      SELECT STATEMENT Optimizer=ALL_ROWS (Cost=3 Card=14 Bytes=54
          6)

   1    0   TABLE ACCESS (FULL) OF 'EMP' (TABLE) (Cost=3 Card=14 Bytes
          =546)



SQL> SELECT Empno, Ename, Sal FROM Employees;
SELECT Empno, Ename, Sal FROM Employees
                     *
ERROR at line 1:
ORA-00904: "SAL": invalid identifier


SQL> SELECT "ID Number", Name, "Basic Salary", HireDate
  2  FROM Employees;
SELECT "ID Number", Name, "Basic Salary", HireDate
                                          *
ERROR at line 1:
ORA-00904: "HIREDATE": invalid identifier
```

```
SQL> SELECT "ID Number", Name, "Basic Salary"
  2  FROM Employees;

 ID Number NAME       Basic Salary
---------- ---------- ------------
      7839 KING               5000
      7698 BLAKE              2850
      7782 CLARK              2450
      7566 JONES              2975
      7654 MARTIN             1250
      7499 ALLEN              1600
      7844 TURNER             1500
      7900 JAMES               950
      7521 WARD               1250
      7902 FORD               3000
      7369 SMITH               800

 ID Number NAME       Basic Salary
---------- ---------- ------------
      7788 SCOTT              3000
      7876 ADAMS              1100
      7934 MILLER             1300

14 rows selected.


Execution Plan
----------------------------------------------------------
   0      SELECT STATEMENT Optimizer=ALL_ROWS (Cost=3 Card=14 Bytes=46
          2)

   1    0   TABLE ACCESS (FULL) OF 'EMP' (TABLE) (Cost=3 Card=14 Bytes
          =462)



SQL> ED
Wrote file afiedt.buf

  1  SELECT "ID Number", Name, "Basic Salary"
  2  FROM Employees
  3* WHERE "Basic Salary" > 1500
SQL> /

 ID Number NAME       Basic Salary
---------- ---------- ------------
      7839 KING               5000
      7698 BLAKE              2850
      7782 CLARK              2450
      7566 JONES              2975
      7499 ALLEN              1600
      7902 FORD               3000
      7788 SCOTT              3000
```

```
7 rows selected.


Execution Plan
----------------------------------------------------------
   0      SELECT STATEMENT Optimizer=ALL_ROWS (Cost=3 Card=7 Bytes=231
          )

   1    0   TABLE ACCESS (FULL) OF 'EMP' (TABLE) (Cost=3 Card=7 Bytes=
          231)



SQL> ED
Wrote file afiedt.buf

  1  SELECT Deptno, SUm("Basic Salary")
  2  FROM Employees
  3* GROUP BY Deptno
SQL> /
GROUP BY Deptno
         *
ERROR at line 3:
ORA-00904: "DEPTNO": invalid identifier


SQL> ED
Wrote file afiedt.buf

  1  SELECT Deisgnation, SUm("Basic Salary")
  2  FROM Employees
  3* GROUP BY Deisgnation
SQL> /
GROUP BY Deisgnation
         *
ERROR at line 3:
ORA-00904: "DEISGNATION": invalid identifier


SQL> ED
Wrote file afiedt.buf

  1  SELECT Designation, SUm("Basic Salary")
  2  FROM Employees
  3* GROUP BY Designation
SQL> /

DESIGNATI SUM("BASICSALARY")
--------- ------------------
ANALYST                 6000
CLERK                   4150
MANAGER                 8275
PRESIDENT               5000
SALESMAN                5600
```

```
Execution Plan
----------------------------------------------------------
   0      SELECT STATEMENT Optimizer=ALL_ROWS (Cost=4 Card=14 Bytes=26
          6)

   1    0   SORT (GROUP BY) (Cost=4 Card=14 Bytes=266)
   2    1     TABLE ACCESS (FULL) OF 'EMP' (TABLE) (Cost=3 Card=14 Byt
          es=266)



SQL> cl scr

SQL> SELECT
  2   "ID Number",
  3   Name,
  4   "Basic Salary" * 12
  5  FROM Employees;

 ID Number NAME       "BASICSALARY"*12
---------- ---------- ----------------
      7839 KING                  60000
      7698 BLAKE                 34200
      7782 CLARK                 29400
      7566 JONES                 35700
      7654 MARTIN                15000
      7499 ALLEN                 19200
      7844 TURNER                18000
      7900 JAMES                 11400
      7521 WARD                  15000
      7902 FORD                  36000
      7369 SMITH                  9600

 ID Number NAME       "BASICSALARY"*12
---------- ---------- ----------------
      7788 SCOTT                 36000
      7876 ADAMS                 13200
      7934 MILLER                15600

14 rows selected.


Execution Plan
----------------------------------------------------------
   0      SELECT STATEMENT Optimizer=ALL_ROWS (Cost=3 Card=14 Bytes=46
          2)

   1    0   TABLE ACCESS (FULL) OF 'EMP' (TABLE) (Cost=3 Card=14 Bytes
          =462)



SQL> SELECT
```

```
  2   "ID Number",
  3   Name,
  4   TO_CHAR("Basic Salary", '99,99,999.99') Monthly,
  5   "Basic Salary" * 12 Annual
  6  FROM Employees
  7  WHERE "Basic Salary" > 2500;

 ID Number NAME       MONTHLY           ANNUAL
---------- ---------- ------------ ----------
      7839 KING            5,000.00      60000
      7698 BLAKE           2,850.00      34200
      7566 JONES           2,975.00      35700
      7902 FORD            3,000.00      36000
      7788 SCOTT           3,000.00      36000


Execution Plan
----------------------------------------------------------
   0      SELECT STATEMENT Optimizer=ALL_ROWS (Cost=3 Card=5 Bytes=165
          )

   1    0   TABLE ACCESS (FULL) OF 'EMP' (TABLE) (Cost=3 Card=5 Bytes=
          165)



SQL> cl scr

SQL> CREATE VIEW EmpInfo
  2  AS
  3  SELECT
  4   E.Empno     EmployeeID,
  5   E.Ename     Name,
  6   D.Deptno    DepartmentID,
  7   D.Dname     DepartmentName
  8  FROM Emp E, Dept D
  9  WHERE D.Deptno = E.Deptno
 10  ORDER BY D.Deptno;

View created.

SQL> DESC EmpInfo
 Name                                      Null?    Type
 ----------------------------------------- -------- ----------------------------
 EMPLOYEEID                                NOT NULL NUMBER(4)
 NAME                                               VARCHAR2(10)
 DEPARTMENTID                              NOT NULL NUMBER(2)
 DEPARTMENTNAME                                     VARCHAR2(14)

SQL> SELECT * FROM EmpInfo;

EMPLOYEEID NAME       DEPARTMENTID DEPARTMENTNAME
---------- ---------- ------------ --------------
      7839 KING                 10 ACCOUNTING
      7782 CLARK                10 ACCOUNTING
```

```
      7934 MILLER               10 ACCOUNTING
      7566 JONES                20 RESEARCH
      7788 SCOTT                20 RESEARCH
      7876 ADAMS                20 RESEARCH
      7369 SMITH                20 RESEARCH
      7902 FORD                 20 RESEARCH
      7698 BLAKE                30 SALES
      7654 MARTIN               30 SALES
      7499 ALLEN                30 SALES

EMPLOYEEID NAME       DEPARTMENTID DEPARTMENTNAME
---------- ---------- ------------ --------------
      7844 TURNER               30 SALES
      7900 JAMES                30 SALES
      7521 WARD                 30 SALES

14 rows selected.


Execution Plan
----------------------------------------------------------
   0      SELECT STATEMENT Optimizer=ALL_ROWS (Cost=8 Card=14 Bytes=58
          8)

   1    0   VIEW OF 'EMPINFO' (VIEW) (Cost=8 Card=14 Bytes=588)
   2    1     SORT (ORDER BY) (Cost=8 Card=14 Bytes=770)
   3    2       HASH JOIN (Cost=7 Card=14 Bytes=770)
   4    3         TABLE ACCESS (FULL) OF 'DEPT' (TABLE) (Cost=3 Card=4
           Bytes=88)

   5    3         TABLE ACCESS (FULL) OF 'EMP' (TABLE) (Cost=3 Card=14
           Bytes=462)



SQL> cl scr

SQL> CREATE VIEW EmpGrades
  2  AS
  3  SELECT
  4   E.Ename Name,
  5   E.Sal Basic,
  6   S.Grade Grade
  7  FROM Emp E , Salgrade S
  8  WHERE E.Sal BETWEEN S.LoSal AND S.HiSal
  9  ORDER BY S.Grade;

View created.

SQL> DESC EmpGrades
 Name                                      Null?    Type
 ----------------------------------------- -------- ----------------------------
 NAME                                               VARCHAR2(10)
 BASIC                                              NUMBER(7,2)
 GRADE                                              NUMBER
```

```
SQL> SELECT * FROM EmpGrades;

NAME            BASIC      GRADE
---------- ---------- ----------
SMITH             800          1
JAMES             950          1
ADAMS            1100          1
MARTIN           1250          2
WARD             1250          2
MILLER           1300          2
TURNER           1500          3
ALLEN            1600          3
CLARK            2450          4
BLAKE            2850          4
JONES            2975          4

NAME            BASIC      GRADE
---------- ---------- ----------
FORD             3000          4
SCOTT            3000          4
KING             5000          5

14 rows selected.


Execution Plan
----------------------------------------------------------
   0      SELECT STATEMENT Optimizer=ALL_ROWS (Cost=9 Card=1 Bytes=33)
   1    0   VIEW OF 'EMPGRADES' (VIEW) (Cost=9 Card=1 Bytes=33)
   2    1     SORT (ORDER BY) (Cost=9 Card=1 Bytes=59)
   3    2       MERGE JOIN (Cost=8 Card=1 Bytes=59)
   4    3         SORT (JOIN) (Cost=4 Card=5 Bytes=195)
   5    4           TABLE ACCESS (FULL) OF 'SALGRADE' (TABLE) (Cost=3
          Card=5 Bytes=195)

   6    3         FILTER
   7    6           SORT (JOIN) (Cost=4 Card=14 Bytes=280)
   8    7             TABLE ACCESS (FULL) OF 'EMP' (TABLE) (Cost=3 Car
          d=14 Bytes=280)




SQL> cl scr

SQL> CREATE OR REPLACE VIEW EmpManagers
  2  AS
  3  SELECT
  4   RowNum SerialNo,
  5   INITCAP(E.Ename)||' Works Under '
  6   ||M.Ename  "Employee And Managers"
  7  FROM Emp E, Emp M
  8  WHERE E.MGR = M.Empno;

View created.
```

```
SQL> DESC EmpManagers
 Name                                      Null?    Type
 ----------------------------------------- -------- ----------------------------
 SERIALNO                                           NUMBER
 Employee And Managers                              VARCHAR2(33)

SQL> SELECT * FROM EmpManagers;

  SERIALNO Employee And Managers
---------- --------------------------------
         1 Jones Works Under KING
         2 Clark Works Under KING
         3 Blake Works Under KING
         4 Ward Works Under BLAKE
         5 James Works Under BLAKE
         6 Turner Works Under BLAKE
         7 Allen Works Under BLAKE
         8 Martin Works Under BLAKE
         9 Miller Works Under CLARK
        10 Scott Works Under JONES
        11 Ford Works Under JONES

  SERIALNO Employee And Managers
---------- --------------------------------
        12 Smith Works Under FORD
        13 Adams Works Under SCOTT

13 rows selected.


Execution Plan
----------------------------------------------------------
   0      SELECT STATEMENT Optimizer=ALL_ROWS (Cost=7 Card=13 Bytes=40
          3)

   1    0   VIEW OF 'EMPMANAGERS' (VIEW) (Cost=7 Card=13 Bytes=403)
   2    1     COUNT
   3    2       HASH JOIN (Cost=7 Card=13 Bytes=520)
   4    3         TABLE ACCESS (FULL) OF 'EMP' (TABLE) (Cost=3 Card=14
           Bytes=280)

   5    3         TABLE ACCESS (FULL) OF 'EMP' (TABLE) (Cost=3 Card=14
           Bytes=280)



SQL> cl scr

SQL> CREATE OR REPLACE VIEW EmpAccounts
  2  AS
  3  SELECT
  4   Ename,
  5   Deptno,
  6   Sal Monthly,
```

```
  7   Sal * 12 Annual
  8  FROM  Emp
  9  WHERE Deptno = (SELECT
 10                          Deptno
 11                     FROM Dept
 12                     WHERE Dname = 'ACCOUNTING')
 13  ORDER BY Annual;

View created.

SQL> DESC EmpAccounts
 Name                                      Null?    Type
 ----------------------------------------- -------- ----------------------------
 ENAME                                              VARCHAR2(10)
 DEPTNO                                    NOT NULL NUMBER(2)
 MONTHLY                                            NUMBER(7,2)
 ANNUAL                                             NUMBER

SQL> SELECT * FROM EmpAccounts;

ENAME          DEPTNO    MONTHLY     ANNUAL
---------- ---------- ---------- ----------
MILLER             10       1300      15600
CLARK              10       2450      29400
KING               10       5000      60000


Execution Plan
----------------------------------------------------------
   0      SELECT STATEMENT Optimizer=ALL_ROWS (Cost=7 Card=1 Bytes=46)
   1    0   VIEW OF 'EMPACCOUNTS' (VIEW) (Cost=7 Card=1 Bytes=46)
   2    1     SORT (ORDER BY) (Cost=7 Card=1 Bytes=33)
   3    2       TABLE ACCESS (FULL) OF 'EMP' (TABLE) (Cost=3 Card=1 By
          tes=33)

   4    3         TABLE ACCESS (FULL) OF 'DEPT' (TABLE) (Cost=3 Card=1
           Bytes=22)



SQL> cl scr

SQL> CREATE OR REPLACE VIEW CumSum
  2  AS
  3  SELECT
  4   B.Sal,
  5   SUM(A.Sal) Cum_Sal
  6  FROM Emp A, Emp B
  7  WHERE A.RowID <= B.RowID
  8  GROUP BY B.RowID, B.Sal;

View created.

SQL> DESC CumSum
 Name                                      Null?    Type
```

```
 ---------------------------------------- -------- ----------------------------
 SAL                                               NUMBER(7,2)
 CUM_SAL                                           NUMBER

SQL> SELECT * FROM CumSum;

       SAL    CUM_SAL
---------- ----------
      5000       5000
      2850       7850
      2450      10300
      2975      13275
      1250      14525
      1600      16125
      1500      17625
       950      18575
      1250      19825
      3000      22825
       800      23625

       SAL    CUM_SAL
---------- ----------
      3000      26625
      1100      27725
      1300      29025

14 rows selected.


Execution Plan
----------------------------------------------------------
   0      SELECT STATEMENT Optimizer=ALL_ROWS (Cost=9 Card=10 Bytes=40
          0)

   1    0   SORT (GROUP BY) (Cost=9 Card=10 Bytes=400)
   2    1     MERGE JOIN (Cost=8 Card=10 Bytes=400)
   3    2       SORT (JOIN) (Cost=4 Card=14 Bytes=280)
   4    3         TABLE ACCESS (FULL) OF 'EMP' (TABLE) (Cost=3 Card=14
            Bytes=280)

   5    2       SORT (JOIN) (Cost=4 Card=14 Bytes=280)
   6    5         TABLE ACCESS (FULL) OF 'EMP' (TABLE) (Cost=3 Card=14
            Bytes=280)



SQL> cl scr

SQL> CREATE OR REPLACE VIEW OrgDesignations
  2  AS
  3  SELECT
  4   Job
  5  FROM Emp
  6  WHERE Deptno = 10
  7  UNION
```

```
  8  SELECT
  9   Job
 10  FROM Emp
 11  WHERE Deptno IN(20, 30);

View created.

SQL> SELECT * FROM OrgDesignations;

JOB
---------
ANALYST
CLERK
MANAGER
PRESIDENT
SALESMAN


Execution Plan
----------------------------------------------------------
   0      SELECT STATEMENT Optimizer=ALL_ROWS (Cost=8 Card=14 Bytes=84
          )

   1    0   VIEW OF 'ORGDESIGNATIONS' (VIEW) (Cost=8 Card=14 Bytes=84)
   2    1     SORT (UNIQUE) (Cost=8 Card=14 Bytes=266)
   3    2       UNION-ALL
   4    3         TABLE ACCESS (FULL) OF 'EMP' (TABLE) (Cost=3 Card=3
          Bytes=57)

   5    3         TABLE ACCESS (FULL) OF 'EMP' (TABLE) (Cost=3 Card=11
           Bytes=209)



SQL> cl scr

SQL> cl scr

SQL> DESC USER_VIEWS
 Name                                      Null?    Type
 ----------------------------------------- -------- ----------------------------
 VIEW_NAME                                 NOT NULL VARCHAR2(30)
 TEXT_LENGTH                                        NUMBER
 TEXT                                               LONG
 TYPE_TEXT_LENGTH                                   NUMBER
 TYPE_TEXT                                          VARCHAR2(4000)
 OID_TEXT_LENGTH                                    NUMBER
 OID_TEXT                                           VARCHAR2(4000)
 VIEW_TYPE_OWNER                                    VARCHAR2(30)
 VIEW_TYPE                                          VARCHAR2(30)
 SUPERVIEW_NAME                                     VARCHAR2(30)

SQL> COLUMN VIEW_NAME FORMAT A20
SQL> COLUMN TEXT FORMAT A40
SQL> SELECT VIEW_NAME, TEXT
```

```
  2  FROM USER_VIEWS
  3  WHERE VIEW_NAME = 'EMPACCOUNTS';

VIEW_NAME            TEXT
-------------------- ----------------------------------------
EMPACCOUNTS          SELECT
                        Ename,
                        Deptno,
                        Sal Monthly,
                        Sal * 12 Annual
                     FROM  Emp
                     WHERE Deptno =



Execution Plan
----------------------------------------------------------
ERROR:
ORA-01039: insufficient privileges on underlying objects of the view


SP2-0612: Error generating AUTOTRACE EXPLAIN report
SQL> SET LONG 300
SQL> SELECT VIEW_NAME, TEXT
  2  FROM USER_VIEWS
  3  WHERE VIEW_NAME = 'EMPACCOUNTS';

VIEW_NAME            TEXT
-------------------- ----------------------------------------
EMPACCOUNTS          SELECT
                        Ename,
                        Deptno,
                        Sal Monthly,
                        Sal * 12 Annual
                     FROM  Emp
                     WHERE Deptno = (SELECT
                                            Deptno
                                     FROM Dept
                                     WHERE Dname = 'ACCOUNTING')
                     ORDER BY Annual

VIEW_NAME            TEXT
-------------------- ----------------------------------------



Execution Plan
----------------------------------------------------------
ERROR:
ORA-01039: insufficient privileges on underlying objects of the view


SP2-0612: Error generating AUTOTRACE EXPLAIN report
SQL> cl scr

SQL> CREATE VIEW DeptSalSummary
```

```
  2  (
  3   DepartmentName,
  4   MinimumSalary,
  5   MaxSalary,
  6   AverageSalary,
  7   SalarySum
  8  )
  9  AS
 10  SELECT
 11   D.Dname,
 12   MIN(E.Sal),
 13   MAX(E.Sal),
 14   AVG(E.Sal),
 15   SUM(E.Sal)
 16  FROM Emp E, Dept D
 17  WHERE E.Deptno = D.Deptno
 18  GROUP BY D.Dname;

View created.

SQL> DESC DeptSalSummary
 Name                                      Null?    Type
 ----------------------------------------- -------- ----------------------------
 DEPARTMENTNAME                                     VARCHAR2(14)
 MINIMUMSALARY                                      NUMBER
 MAXSALARY                                          NUMBER
 AVERAGESALARY                                      NUMBER
 SALARYSUM                                          NUMBER

SQL> ED
Wrote file afiedt.buf

  1  CREATE OR REPLACE VIEW DeptSalSummary
  2  AS
  3  SELECT
  4   D.Dname,
  5   MIN(E.Sal),
  6   MAX(E.Sal),
  7   AVG(E.Sal),
  8   SUM(E.Sal)
  9  FROM Emp E, Dept D
 10  WHERE E.Deptno = D.Deptno
 11* GROUP BY D.Dname
SQL> /
      MIN(E.Sal),
      *
ERROR at line 5:
ORA-00998: must name this expression with a column alias


SQL> SPOOL OFF
SQL> cl scr

SQL> CREATE VIEW InsertDept
  2  (
  3    DeptID,
```

```
  4    DeptName,
  5    Place
  6  )
  7   AS
  8   SELECT
  9    Deptno,
 10    Dname,
 11    Loc
 12   FROM Dept;

View created.

SQL> DESC InsertDept
 Name                                      Null?    Type
 ----------------------------------------- -------- ----------------------------
 DEPTID                                    NOT NULL NUMBER(2)
 DEPTNAME                                           VARCHAR2(14)
 PLACE                                              VARCHAR2(13)

SQL> SELECT * FROM Dept;

    DEPTNO DNAME          LOC
---------- -------------- -------------
        10 ACCOUNTING     NEW YORK
        20 RESEARCH       DALLAS
        30 SALES          CHICAGO
        40 OPERATIONS     BOSTON

SQL> SELECT * FROM InsertDept;

    DEPTID DEPTNAME       PLACE
---------- -------------- -------------
        10 ACCOUNTING     NEW YORK
        20 RESEARCH       DALLAS
        30 SALES          CHICAGO
        40 OPERATIONS     BOSTON

SQL> INSERT INTO InsertDept
  2  VALUES(50, 'SHIPPING', 'CHENNAI');

1 row created.

SQL> SELECT * FROM Dept;

    DEPTNO DNAME          LOC
---------- -------------- -------------
        10 ACCOUNTING     NEW YORK
        20 RESEARCH       DALLAS
        30 SALES          CHICAGO
        40 OPERATIONS     BOSTON
        50 SHIPPING       CHENNAI

SQL> UPDATE InsertDept
  2  SET Dname = 'CARGO'
  3  WHERE Deptno = 50;
WHERE Deptno = 50
```

```
      *
ERROR at line 3:
ORA-00904: "DEPTNO": invalid identifier


SQL> UPDATE InsertDept
  2  SET DEPTNAME = 'CARGO'
  3  WHERE DEPTID = 50;

1 row updated.

SQL>  SELECT * FROM Dept;

    DEPTNO DNAME          LOC
---------- -------------- -------------
        10 ACCOUNTING     NEW YORK
        20 RESEARCH       DALLAS
        30 SALES          CHICAGO
        40 OPERATIONS     BOSTON
        50 CARGO          CHENNAI

SQL> DELETE FROM InsertDept
  2  WHERE DeptID = 50;

1 row deleted.

SQL> SELECT * FROM Dept;

    DEPTNO DNAME          LOC
---------- -------------- -------------
        10 ACCOUNTING     NEW YORK
        20 RESEARCH       DALLAS
        30 SALES          CHICAGO
        40 OPERATIONS     BOSTON

SQL> cl scr

SQL> COLUMN Empno FORMAT 9999
SQL> COLUMN Deptno FORMAT 99
SQL> COLUMN Sal FORMAT 9999
SQL> COLUMN Comm FORMAT 9999
SQL> cl scr

SQL> ROLLBACK;

Rollback complete.

SQL> cl scr

SQL> SELECT * FROM Emp;

EMPNO ENAME      JOB              MGR HIREDATE    SAL  COMM DEPTNO
----- ---------- --------- ---------- --------- ----- ----- ------
 7839 KING       PRESIDENT            17-NOV-81  5000           10
 7698 BLAKE      MANAGER         7839 01-MAY-81  2850           30
 7782 CLARK      MANAGER         7839 09-JUN-81  2450           10
```

```
 7566 JONES      MANAGER         7839 02-APR-81  2975           20
 7654 MARTIN     SALESMAN        7698 28-SEP-81  1250  1400     30
 7499 ALLEN      SALESMAN        7698 20-FEB-81  1600   300     30
 7844 TURNER     SALESMAN        7698 08-SEP-81  1500     0     30
 7900 JAMES      CLERK           7698 03-DEC-81   950           30
 7521 WARD       SALESMAN        7698 22-FEB-81  1250   500     30
 7902 FORD       ANALYST         7566 03-DEC-81  3000           20
 7369 SMITH      CLERK           7902 17-DEC-80   800           20

EMPNO ENAME      JOB              MGR HIREDATE    SAL  COMM DEPTNO
----- ---------- --------- ---------- --------- ----- ----- ------
 7788 SCOTT      ANALYST         7566 09-DEC-82  3000           20
 7876 ADAMS      CLERK           7788 12-JAN-83  1100           20
 7934 MILLER     CLERK           7782 23-JAN-82  1300           10

14 rows selected.

SQL> CREATE OR REPLACE VIEW EDept30
  2  AS
  3  SELECT *
  4  FROM Emp
  5  WHERE Deptno = 30;

View created.

SQL> DESC EDept30
 Name                                      Null?    Type
 ----------------------------------------- -------- ----------------------------
 EMPNO                                     NOT NULL NUMBER(4)
 ENAME                                              VARCHAR2(10)
 JOB                                                VARCHAR2(9)
 MGR                                                NUMBER(4)
 HIREDATE                                           DATE
 SAL                                                NUMBER(7,2)
 COMM                                               NUMBER(7,2)
 DEPTNO                                    NOT NULL NUMBER(2)

SQL> SELECT * FROM EDept30;

EMPNO ENAME      JOB              MGR HIREDATE    SAL  COMM DEPTNO
----- ---------- --------- ---------- --------- ----- ----- ------
 7698 BLAKE      MANAGER         7839 01-MAY-81  2850           30
 7654 MARTIN     SALESMAN        7698 28-SEP-81  1250  1400     30
 7499 ALLEN      SALESMAN        7698 20-FEB-81  1600   300     30
 7844 TURNER     SALESMAN        7698 08-SEP-81  1500     0     30
 7900 JAMES      CLERK           7698 03-DEC-81   950           30
 7521 WARD       SALESMAN        7698 22-FEB-81  1250   500     30

6 rows selected.

SQL> SELECT * FROM EDept30
  2  WHERE Ename = 'JONES';

no rows selected

SQL> SELECT * FROM EDept30
```

```
  2  WHERE Job = 'MANAGER';

EMPNO ENAME      JOB              MGR HIREDATE    SAL  COMM DEPTNO
----- ---------- --------- ---------- --------- ----- ----- ------
 7698 BLAKE      MANAGER          7839 01-MAY-81  2850           30

SQL> cl scr

SQL> DESC EDept30
 Name                                      Null?    Type
 ----------------------------------------- -------- ----------------------------
 EMPNO                                     NOT NULL NUMBER(4)
 ENAME                                              VARCHAR2(10)
 JOB                                                VARCHAR2(9)
 MGR                                                NUMBER(4)
 HIREDATE                                           DATE
 SAL                                                NUMBER(7,2)
 COMM                                               NUMBER(7,2)
 DEPTNO                                    NOT NULL NUMBER(2)

SQL> UPDATE EDept30
  2  SET Sal = Sal + 1000
  3  WHERE Empno = 7566;

0 rows updated.

SQL> UPDATE EDept30
  2  SET Sal = Sal + 1000
  3  WHERE Empno = 7654;

1 row updated.

SQL> DELETE FROM EDept30
  2  WHERE Ename = 'JONES';

0 rows deleted.

SQL> DELETE FROM EDept30
  2  WHERE Ename = 'TURNER';

1 row deleted.

SQL> INSERT INTO EDept30
  2  (Empno, Ename, Sal, Job, Deptno)
  3  VALUES(1234, 'SAMPLE01', 2500, 'CLERK', 30);

1 row created.

SQL> (Empno, Ename, Sal, Job, Deptno)
  2
SQL> INSERT INTO EDept30
  2  (Empno, Ename, Sal, Job, Deptno)
  3  VALUES(1235, 'SAMPLE02', 2500, 'CLERK', 20);

1 row created.
```

```
SQL> CREATE OR REPLACE VIEW EDept30
  2  AS
  3  SELECT *
  4  FROM Emp
  5  WHERE Deptno = 30
  6  WITH CHECK OPTION CONSTRAINT EDept30ChkView;

View created.

SQL> INSERT INTO EDept30
  2  (Empno, Ename, Sal, Job, Deptno)
  3  VALUES(1236, 'SAMPLE03', 2500, 'CLERK', 20);
INSERT INTO EDept30
            *
ERROR at line 1:
ORA-01402: view WITH CHECK OPTION where-clause violation


SQL> cl scr

SQL> CREATE OR REPLACE VIEW EDept30
  2  AS
  3  SELECT *
  4  FROM Emp
  5  WHERE Deptno = 30
  6  WITH READ ONLY;

View created.

SQL> INSERT INTO EDept30
  2  (Empno, Ename, Sal, Job, Deptno)
  3  VALUES(1236, 'SAMPLE03', 2500, 'CLERK', 20);
(Empno, Ename, Sal, Job, Deptno)
 *
ERROR at line 2:
ORA-01733: virtual column not allowed here


SQL> DELETE FROM EDept30
  2  WHERE Ename = 'TURNER';
DELETE FROM EDept30
            *
ERROR at line 1:
ORA-01752: cannot delete from view without exactly one key-preserved table


SQL> UPDATE EDept30
  2  SET Sal = Sal + 1000
  3  WHERE Ename = 'TURNER';
SET Sal = Sal + 1000
    *
ERROR at line 2:
ORA-01733: virtual column not allowed here


SQL> cl scr
```

```
SQL> CREATE TABLE MyMasterDF
  2  (
  3   MastID            NUMBER(2)
  4   CONSTRAINT MastIDDFPK PRIMARY KEY
  5   INITIALLY DEFERRED DEFERRABLE,
  6   MastName  VARCHAR2(10)
  7   CONSTRAINT MastNameDFCHK
  8   CHECK(MastName = UPPER(MastName))
  9   INITIALLY DEFERRED DEFERRABLE,
 10   MastDate  DATE
 11   CONSTRAINT MastDateDFNN NOT NULL
 12   INITIALLY DEFERRED DEFERRABLE
 13  );

Table created.

SQL> INSERT INTO
  2  MyMasterDF(MastID, MastName, MastDate)
  3  VALUES(10, 'MASTER10', '10-OCT-07');

1 row created.

SQL> INSERT INTO
  2  MyMasterDF(MastID, MastName, MastDate)
  3  VALUES(11, 'MASTER11', '11-OCT-07');

1 row created.

SQL> INSERT INTO
  2  MyMasterDF(MastID, MastName, MastDate)
  3  VALUES(12, 'MASTER12', '12-OCT-07');

1 row created.

SQL> INSERT INTO
  2  MyMasterDF(MastID, MastName, MastDate)
  3  VALUES(10, 'MASTER10', '10-OCT-07');

1 row created.

SQL> INSERT INTO
  2  MyMasterDF(MastID, MastName, MastDate)
  3  VALUES(12, 'MASTER12', '12-OCT-07');

1 row created.

SQL> COMMIT;
COMMIT
*
ERROR at line 1:
ORA-02091: transaction rolled back
ORA-00001: unique constraint (SCOTT.MASTIDDFPK) violated


SQL> SPOOL OFF
```