

Spool Generated For Class of Oracle By Satish K Yellanki

SQL> cl scr

SQL> SET VERIFY OFF

SQL> cl scr

```
SQL> CREATE OR REPLACE TYPE Student
 2 AS
 3 OBJECT
 4 (
 5 Studid          NUMBER(6)
 6 ,Sname          VARCHAR2(20)
 7 ,DOB            DATE
 8 ,DOA            DATE
 9 ,FEES           NUMBER(7, 2)
10 );
11 /
```

Type created.

SQL> DESC USER_OBJECTS

Name	Null?	Type
OBJECT_NAME		VARCHAR2(128)
SUBOBJECT_NAME		VARCHAR2(30)
OBJECT_ID		NUMBER
DATA_OBJECT_ID		NUMBER
OBJECT_TYPE		VARCHAR2(19)
CREATED		DATE
LAST_DDL_TIME		DATE
TIMESTAMP		VARCHAR2(19)
STATUS		VARCHAR2(7)
TEMPORARY		VARCHAR2(1)
GENERATED		VARCHAR2(1)
SECONDARY		VARCHAR2(1)

SQL> COLUMN OBJECT_NAME FORMAT A10

SQL> COLUMN OBJECT_TYPE FORMAT A10

SQL> COLUMN OBJECT_ID FORMAT 9999999999999999

```
SQL> SELECT OBJECT_ID, OBJECT_TYPE, OBJECT_NAME, CREATED
 2 FROM USER_OBJECTS;
```

OBJECT_ID	OBJECT_TYP	OBJECT_NAM	CREATED
52594	TYPE	STUDENT	29-JUL-10

```
SQL> SELECT OBJECT_ID, DATA_OBJECT_ID, OBJECT_TYPE, OBJECT_NAME, CREATED
 2 FROM USER_OBJECTS
 3
```

SQL> COLUMN OBJECT_ID FORMAT 999999

SQL> /

OBJECT_ID	DATA_OBJECT_ID	OBJECT_TYP	OBJECT_NAM	CREATED
52594		TYPE	STUDENT	29-JUL-10

SQL> DESC USER_TYPES

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Name	Null?	Type
TYPE_NAME	NOT NULL	VARCHAR2(30)
TYPE_OID	NOT NULL	RAW(16)
TYPECODE		VARCHAR2(30)
ATTRIBUTES		NUMBER
METHODS		NUMBER
PREDEFINED		VARCHAR2(3)
INCOMPLETE		VARCHAR2(3)
FINAL		VARCHAR2(3)
INSTANTIABLE		VARCHAR2(3)
SUPERTYPE_OWNER		VARCHAR2(30)
SUPERTYPE_NAME		VARCHAR2(30)
LOCAL_ATTRIBUTES		NUMBER
LOCAL_METHODS		NUMBER
TYPEID		RAW(16)

```
SQL> COLUMN TYPE_NAME FORMAT A10
SQL> COLUMN ATTRIBUTES FORMAT 999
SQL> COLUMN TYPE_OID FORMAT A15
SQL> COLUMN TYPE_CODE FORMAT A15
SQL> SELECT TYPE_NAME, ATTRIBUTES, TYPE_OID, TYPE_CODE
  2 FROM USER_TYPES;
SELECT TYPE_NAME, ATTRIBUTES, TYPE_OID, TYPE_CODE
      *
```

```
ERROR at line 1:
ORA-00904: "TYPE_CODE": invalid identifier
```

```
SQL> ED
Wrote file afiedt.buf
```

```
  1 SELECT TYPE_NAME, ATTRIBUTES, TYPE_OID
  2* FROM USER_TYPES
```

```
SQL> ED
Wrote file afiedt.buf
```

```
  1 SELECT TYPE_NAME, ATTRIBUTES, TYPE_OID
  2* FROM USER_TYPES
```

```
SQL> /
```

```
TYPE_NAME  ATTRIBUTES  TYPE_OID
-----
STUDENT          5 1E74881F216B4EF
                E95ECA63DD27F72
                E7
```

```
SQL> cl scr
```

```
SQL> DESC Student
```

Name	Null?	Type
STUDID		NUMBER(6)
SNAME		VARCHAR2(20)
DOB		DATE

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```
DOA                                DATE
FEES                               NUMBER(7,2)
```

```
SQL> INSERT INTO Student
  2  VALUES(1, 'SAMPLE01', SYSDATE, SYSDATE, 25000);
INSERT INTO Student
      *
```

```
ERROR at line 1:
ORA-04044: procedure, function, package, or type is not allowed here
```

```
SQL> cl scr
```

```
SQL> CREATE TABLE McaStudent
  2  OF Student;
```

Table created.

```
SQL> DESC Student
```

Name	Null?	Type
STUDID		NUMBER(6)
SNAME		VARCHAR2(20)
DOB		DATE
DOA		DATE
FEES		NUMBER(7,2)

```
SQL> DESC McaStudent
```

Name	Null?	Type
STUDID		NUMBER(6)
SNAME		VARCHAR2(20)
DOB		DATE
DOA		DATE
FEES		NUMBER(7,2)

```
SQL> INSERT INTO McaStudent
  2  VALUES(1234, 'KUMAR', '07-OCT-98', SYSDATE, 15000);
```

1 row created.

```
SQL> INSERT INTO McaStudent(StudID, SName)
```

```
  2  VALUES(1235, 'KRISHNA');
```

1 row created.

```
SQL> INSERT INTO McaStudent
```

```
  2  VALUES(
  3      Student(
  4          1236,
  5          'SATISH',
  6          '05-SEP-99',
  7          SYSDATE,
  8          1300
  9          )
 10  );
```

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1 row created.

```
SQL> COLUMN SName FORMAT A12
SQL> COLUMN StudID FORMAT 9999
SQL> cl scr
```

```
SQL> SELECT * FROM McaStudent;
```

STUDID	SNAME	DOB	DOA	FEES
1234	KUMAR	07-OCT-98	29-JUL-10	15000
1235	KRISHNA			
1236	SATISH	05-SEP-99	29-JUL-10	1300

```
SQL> SELECT StudID, Sname
2 FROM McaStudent;
```

```
STUDID SNAME
-----
1234 KUMAR
1235 KRISHNA
1236 SATISH
```

```
SQL> SELECT StudID, Sname
2 FROM McaStudent
3 WHERE StudID = 1234;
```

```
STUDID SNAME
-----
1234 KUMAR
```

```
SQL> UPDATE McaStudent
2 SET Sname = 'SRI RAM'
3 WHERE StudID = 1234;
```

1 row updated.

```
SQL> SELECT StudID, Sname
2 FROM McaStudent
3 WHERE StudID = 1234;
```

```
STUDID SNAME
-----
1234 SRI RAM
```

```
SQL> DELETE FROM McaStudent
2 WHERE StudID = 1234;
```

1 row deleted.

```
SQL> SELECT StudID, Sname
2 FROM McaStudent
3 WHERE StudID = 1234;
```

no rows selected

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```
SQL> DELETE FROM McaStudent;
```

2 rows deleted.

```
SQL> SELECT StudID, Sname  
2 FROM McaStudent;
```

no rows selected

```
SQL> cl scr
```

```
SQL> CREATE OR REPLACE TYPE Address  
2 AS  
3 OBJECT  
4 (  
5   HouseNum          VARCHAR2(15)  
6   ,Street           VARCHAR2(20)  
7   ,City             VARCHAR2(20)  
8   ,District         VARCHAR2(20)  
9   ,State            VARCHAR2(20)  
10  ,Country          VARCHAR2(20)  
11  ,Pin              CHAR(6)  
12 );  
13 /
```

Type created.

```
SQL> CREATE OR REPLACE TYPE Name  
2 AS  
3 OBJECT  
4 (  
5   FirstName         VARCHAR2(20)  
6   ,MiddleName       VARCHAR2(20)  
7   ,LastName         VARCHAR2(20)  
8 );  
9 /
```

Type created.

```
SQL> CREATE OR REPLACE TYPE Person  
2 AS  
3 OBJECT  
4 (  
5   Personid          NUMBER(6)  
6   ,PersonFullName   NAME  
7   ,PersonDOB        DATE  
8   ,PersonAddress    ADDRESS  
9 );  
10 /
```

Type created.

```
SQL> CREATE OR REPLACE TYPE Fees  
2 AS  
3 OBJECT
```

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```
4 (
5   TutionFees      NUMBER(8, 2)
6   ,LabFees         NUMBER(6, 2)
7   ,SportsFees     NUMBER(6, 2)
8   ,LibraryFees    NUMBER(6, 2)
9   ,ExamFees       NUMBER(6, 2)
10  ,TransportFees  NUMBER(7, 2)
11  ,HostelFees     NUMBER(8, 2)
12  ,MessFees       NUMBER(8, 2)
13 );
14 /
```

Type created.

```
SQL> CREATE OR REPLACE TYPE StudentColl
2 AS
3 OBJECT
4 (
5   Student          PERSON
6   ,StudentFees     FEES
7 );
8 /
```

Type created.

```
SQL> CREATE TABLE MCAStudent
2 OF
3 StudentColl;
CREATE TABLE MCAStudent
*
```

ERROR at line 1:

ORA-00955: name is already used by an existing object

```
SQL> DROP TABLE MCAStudent;
```

Table dropped.

```
SQL> CREATE TABLE MCAStudent
2 OF
3 StudentColl;
```

Table created.

```
SQL> cl scr
```

```
SQL> DESC MCAStudent
```

Name	Null?	Type
STUDENT		PERSON
STUDENTFEES		FEES

```
SQL> SET DESCRIBE DEPTH 1
```

```
SQL> DESC MCAStudent
```

Name	Null?	Type
------	-------	------

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```
6 )
7 VALUES
8 (
9   PERSON(1234, NAME
10          (
11            'SATISH', 'KUMAR', 'YELLANKI'
12          )
13          , '02-OCT-86'
14          , ADDRESS
15            (
16              '2-715/B/6'
17              , 'BALKAMPET ROAD'
18              , 'HYDERABAD'
19              , 'RANGA REDDY'
20              , 'ANDHRA PRADESH'
21              , 'INDIA'
22              , '500016'
23            )
24          )
25   , FEES
26   (
27     100000
28     , 6000
29     , 2000
30     , 1500
31     , 5000
32     , 20000
33     , 12000
34     , 27000
35   )
36 );
```

1 row created.

```
SQL> INSERT INTO
2   MCAStudent
3   (
4     Student
5     , StudentFees
6   )
7   VALUES
8   (
9     PERSON(1235, NAME
10            (
11              'RAVI', 'KUMAR', 'SHARMA'
12            )
13            , '03-JAN-86'
14            , ADDRESS
15              (
16                '2-716/B/6'
17                , 'SHIVAM ROAD'
18                , 'HYDERABAD'
19                , 'RANGA REDDY'
20                , 'ANDHRA PRADESH'
21                , 'INDIA'
22                , '500016'
```


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```
23          )
24      )
25      ,FEES
26      (
27          100000
28          ,6000
29          ,2000
30          ,1500
31          ,5000
32          ,20000
33          ,12000
34          ,27000
35      )
36 );
```

1 row created.

```
SQL> INSERT INTO
  2 MCAStudent
  3 (
  4     Student
  5     ,StudentFees
  6 )
  7 VALUES
  8 (
  9     PERSON(1236, NAME
10          (
11              'RAMANA', 'KUMAR', 'RANJAN'
12          )
13          , '23-JUN-86'
14          ,ADDRESS
15              (
16                  '2-716/B/6'
17                  , 'GANDHI ROAD'
18                  , 'HYDERABAD'
19                  , 'RANGA REDDY'
20                  , 'ANDHRA PRADESH'
21                  , 'INDIA'
22                  , '500016'
23              )
24          )
25      ,FEES
26      (
27          100000
28          ,6000
29          ,2000
30          ,1500
31          ,5000
32          ,20000
33          ,12000
34          ,27000
35      )
36 );
```

1 row created.

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```
SQL> cl scr
```

```
SQL> SELECT * FROM MCAStudent;
```

```
STUDENT(PERSONID, PERSONFULLNAME(FIRSTNAME, MIDDLENAME, LASTNAME), PERSONDOB, PE
```

```
-----  
STUDENTFEES(TUTIONFEES, LABFEES, SPORTSFEES, LIBRARYFEES, EXAMFEES, TRANSPORTFEE
```

```
-----  
PERSON(1234, NAME('SATISH', 'KUMAR', 'YELLANKI'), '02-OCT-86', ADDRESS('2-715/B/  
6', 'BALKAMPET ROAD', 'HYDERABAD', 'RANGA REDDY', 'ANDHRA PRADESH', 'INDIA', '50  
0016'))
```

```
FEES(100000, 6000, 2000, 1500, 5000, 20000, 12000, 27000)
```

```
PERSON(1235, NAME('RAVI', 'KUMAR', 'SHARMA'), '03-JAN-86', ADDRESS('2-716/B/6',  
'SHIVAM ROAD', 'HYDERABAD', 'RANGA REDDY', 'ANDHRA PRADESH', 'INDIA', '500016'))
```

```
FEES(100000, 6000, 2000, 1500, 5000, 20000, 12000, 27000)
```

```
STUDENT(PERSONID, PERSONFULLNAME(FIRSTNAME, MIDDLENAME, LASTNAME), PERSONDOB, PE
```

```
-----  
STUDENTFEES(TUTIONFEES, LABFEES, SPORTSFEES, LIBRARYFEES, EXAMFEES, TRANSPORTFEE
```

```
-----  
PERSON(1236, NAME('RAMANA', 'KUMAR', 'RANJAN'), '23-JUN-86', ADDRESS('2-716/B/6'  
, 'GANDHI ROAD', 'HYDERABAD', 'RANGA REDDY', 'ANDHRA PRADESH', 'INDIA', '500016'  
)
```

```
FEES(100000, 6000, 2000, 1500, 5000, 20000, 12000, 27000)
```

```
SQL> COLUMN FNAME FORMAT A10
```

```
SQL> COLUMN Mname FORMAT A10
```

```
SQL> COLUMN LName FORMAT A10
```

```
SQL> COLUMN FullName FORMAT A30
```

```
SQL> SELECT
```

```
 2 E1.Student.PersonFullName.FirstName FName,  
 3 E1.Student.PersonFullName.MiddleName MName,  
 4 E1.Student.PersonFullName.LastName LName,  
 5 E1.Student.PersonFullName.FirstName||' '  
 6 ||E1.Student.PersonFullName.MiddleName||' '  
 7 ||E1.Student.PersonFullName.LastName FullName  
 8 FROM MCAStudent E1;
```

FNAME	MNAME	LNAME	FULLNAME
SATISH	KUMAR	YELLANKI	SATISH KUMAR YELLANKI
RAVI	KUMAR	SHARMA	RAVI KUMAR SHARMA
RAMANA	KUMAR	RANJAN	RAMANA KUMAR RANJAN

```
SQL> SELECT
```

```
 2 E1.Student.PersonFullName.FirstName FName,  
 3 E1.Student.PersonFullName.MiddleName MName,  
 4 E1.Student.PersonFullName.LastName LName,  
 5 E1.Student.PersonFullName.FirstName||' '  
 6 ||E1.Student.PersonFullName.MiddleName||' '  
 7 ||E1.Student.PersonFullName.LastName FullName  
 8 FROM (  
 9     SELECT *
```

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```
10      FROM MCAStudent
11      ) E1;
```

FNAME	MNAME	LNAME	FULLNAME
SATISH	KUMAR	YELLANKI	SATISH KUMAR YELLANKI
RAVI	KUMAR	SHARMA	RAVI KUMAR SHARMA
RAMANA	KUMAR	RANJAN	RAMANA KUMAR RANJAN

```
SQL> CREATE OR REPLACE VIEW StudentName
 2 AS
 3 SELECT
 4   E1.Student.PersonFullName.FirstName FName,
 5   E1.Student.PersonFullName.MiddleName MName,
 6   E1.Student.PersonFullName.LastName LName,
 7   E1.Student.PersonFullName.FirstName||' '
 8   ||E1.Student.PersonFullName.MiddleName||' '
 9   ||E1.Student.PersonFullName.LastName FullName
10 FROM MCAStudent E1;
```

View created.

```
SQL> DESC StudentName
```

Name	Null?	Type
FNAME		VARCHAR2(20)
MNAME		VARCHAR2(20)
LNAME		VARCHAR2(20)
FULLNAME		VARCHAR2(62)

```
SQL> SELECT * FROM StudentName;
```

FNAME	MNAME	LNAME	FULLNAME
SATISH	KUMAR	YELLANKI	SATISH KUMAR YELLANKI
RAVI	KUMAR	SHARMA	RAVI KUMAR SHARMA
RAMANA	KUMAR	RANJAN	RAMANA KUMAR RANJAN

```
SQL> UPDATE MCAStudent
 2 SET
 3   FirstName = 'RAGHAVA'
 4 WHERE PersonID = 1236;
WHERE PersonID = 1236
*
```

ERROR at line 4:
ORA-00904: "PERSONID": invalid identifier

```
SQL> UPDATE MCAStudent
 2 SET
 3   MCAStudent.Student.PersonFullName.FirstName = 'RAGHAVA'
 4 WHERE MCAStudent.Student.PersonID = 1236;
WHERE MCAStudent.Student.PersonID = 1236
*
```

ERROR at line 4:
ORA-00904: "MCASTUDENT"."STUDENT"."PERSONID": invalid identifier

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SQL> ED

Wrote file afiedt.buf

```
1 UPDATE MCAStudent MCA
2 SET
3 MCA.Student.PersonFullName.FirstName = 'RAGHAVA'
4* WHERE MCA.Student.PersonID = 1236
SQL> /
```

1 row updated.

SQL> SELECT * FROM StudentName;

FNAME	MNAME	LNAME	FULLNAME
SATISH	KUMAR	YELLANKI	SATISH KUMAR YELLANKI
RAVI	KUMAR	SHARMA	RAVI KUMAR SHARMA
RAGHAVA	KUMAR	RANJAN	RAGHAVA KUMAR RANJAN

SQL>

```
SQL> UPDATE (
2         SELECT *
3         FROM MCAStudent
4         ) MCA
5 SET
6 MCA.Student.PersonFullName.FirstName = 'RAGHAVA'
7 WHERE MCA.Student.PersonID = 1236;
```

1 row updated.

```
SQL> DELETE MCAStudent MCA
2 WHERE MCA.Student.PersonID = 1236;
```

1 row deleted.

SQL> SELECT * FROM StudentName;

FNAME	MNAME	LNAME	FULLNAME
SATISH	KUMAR	YELLANKI	SATISH KUMAR YELLANKI
RAVI	KUMAR	SHARMA	RAVI KUMAR SHARMA

```
SQL> DELETE (
2         SELECT *
3         FROM MCAStudent
4         ) MCA
5 WHERE MCA.Student.PersonID = 1236;
```

0 rows deleted.

SQL> SPOOL OFF

SQL> cl scr

SQL> COLUMN InchargeName FORMAT A19

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```
SQL> COLUMN StudentIncharge FORMAT A25
SQL> COLUMN OID FORMAT A25
SQL> SELECT * FROM StudentIncharges;
```

no rows selected

```
SQL> cl scr
```

```
SQL> DESC MCAstudent
```

Name	Null?	Type
STUDID		NUMBER(6)
SNAME		VARCHAR2(20)
DOB		DATE
DOA		DATE
FEES		NUMBER(7,2)

```
SQL> COLUMN STUDID FORMAT 9999
SQL> COLUMN SNAME FORMAT A10
SQL> COLUMN Fees FORMAT 99999
SQL> SELECT * FROM MCAstudent;
```

STUDID	SNAME	DOB	DOA	FEES
1100	KUMAR	07-OCT-80	30-JUL-10	15000
1101	SESHU	07-OCT-81	30-JUL-10	15000
1102	RAMANA	07-OCT-80	30-JUL-10	15000
1103	RAMU	07-OCT-82	30-JUL-10	15000
1104	SRIPATH	07-OCT-83	30-JUL-10	15000

```
SQL> SELECT
  2 'SUBRAMANYAM SHARMA' InchargeName,
  3 REF(A) StudentIncharge
  4 FROM McaStudent A
  5 WHERE SName = 'SESHU';
```

INCHARGENAME	STUDENTINCHARGE
SUBRAMANYAM SHARMA	0000280209FA2A77B669F548C 8A36B581FF12354371C2C7E2A 1E654C848A33AA9EBB45597B0 10000370004

```
SQL> CREATE TABLE MBASstudent
  2 OF Student;
```

Table created.

```
SQL> CREATE TABLE MASstudent
  2 OF Student;
```

Table created.

```
SQL> CREATE TABLE MComStudent
  2 OF Student;
```

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Table created.

```
SQL> cl scr
```

```
SQL> SELECT * FROM Tab;
```

TNAME	TABTYPE	CLUSTERID
MBASTUDENT	TABLE	
MASTUDENT	TABLE	
MCOMSTUDENT	TABLE	
MCASTUDENT	TABLE	
STUDENTINCHARGES	TABLE	

```
SQL> BEGIN
```

```
 2 INSERT INTO McaStudent
 3 VALUES(1100, 'KUMAR', '07-Oct-80', SYSDATE, 15000);
 4 INSERT INTO McaStudent
 5 VALUES(1101, 'SESHU', '07-Oct-81', SYSDATE, 15000);
 6 INSERT INTO McaStudent
 7 VALUES(1102, 'RAMANA', '07-Oct-80', SYSDATE, 15000);
 8 INSERT INTO McaStudent
 9 VALUES(1103, 'RAMU', '07-Oct-82', SYSDATE, 15000);
10 INSERT INTO McaStudent
11 VALUES(1104, 'SRIPATH', '07-Oct-83', SYSDATE, 15000);
12 INSERT INTO MBAStudent
13 VALUES(1200, 'SAMPATH', '10-DEC-85', SYSDATE, 25000);
14 INSERT INTO MBAStudent
15 VALUES(1201, 'SURESH', '10-DEC-80', SYSDATE, 25000);
16 INSERT INTO MBAStudent
17 VALUES(1202, 'RAJESH', '10-DEC-83', SYSDATE, 25000);
18 INSERT INTO MASTudent
19 VALUES(1300, 'BOBBY', '10-DEC-80', SYSDATE, 25000);
20 INSERT INTO MASTudent
21 VALUES(1301, 'SUNDER', '10-DEC-85', SYSDATE, 25000);
22 INSERT INTO MComStudent
23 VALUES(1400, 'RAMESH', '10-DEC-83', SYSDATE, 25000);
24 COMMIT;
25 END;
26 /
```

PL/SQL procedure successfully completed.

```
SQL> cl scr
```

```
SQL> SELECT * FROM MCASTudent;
```

STUDID	SNAME	DOB	DOA	FEES
1101	SESHU	07-OCT-81	02-AUG-10	15000
1102	RAMANA	07-OCT-80	02-AUG-10	15000
1103	RAMU	07-OCT-82	02-AUG-10	15000
1100	KUMAR	07-OCT-80	30-JUL-10	15000
1101	SESHU	07-OCT-81	30-JUL-10	15000
1102	RAMANA	07-OCT-80	30-JUL-10	15000

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```
1103 RAMU      07-OCT-82 30-JUL-10 15000
1104 SRIPATH   07-OCT-83 30-JUL-10 15000
1100 KUMAR     07-OCT-80 02-AUG-10 15000
1104 SRIPATH   07-OCT-83 02-AUG-10 15000
```

10 rows selected.

```
SQL> DELETE FROM MCASTUDENT;
```

10 rows deleted.

```
SQL> COMMIT;
```

Commit complete.

```
SQL> cl scr
```

```
SQL> ED
```

Wrote file afiedt.buf

```
1 BEGIN
2 INSERT INTO McaStudent
3 VALUES(1100, 'KUMAR', '07-Oct-80', SYSDATE, 15000);
4 INSERT INTO McaStudent
5 VALUES(1101, 'SESHU', '07-Oct-81', SYSDATE, 15000);
6 INSERT INTO McaStudent
7 VALUES(1102, 'RAMANA', '07-Oct-80', SYSDATE, 15000);
8 INSERT INTO McaStudent
9 VALUES(1103, 'RAMU', '07-Oct-82', SYSDATE, 15000);
10 INSERT INTO McaStudent
11 VALUES(1104, 'SRIPATH', '07-Oct-83', SYSDATE, 15000);
12 COMMIT;
13* END;
SQL> /
```

PL/SQL procedure successfully completed.

```
SQL> cl scr
```

```
SQL> SELECT * FROM MCASTUDENT;
```

STUDID	SNAME	DOB	DOA	FEES
1100	KUMAR	07-OCT-80	02-AUG-10	15000
1101	SESHU	07-OCT-81	02-AUG-10	15000
1102	RAMANA	07-OCT-80	02-AUG-10	15000
1103	RAMU	07-OCT-82	02-AUG-10	15000
1104	SRIPATH	07-OCT-83	02-AUG-10	15000

```
SQL> SELECT * FROM MBASTUDENT;
```

STUDID	SNAME	DOB	DOA	FEES
1200	SAMPATH	10-DEC-85	02-AUG-10	25000
1201	SURESH	10-DEC-80	02-AUG-10	25000
1202	RAJESH	10-DEC-83	02-AUG-10	25000

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```
SQL> SELECT * FROM MASTudent;
```

STUDID	SNAME	DOB	DOA	FEEES
1300	BOBBY	10-DEC-80	02-AUG-10	25000
1301	SUNDER	10-DEC-85	02-AUG-10	25000

```
SQL> SELECT * FROM MComStudent;
```

STUDID	SNAME	DOB	DOA	FEEES
1400	RAMESH	10-DEC-83	02-AUG-10	25000

```
SQL> cl scr
```

```
SQL> BEGIN
  2  INSERT INTO
  3  StudentIncharges
  4  SELECT
  5  'SUBRAMANYAM SHARMA',
  6  REF(A)
  7  FROM McaStudent A
  8  WHERE SName = 'SESHU';
  9  INSERT INTO StudentIncharges
 10  SELECT
 11  'SUBRAMANYAM SHARMA',
 12  REF(A)
 13  FROM McaStudent A
 14  WHERE SName = 'RAMANA';
 15  INSERT INTO StudentIncharges
 16  SELECT
 17  'SUBRAMANYAM SHARMA',
 18  REF(A)
 19  FROM McaStudent A
 20  WHERE SName = 'SRIPATH';
 21  INSERT INTO StudentIncharges
 22  SELECT
 23  'NIRANJAN RAMORI',
 24  REF(A)
 25  FROM McaStudent A
 26  WHERE SName = 'KUMAR';
 27  INSERT INTO StudentIncharges
 28  SELECT
 29  'NIRANJAN RAMORI',
 30  REF(A)
 31  FROM McaStudent A
 32  WHERE SName = 'RAMU';
 33  END;
 34  /
```

```
PL/SQL procedure successfully completed.
```

```
SQL> COMMIT;
```

```
Commit complete.
```


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SQL> cl scr

```
SQL> SELECT *
      2 FROM StudentIncharges
      3 WHERE InchargeName = 'SUBRAMANYAM SHARMA';
```

INCHARGENAME	STUDENTINCHARGE
SUBRAMANYAM SHARMA	0000220208ED66DAEA0E954BD 4929E25DCCA43FAEE1C2C7E2A 1E654C848A33AA9EBB45597B
SUBRAMANYAM SHARMA	0000220208F1A6DA06BC66440 49FC333A08475B9E81C2C7E2A 1E654C848A33AA9EBB45597B
SUBRAMANYAM SHARMA	0000220208F410869986DA415 DB48FED91BF3C92EF1C2C7E2A 1E654C848A33AA9EBB45597B

INCHARGENAME	STUDENTINCHARGE
--------------	-----------------

SQL> ED

Wrote file afiedt.buf

```
      1 SELECT *
      2 FROM StudentIncharges
      3* WHERE InchargeName = 'NIRANJAN RAMORI'
SQL> /
```

INCHARGENAME	STUDENTINCHARGE
NIRANJAN RAMORI	0000220208B5154F3D38B1444 F811E7EDDA5C0D3D51C2C7E2A 1E654C848A33AA9EBB45597B
NIRANJAN RAMORI	000022020858AE1BD83198452 C897A9119162C452A1C2C7E2A 1E654C848A33AA9EBB45597B

```
SQL> SELECT
      2 Deref(X.StudentIncharge)
      3 FROM StudentIncharges X
      4 WHERE InchargeName = 'SUBRAMANYAM SHARMA';
```

DEREF(X.STUDENTINCHARGE)(STUDID, SNAME, DOB, DOA, FEES)

```
-----
STUDENT(1101, 'SESHU', '07-OCT-81', '02-AUG-10', 15000)
STUDENT(1102, 'RAMANA', '07-OCT-80', '02-AUG-10', 15000)
STUDENT(1104, 'SRIPATH', '07-OCT-83', '02-AUG-10', 15000)
```

SQL> SELECT

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```
2 Deref(X.StudentIncharge)
3 FROM StudentIncharges X
4 WHERE InchargeName = 'NIRANJAN RAMORI';
```

```
Deref(X.STUDENTINCHARGE)(STUDID, SNAME, DOB, DOA, FEES)
```

```
-----
STUDENT(1100, 'KUMAR', '07-OCT-80', '02-AUG-10', 15000)
STUDENT(1103, 'RAMU', '07-OCT-82', '02-AUG-10', 15000)
```

```
SQL> BEGIN
2 INSERT INTO StudentIncharges
3 SELECT
4 'SUBRAMANYAM SHARMA',
5 Ref(A)
6 FROM MBAStudent A
7 WHERE SName = 'SAMPATH';
8 INSERT INTO StudentIncharges
9 SELECT
10 'SUBRAMANYAM SHARMA',
11 Ref(A)
12 FROM MBAStudent A
13 WHERE SName = 'RAJESH';
14 INSERT INTO StudentIncharges
15 SELECT
16 'NIRANJAN RAMORI',
17 Ref(A)
18 FROM MBAStudent A
19 WHERE SName = 'SURESH';
20 END;
21 /
```

PL/SQL procedure successfully completed.

```
SQL> COMMIT;
```

Commit complete.

```
SQL> SELECT *
2 FROM StudentIncharges
3 WHERE InchargeName = 'SUBRAMANYAM SHARMA';
```

INCHARGENAME	STUDENTINCHARGE
SUBRAMANYAM SHARMA	0000220208ED66DAEA0E954BD 4929E25DCCA43FAEE1C2C7E2A 1E654C848A33AA9EBB45597B
SUBRAMANYAM SHARMA	0000220208F1A6DA06BC66440 49FC333A08475B9E81C2C7E2A 1E654C848A33AA9EBB45597B
SUBRAMANYAM SHARMA	0000220208F410869986DA415 DB48FED91BF3C92EF1C2C7E2A 1E654C848A33AA9EBB45597B

INCHARGENAME	STUDENTINCHARGE
--------------	-----------------

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```
-----  
SUBRAMANYAM SHARMA 000022020836EC82D132E24E2  
AAF045D0CCEB8EC71DC81AA66  
119E46B6BC9B12173D9331B6
```

```
SUBRAMANYAM SHARMA 0000220208E8080A7CA76845A  
38F8A5DF113D34A6FDC81AA66  
119E46B6BC9B12173D9331B6
```

```
SQL> SELECT  
2 Deref(X.StudentIncharge)  
3 FROM StudentIncharges X  
4 WHERE InchargeName = 'SUBRAMANYAM SHARMA';
```

```
Deref(X.STUDENTINCHARGE)(STUDID, SNAME, DOB, DOA, FEES)
```

```
-----  
STUDENT(1101, 'SESHU', '07-OCT-81', '02-AUG-10', 15000)  
STUDENT(1102, 'RAMANA', '07-OCT-80', '02-AUG-10', 15000)  
STUDENT(1104, 'SRIPATH', '07-OCT-83', '02-AUG-10', 15000)  
STUDENT(1200, 'SAMPATH', '10-DEC-85', '02-AUG-10', 25000)  
STUDENT(1202, 'RAJESH', '10-DEC-83', '02-AUG-10', 25000)
```

```
SQL> SELECT  
2 Deref(X.StudentIncharge)  
3 FROM StudentIncharges X  
4 WHERE InchargeName = 'NIRANJAN RAMORI';
```

```
Deref(X.STUDENTINCHARGE)(STUDID, SNAME, DOB, DOA, FEES)
```

```
-----  
STUDENT(1100, 'KUMAR', '07-OCT-80', '02-AUG-10', 15000)  
STUDENT(1103, 'RAMU', '07-OCT-82', '02-AUG-10', 15000)  
STUDENT(1201, 'SURESH', '10-DEC-80', '02-AUG-10', 25000)
```

```
SQL> BEGIN  
2 INSERT INTO StudentIncharges  
3 SELECT  
4 'NIRANJAN RAMORI',  
5 Ref(A)  
6 FROM MASTudent A  
7 WHERE SName = 'BOBBY';  
8 INSERT INTO StudentIncharges  
9 SELECT  
10 'NIRANJAN RAMORI',  
11 Ref(A)  
12 FROM MASTudent A  
13 WHERE SName = 'SUNDER';  
14 END;  
15 /
```

PL/SQL procedure successfully completed.

```
SQL> COMMIT;
```

Commit complete.

Spool Generated For Class of Oracle By Satish K Yellanki

```
SQL> SELECT
  2  Deref(X.StudentIncharge)
  3  FROM StudentIncharges X
  4  WHERE InchargeName = 'SUBRAMANYAM SHARMA';
```

```
Deref(X.STUDENTINCHARGE)(STUDID, SNAME, DOB, DOA, FEES)
```

```
-----
STUDENT(1101, 'SESHU', '07-OCT-81', '02-AUG-10', 15000)
STUDENT(1102, 'RAMANA', '07-OCT-80', '02-AUG-10', 15000)
STUDENT(1104, 'SRIPATH', '07-OCT-83', '02-AUG-10', 15000)
STUDENT(1200, 'SAMPATH', '10-DEC-85', '02-AUG-10', 25000)
STUDENT(1202, 'RAJESH', '10-DEC-83', '02-AUG-10', 25000)
```

```
SQL> SELECT
  2  Deref(X.StudentIncharge)
  3  FROM StudentIncharges X
  4  WHERE InchargeName = 'NIRANJAN RAMORI';
```

```
Deref(X.STUDENTINCHARGE)(STUDID, SNAME, DOB, DOA, FEES)
```

```
-----
STUDENT(1100, 'KUMAR', '07-OCT-80', '02-AUG-10', 15000)
STUDENT(1103, 'RAMU', '07-OCT-82', '02-AUG-10', 15000)
STUDENT(1201, 'SURESH', '10-DEC-80', '02-AUG-10', 25000)
STUDENT(1300, 'BOBBY', '10-DEC-80', '02-AUG-10', 25000)
STUDENT(1301, 'SUNDER', '10-DEC-85', '02-AUG-10', 25000)
```

```
SQL> BEGIN
  2  INSERT INTO StudentIncharges
  3  SELECT
  4  'NIRANJAN RAMORI',
  5  Ref(A)
  6  FROM MComStudent A
  7  WHERE SName = 'RAMESH';
  8  END;
  9  /
```

PL/SQL procedure successfully completed.

```
SQL> COMMIT;
```

Commit complete.

```
SQL> SELECT
  2  Deref(X.StudentIncharge)
  3  FROM StudentIncharges X
  4  WHERE InchargeName = 'NIRANJAN RAMORI';
```

```
Deref(X.STUDENTINCHARGE)(STUDID, SNAME, DOB, DOA, FEES)
```

```
-----
STUDENT(1100, 'KUMAR', '07-OCT-80', '02-AUG-10', 15000)
STUDENT(1103, 'RAMU', '07-OCT-82', '02-AUG-10', 15000)
STUDENT(1201, 'SURESH', '10-DEC-80', '02-AUG-10', 25000)
STUDENT(1300, 'BOBBY', '10-DEC-80', '02-AUG-10', 25000)
STUDENT(1301, 'SUNDER', '10-DEC-85', '02-AUG-10', 25000)
STUDENT(1400, 'RAMESH', '10-DEC-83', '02-AUG-10', 25000)
```

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6 rows selected.

SQL> cl scr

```
SQL> SELECT
  2 InchargeName, Deref(X.StudentIncharge)
  3 FROM StudentIncharges X;
```

INCHARGENAME

Deref(X.STUDENTINCHARGE)(STUDID, SNAME, DOB, DOA, FEES)

SUBRAMANYAM SHARMA
STUDENT(1101, 'SESHU', '07-OCT-81', '02-AUG-10', 15000)

SUBRAMANYAM SHARMA
STUDENT(1102, 'RAMANA', '07-OCT-80', '02-AUG-10', 15000)

SUBRAMANYAM SHARMA
STUDENT(1104, 'SRIPATH', '07-OCT-83', '02-AUG-10', 15000)

INCHARGENAME

Deref(X.STUDENTINCHARGE)(STUDID, SNAME, DOB, DOA, FEES)

NIRANJAN RAMORI
STUDENT(1100, 'KUMAR', '07-OCT-80', '02-AUG-10', 15000)

NIRANJAN RAMORI
STUDENT(1103, 'RAMU', '07-OCT-82', '02-AUG-10', 15000)

SUBRAMANYAM SHARMA
STUDENT(1200, 'SAMPATH', '10-DEC-85', '02-AUG-10', 25000)

INCHARGENAME

Deref(X.STUDENTINCHARGE)(STUDID, SNAME, DOB, DOA, FEES)

SUBRAMANYAM SHARMA
STUDENT(1202, 'RAJESH', '10-DEC-83', '02-AUG-10', 25000)

NIRANJAN RAMORI
STUDENT(1201, 'SURESH', '10-DEC-80', '02-AUG-10', 25000)

NIRANJAN RAMORI
STUDENT(1300, 'BOBBY', '10-DEC-80', '02-AUG-10', 25000)

INCHARGENAME

Deref(X.STUDENTINCHARGE)(STUDID, SNAME, DOB, DOA, FEES)

NIRANJAN RAMORI

Spool Generated For Class of Oracle By Satish K Yellanki

```
STUDENT(1301, 'SUNDER', '10-DEC-85', '02-AUG-10', 25000)
```

```
NIRANJAN RAMORI
```

```
STUDENT(1400, 'RAMESH', '10-DEC-83', '02-AUG-10', 25000)
```

```
11 rows selected.
```

```
SQL> cl scr
```

```
SQL> SELECT
```

```
 2 InchargeName Incharge,
 3 E1.Stu.StudId StudID,
 4 E1.Stu.SName Sname,
 5 E1.Stu.DOB DOB,
 6 E1.Stu.DOA DOA,
 7 E1.Stu.Fees Fees
 8 FROM (SELECT
 9      InchargeName, Deref(X.StudentIncharge) Stu
10      FROM StudentIncharges X
11      ) E1;
```

INCHARGE	STUDID	SNAME	DOB	DOA	FEES
SUBRAMANYAM SHARMA	1101	SESHU	07-OCT-81	02-AUG-10	15000
SUBRAMANYAM SHARMA	1102	RAMANA	07-OCT-80	02-AUG-10	15000
SUBRAMANYAM SHARMA	1104	SRIPATH	07-OCT-83	02-AUG-10	15000
NIRANJAN RAMORI	1100	KUMAR	07-OCT-80	02-AUG-10	15000
NIRANJAN RAMORI	1103	RAMU	07-OCT-82	02-AUG-10	15000
SUBRAMANYAM SHARMA	1200	SAMPATH	10-DEC-85	02-AUG-10	25000
SUBRAMANYAM SHARMA	1202	RAJESH	10-DEC-83	02-AUG-10	25000
NIRANJAN RAMORI	1201	SURESH	10-DEC-80	02-AUG-10	25000
NIRANJAN RAMORI	1300	BOBBY	10-DEC-80	02-AUG-10	25000
NIRANJAN RAMORI	1301	SUNDER	10-DEC-85	02-AUG-10	25000
NIRANJAN RAMORI	1400	RAMESH	10-DEC-83	02-AUG-10	25000

```
11 rows selected.
```

```
SQL> ED
```

```
Wrote file afiedt.buf
```

```
 1 CREATE OR REPLACE VIEW StudentINCHData
 2 AS
 3 SELECT
 4 InchargeName Incharge,
 5 E1.Stu.StudId StudID,
 6 E1.Stu.SName Sname,
 7 E1.Stu.DOB DOB,
 8 E1.Stu.DOA DOA,
 9 E1.Stu.Fees Fees
10 FROM (SELECT
11      InchargeName, Deref(X.StudentIncharge) Stu
12      FROM StudentIncharges X
13*      ) E1
SQL> /
```

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View created.

```
SQL> DESC StudentINCHData
```

Name	Null?	Type
INCHARGE		VARCHAR2(30)
STUDID		NUMBER(6)
SNAME		VARCHAR2(20)
DOB		DATE
DOA		DATE
FEES		NUMBER(7,2)

```
SQL> SELECT * FROM StudentINCHData;
```

INCHARGE	STUDID	SNAME	DOB	DOA	FEES
SUBRAMANYAM SHARMA	1101	SESHU	07-OCT-81	02-AUG-10	15000
SUBRAMANYAM SHARMA	1102	RAMANA	07-OCT-80	02-AUG-10	15000
SUBRAMANYAM SHARMA	1104	SRIPATH	07-OCT-83	02-AUG-10	15000
NIRANJAN RAMORI	1100	KUMAR	07-OCT-80	02-AUG-10	15000
NIRANJAN RAMORI	1103	RAMU	07-OCT-82	02-AUG-10	15000
SUBRAMANYAM SHARMA	1200	SAMPATH	10-DEC-85	02-AUG-10	25000
SUBRAMANYAM SHARMA	1202	RAJESH	10-DEC-83	02-AUG-10	25000
NIRANJAN RAMORI	1201	SURESH	10-DEC-80	02-AUG-10	25000
NIRANJAN RAMORI	1300	BOBBY	10-DEC-80	02-AUG-10	25000
NIRANJAN RAMORI	1301	SUNDER	10-DEC-85	02-AUG-10	25000
NIRANJAN RAMORI	1400	RAMESH	10-DEC-83	02-AUG-10	25000

11 rows selected.

```
SQL> DELETE
  2 FROM MCAStudent
  3 WHERE SName = 'SESHU';
```

1 row deleted.

```
SQL> SELECT * FROM StudentIncharges;
```

INCHARGENAME	STUDENTINCHARGE
SUBRAMANYAM SHARMA	0000220208ED66DAEA0E954BD 4929E25DCCA43FAEE1C2C7E2A 1E654C848A33AA9EBB45597B
SUBRAMANYAM SHARMA	0000220208F1A6DA06BC66440 49FC333A08475B9E81C2C7E2A 1E654C848A33AA9EBB45597B
SUBRAMANYAM SHARMA	0000220208F410869986DA415 DB48FED91BF3C92EF1C2C7E2A 1E654C848A33AA9EBB45597B
NIRANJAN RAMORI	0000220208B5154F3D38B1444

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```

F811E7EDDA5C0D3D51C2C7E2A
1E654C848A33AA9EBB45597B

NIRANJAN RAMORI      000022020858AE1BD83198452
C897A9119162C452A1C2C7E2A
1E654C848A33AA9EBB45597B

SUBRAMANYAM SHARMA  000022020836EC82D132E24E2
AAF045D0CCEB8EC71DC81AA66

INCHARGENAME        STUDENTINCHARGE
-----
119E46B6BC9B12173D9331B6

SUBRAMANYAM SHARMA  0000220208E8080A7CA76845A
38F8A5DF113D34A6FDC81AA66
119E46B6BC9B12173D9331B6

NIRANJAN RAMORI      000022020860E1ACFB0B734AA
19995A4480B4873A0DC81AA66
119E46B6BC9B12173D9331B6

NIRANJAN RAMORI      0000220208F8348FCEE75A421

INCHARGENAME        STUDENTINCHARGE
-----
FB19191E90630BD8BF6131B14
BE6941D4886AF9685E255BC7

NIRANJAN RAMORI      000022020866E8E45C571A431
0A57D80114C8509E5F6131B14
BE6941D4886AF9685E255BC7

NIRANJAN RAMORI      00002202089904F2627FB64B0
781029CB8EE47DC3655A6BBB2
D4A3443ABC20A3BCDA8E5B39

```

11 rows selected.

SQL> SELECT * FROM StudentINCHData;

INCHARGE	STUDID	SNAME	DOB	DOA	FEES
SUBRAMANYAM SHARMA					
SUBRAMANYAM SHARMA	1102	RAMANA	07-OCT-80	02-AUG-10	15000
SUBRAMANYAM SHARMA	1104	SRIPATH	07-OCT-83	02-AUG-10	15000
NIRANJAN RAMORI	1100	KUMAR	07-OCT-80	02-AUG-10	15000
NIRANJAN RAMORI	1103	RAMU	07-OCT-82	02-AUG-10	15000
SUBRAMANYAM SHARMA	1200	SAMPATH	10-DEC-85	02-AUG-10	25000
SUBRAMANYAM SHARMA	1202	RAJESH	10-DEC-83	02-AUG-10	25000
NIRANJAN RAMORI	1201	SURESH	10-DEC-80	02-AUG-10	25000
NIRANJAN RAMORI	1300	BOBBY	10-DEC-80	02-AUG-10	25000
NIRANJAN RAMORI	1301	SUNDER	10-DEC-85	02-AUG-10	25000
NIRANJAN RAMORI	1400	RAMESH	10-DEC-83	02-AUG-10	25000

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11 rows selected.

```
SQL> DELETE FROM StudentINCHData
  2  WHERE Stuid IS NULL AND INCHARGE = 'SUBRAMANYAM SHARMA';
WHERE Stuid IS NULL AND INCHARGE = 'SUBRAMANYAM SHARMA'
  *
ERROR at line 2:
ORA-00904: "STUID": invalid identifier
```

```
SQL> ED
Wrote file afiedt.buf
```

```
  1  DELETE FROM (
  2      SELECT
  3          InchargeName,
  4      Deref(X.StudentIncharge) Stu
  5          FROM StudentIncharges X
  6      ) E1
  7  WHERE
  8  E1.Stu.StudId StudID IS NULL AND
  9* InchargeName = 'SUBRAMANYAM SHARMA'
SQL> /
E1.Stu.StudId StudID IS NULL AND
  *
ERROR at line 8:
ORA-00920: invalid relational operator
```

```
SQL> ED
Wrote file afiedt.buf
```

```
  1  DELETE FROM (
  2      SELECT
  3          InchargeName,
  4      Deref(X.StudentIncharge) Stu
  5          FROM StudentIncharges X
  6      ) E1
  7  WHERE
  8  E1.Stu.StudId IS NULL AND
  9* InchargeName = 'SUBRAMANYAM SHARMA'
SQL> /
```

1 row deleted.

```
SQL> SELECT * FROM StudentINCHData;
```

INCHARGE	STUDID	SNAME	DOB	DOA	FEES
SUBRAMANYAM SHARMA	1102	RAMANA	07-OCT-80	02-AUG-10	15000
SUBRAMANYAM SHARMA	1104	SRIPATH	07-OCT-83	02-AUG-10	15000
NIRANJAN RAMORI	1100	KUMAR	07-OCT-80	02-AUG-10	15000
NIRANJAN RAMORI	1103	RAMU	07-OCT-82	02-AUG-10	15000
SUBRAMANYAM SHARMA	1200	SAMPATH	10-DEC-85	02-AUG-10	25000
SUBRAMANYAM SHARMA	1202	RAJESH	10-DEC-83	02-AUG-10	25000
NIRANJAN RAMORI	1201	SURESH	10-DEC-80	02-AUG-10	25000

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```
NIRANJAN RAMORI          1300 BOBBY          10-DEC-80 02-AUG-10  25000
NIRANJAN RAMORI          1301 SUNDER         10-DEC-85 02-AUG-10  25000
NIRANJAN RAMORI          1400 RAMESH         10-DEC-83 02-AUG-10  25000
```

10 rows selected.

```
SQL> cl scr
```

```
SQL> Create Table Students
```

```
 2 (
 3   Studid          NUMBER(6)
 4   CONSTRAINT StudIDPK PRIMARY KEY,
 5   SName           VARCHAR2(30),
 6   Street          VARCHAR2(40),
 7   CityName        VARCHAR2(25),
 8   StateName       VARCHAR2(40),
 9   Pincode Number(6)
10 );
```

Table created.

```
SQL> BEGIN
```

```
 2 INSERT INTO Students
 3 VALUES(1200, 'SAMPATH', 'SHIV BAGH', 'HYDERABAD', 'ANDHRA PRADESH',
506001);
 4 INSERT INTO Students
 5 VALUES(1201, 'SRINIVAS', 'SHYAM NAGAR', 'SECUNDERABAD', 'ANDHRA PRADESH',
506002);
 6 INSERT INTO Students
 7 VALUES(1202, 'SHIVAJI', 'ANDAL NAGAR', 'CHENNAI', 'TAMIL NADU', 606060);
 8 COMMIT;
 9 END;
10 /
```

PL/SQL procedure successfully completed.

```
SQL> COLUMN STUDID FORMAT 9999
```

```
SQL> COLUMN SNAME FORMAT A9
```

```
SQL> COLUMN STREET FORMAT A12
```

```
SQL> COLUMN CITYNAME FORMAT A13
```

```
SQL> COLUMN STATENAME FORMAT A15
```

```
SQL> COLUMN PINCODE FORMAT 999999
```

```
SQL> SELECT *
```

```
 2 FROM Students;
```

STUDID	SNAME	STREET	CITYNAME	STATENAME	PINCODE
1200	SAMPATH	SHIV BAGH	HYDERABAD	ANDHRA PRADESH	506001
1201	SRINIVAS	SHYAM NAGAR	SECUNDERABAD	ANDHRA PRADESH	506002
1202	SHIVAJI	ANDAL NAGAR	CHENNAI	TAMIL NADU	606060

```
SQL> CREATE OR REPLACE TYPE MyAddress
```

```
 2 AS OBJECT
```

```
 3 (
```

```
 4   Street          VARCHAR2(40),
```

```
 5   CityName        VARCHAR2(25),
```

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```
6 StateName          VARCHAR2(40),
7 Pincode             NUMBER(6)
8 );
9 /
```

Type created.

```
SQL> CREATE OR REPLACE TYPE MyStudent
2 AS OBJECT
3 (
4 SName VARCHAR2(30),
5 Saddress Myaddress
6 );
7 /
```

Type created.

```
SQL> SELECT
2 StudID,
3 SName,
4 Street, CityName , StateName, Pincode
5 FROM Students;
```

STUDID	SNAME	STREET	CITYNAME	STATENAME	PINCODE
1200	SAMPATH	SHIV BAGH	HYDERABAD	ANDHRA PRADESH	506001
1201	SRINIVAS	SHYAM NAGAR	SECUNDERABAD	ANDHRA PRADESH	506002
1202	SHIVAJI	ANDAL NAGAR	CHENNAI	TAMIL NADU	606060

```
SQL> SELECT
2 StudID,
3 MyStudent(SName,
4 Myaddress(Street, CityName , StateName, Pincode))
5 FROM Students;
```

STUDID

```
-----
MYSTUDENT(SNAME,MYADDRESS(STREET,CITYNAME,STATENAME,PINCODE))(SNAME, SADDRESS(ST
-----
1200
MYSTUDENT('SAMPATH', MYADDRESS('SHIV BAGH', 'HYDERABAD', 'ANDHRA PRADESH', 50600
1))
```

```
1201
MYSTUDENT('SRINIVAS', MYADDRESS('SHYAM NAGAR', 'SECUNDERABAD', 'ANDHRA PRADESH',
506002))
```

1202

STUDID

```
-----
MYSTUDENT(SNAME,MYADDRESS(STREET,CITYNAME,STATENAME,PINCODE))(SNAME, SADDRESS(ST
-----
MYSTUDENT('SHIVAJI', MYADDRESS('ANDAL NAGAR', 'CHENNAI', 'TAMIL NADU', 606060))
```

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```
SQL> CREATE OR REPLACE VIEW
  2 StudentOV(StudID, StudDEF)
  3 AS
  4 SELECT
  5 StudID,
  6 MyStudent(SName,
  7 Myaddress(Street, CityName , StateName, Pincode))
  8 FROM Students;
```

View created.

```
SQL> DESC StudentOV
```

Name	Null?	Type
STUDID	NOT NULL	NUMBER(6)
STUDEF		MYSTUDENT

```
SQL> SET DESCRIBE DEPTH 2
```

```
SQL> DESC StudentOV
```

Name	Null?	Type
STUDID	NOT NULL	NUMBER(6)
STUDEF		MYSTUDENT
SNAME		VARCHAR2(30)
ADDRESS		MYADDRESS

```
SQL> SET DESCRIBE DEPTH 3
```

```
SQL> DESC StudentOV
```

Name	Null?	Type
STUDID	NOT NULL	NUMBER(6)
STUDEF		MYSTUDENT
SNAME		VARCHAR2(30)
ADDRESS		MYADDRESS
STREET		VARCHAR2(40)
CITYNAME		VARCHAR2(25)
STATENAME		VARCHAR2(40)
PINCODE		NUMBER(6)

```
SQL> SELECT * FROM StudentOV;
```

```
STUDID
```

```
-----
```

```
STUDEF(SNAME, SADDRESS(STREET, CITYNAME, STATENAME, PINCODE))
```

```
-----
1200
MYSTUDENT('SAMPATH', MYADDRESS('SHIV BAGH', 'HYDERABAD', 'ANDHRA PRADESH', 50600
1))
```

```
1201
MYSTUDENT('SRINIVAS', MYADDRESS('SHYAM NAGAR', 'SECUNDERABAD', 'ANDHRA PRADESH',
506002))
```

```
1202
```

```
STUDID
```

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```
-----  
STUDDEF(SNAME, SADDRESS(STREET, CITYNAME, STATENAME, PINCODE))  
-----
```

```
MYSTUDENT('SHIVAJI', MYADDRESS('ANDAL NAGAR', 'CHENNAI', 'TAMIL NADU', 606060))
```

```
SQL> SELECT  
  2 StudID,  
  3 E1.StudDEF.Sname Sname,  
  4 E1.StudDEF.SAddress.Street Street,  
  5 E1.StudDEF.SAddress.CityName CityName,  
  6 E1.StudDEF.SAddress.StateName StateName,  
  7 E1.StudDEF.SAddress.PinCode PinCode  
  8 FROM (SELECT *  
  9       FROM StudentOV) E1;
```

STUDID	SNAME	STREET	CITYNAME	STATENAME	PINCODE
1200	SAMPATH	SHIV BAGH	HYDERABAD	ANDHRA PRADESH	506001
1201	SRINIVAS	SHYAM NAGAR	SECUNDERABAD	ANDHRA PRADESH	506002
1202	SHIVAJI	ANDAL NAGAR	CHENNAI	TAMIL NADU	606060

```
SQL> SPOOL OFF
```

```
SQL> cl scr
```

```
SQL> SELECT * FROM TAB;
```

TNAME	TABTYPE	CLUSTERID
STUDENTS	TABLE	
STUDENTOV	VIEW	

```
SQL> SELECT * FROM STUDENTS;
```

STUDID	SNAME	STREET	CITYNAME	STATENAME	PINCODE
1200	SAMPATH	SHIV BAGH	HYDERABAD	ANDHRA PRADESH	506001
1201	SRINIVAS	SHYAM NAGAR	SECUNDERABAD	ANDHRA PRADESH	506002
1202	SHIVAJI	ANDAL NAGAR	CHENNAI	TAMIL NADU	606060

```
SQL> DESC STUDENTOV
```

Name	Null?	Type
STUDID	NOT NULL	NUMBER(6)
STUDDEF		MYSTUDENT

```
SQL> SET DESCRIBE DEPTH 2
```

```
SQL> DESC STUDENTOV
```

Name	Null?	Type
STUDID	NOT NULL	NUMBER(6)
STUDDEF		MYSTUDENT
SNAME		VARCHAR2(30)
SADDRESS		MYADDRESS

```
SQL> SET DESCRIBE DEPTH 3
```

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```
SQL> DESC STUDENTOV
```

Name	Null?	Type
STUDID	NOT NULL	NUMBER(6)
STUDEF		MYSTUDENT
SNAME		VARCHAR2(30)
SADDRESS		MYADDRESS
STREET		VARCHAR2(40)
CITYNAME		VARCHAR2(25)
STATENAME		VARCHAR2(40)
PINCODE		NUMBER(6)

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

```
STUDID
```

```
-----
```

```
STUDEF(SNAME, SADDRESS(STREET, CITYNAME, STATENAME, PINCODE))
```

```
-----
```

```
  1200
```

```
MYSTUDENT('SAMPATH', MYADDRESS('SHIV BAGH', 'HYDERABAD', 'ANDHRA PRADESH', 506001))
```

```
  1201
```

```
MYSTUDENT('SRINIVAS', MYADDRESS('SHYAM NAGAR', 'SECUNDERABAD', 'ANDHRA PRADESH', 506002))
```

```
  1202
```

```
STUDID
```

```
-----
```

```
STUDEF(SNAME, SADDRESS(STREET, CITYNAME, STATENAME, PINCODE))
```

```
-----
```

```
MYSTUDENT('SHIVAJI', MYADDRESS('ANDAL NAGAR', 'CHENNAI', 'TAMIL NADU', 606060))
```

```
SQL> SELECT
```

```
  2 StudID,  
  3 E1.StuDEF.Sname Sname,  
  4 E1.StuDEF.SAddress.Street Street,  
  5 E1.StuDEF.SAddress.CityName CityName,  
  6 E1.StuDEF.SAddress.StateName StateName,  
  7 E1.StuDEF.SAddress.PinCode PinCode  
  8 FROM (SELECT *  
  9      FROM StudentOV) E1;
```

STUDID	SNAME	STREET	CITYNAME	STATENAME	PINCODE
1200	SAMPATH	SHIV BAGH	HYDERABAD	ANDHRA PRADESH	506001
1201	SRINIVAS	SHYAM NAGAR	SECUNDERABAD	ANDHRA PRADESH	506002
1202	SHIVAJI	ANDAL NAGAR	CHENNAI	TAMIL NADU	606060

```
SQL> INSERT INTO StudentOV
```

```
  2 VALUES(1203,  
  3      MYStudent('RAMESH',  
  4      MyAddress(
```

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```
5          'SHYAMA NAGAR',
6          'SECUNDERABAD',
7          'ANDHRA PRADESH',
8          506001
9        )
10      )
11 );
```

1 row created.

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

STUDID	SNAME	STREET	CITYNAME	STATENAME	PINCODE
1200	SAMPATH	SHIV BAGH	HYDERABAD	ANDHRA PRADESH	506001
1201	SRINIVAS	SHYAM NAGAR	SECUNDERABAD	ANDHRA PRADESH	506002
1202	SHIVAJI	ANDAL NAGAR	CHENNAI	TAMIL NADU	606060
1203	RAMESH	SHYAMA NAGAR	SECUNDERABAD	ANDHRA PRADESH	506001

```
SQL> INSERT INTO StudentOV
2 VALUES(1203,
3     MYStudent('RAMESH',
4     MyAddress(
5         'SH
6         'SE
7         'AN
8         506
9     )
10 )
11 )
12
```

```
SQL> cl scr
```

```
SQL> DELETE StudentOV
2 WHERE StudId = 1200;
```

1 row deleted.

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

STUDID	SNAME	STREET	CITYNAME	STATENAME	PINCODE
1201	SRINIVAS	SHYAM NAGAR	SECUNDERABAD	ANDHRA PRADESH	506002
1202	SHIVAJI	ANDAL NAGAR	CHENNAI	TAMIL NADU	606060
1203	RAMESH	SHYAMA NAGAR	SECUNDERABAD	ANDHRA PRADESH	506001

```
SQL> DELETE (SELECT *
2 FROM StudentOV) E1
3 WHERE E1.StudDef.Sname = 'SHIVAJI';
```

1 row deleted.

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

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STUDID	SNAME	STREET	CITYNAME	STATENAME	PINCODE
1201	SRINIVAS	SHYAM NAGAR	SECUNDERABAD	ANDHRA PRADESH	506002
1203	RAMESH	SHYAMA NAGAR	SECUNDERABAD	ANDHRA PRADESH	506001

```
SQL> UPDATE (SELECT *
2 FROM StudentOV) E1
3 SET E1.StudDef.Sname = 'SRINIVAS RAJU'
4 WHERE E1.StudID = 1201;
```

1 row updated.

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

STUDID	SNAME	STREET	CITYNAME	STATENAME	PINCODE
1201	SRINIVAS RAJU	SHYAM NAGAR	SECUNDERABAD	ANDHRA PRADESH	506002
1203	RAMESH	SHYAMA NAGAR	SECUNDERABAD	ANDHRA PRADESH	506001

```
SQL> cl scr
```

```
SQL> ROLLBACK;
```

Rollback complete.

```
SQL> cl scr
```

```
SQL> BEGIN
2 DELETE FROM STUDENTS;
3 INSERT INTO Students
4 VALUES(1200, 'SAMPATH', 'SHIV BAGH', 'HYDERABAD', 'ANDHRA PRADESH',
506001);
5 INSERT INTO Students
6 VALUES(1201, 'SRINIVAS', 'SHYAM NAGAR', 'SECUNDERABAD', 'ANDHRA PRADESH',
506002);
7 INSERT INTO Students
8 VALUES(1202, 'SHIVAJI', 'ANDAL NAGAR', 'CHENNAI', 'TAMIL NADU', 606060);
9 COMMIT;
10 END;
11 /
```

PL/SQL procedure successfully completed.

```
SQL> cl scr
```

```
SQL> SELECT * FROM STUDENTS;
```

STUDID	SNAME	STREET	CITYNAME	STATENAME	PINCODE
1200	SAMPATH	SHIV BAGH	HYDERABAD	ANDHRA PRADESH	506001
1201	SRINIVAS	SHYAM NAGAR	SECUNDERABAD	ANDHRA PRADESH	506002
1202	SHIVAJI	ANDAL NAGAR	CHENNAI	TAMIL NADU	606060

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```
SQL> CREATE TABLE StudentBooks
 2  (
 3  LibTranNO    NUMBER(6),
 4  StudID       NUMBER(6),
 5  BookTitle    VARCHAR2(50),
 6  LendingDate DATE,
 7  CONSTRAINT LibtreamNoPK
 8  PRIMARY KEY(LibTranNO, Studid),
 9  CONSTRAINT StudentBooksFK
10  FOREIGN KEY(Studid)
11  REFERENCES Students(StudID)
12  );
```

Table created.

```
SQL> BEGIN
 2  INSERT INTO StudentBooks
 3  VALUES(2000, 1200, 'THERMO DYNAMICS', SYSDATE);
 4  INSERT INTO StudentBooks
 5  VALUES(2001, 1200, 'FLUID MECHANICS', SYSDATE);
 6  INSERT INTO StudentBooks
 7  VALUES(2002, 1200, 'ATOMIC PHYSICS', SYSDATE);
 8  INSERT INTO StudentBooks
 9  VALUES(2003, 1201, 'STRUCTURAL DYNAMICS', SYSDATE);
10  INSERT INTO StudentBooks
11  VALUES(2004, 1201, 'AVIATION THEORY', SYSDATE);
12  INSERT INTO StudentBooks
13  VALUES(2005, 1202, 'PROPULSION THEORY', SYSDATE);
14  COMMIT;
15  END;
16  /
```

PL/SQL procedure successfully completed.

```
SQL> cl scr
```

```
SQL> SELECT * FROM STUDENTS;
```

STUDID	SNAME	STREET	CITYNAME	STATENAME	PINCODE
1200	SAMPATH	SHIV BAGH	HYDERABAD	ANDHRA PRADESH	506001
1201	SRINIVAS	SHYAM NAGAR	SECUNDERABAD	ANDHRA PRADESH	506002
1202	SHIVAJI	ANDAL NAGAR	CHENNAI	TAMIL NADU	606060

```
SQL> BEGIN
 2  INSERT INTO StudentBooks
 3  VALUES(2000, 1200, 'THERMO DYNAMICS', SYSDATE);
 4  INSERT INTO StudentBooks
 5  VALUES(2001, 1200, 'FLUID MECHANICS', SYSDATE);
 6  INSERT INTO StudentBooks
 7  VALUES(2002, 1200, 'ATOMIC PHYSICS', SYSDATE);
 8  INSERT INTO StudentBooks
 9  VALUES(2003, 1201, 'STRUCTURAL DYNAMICS', SYSDATE);
10  INSERT INTO StudentBooks
11  VALUES(2004, 1201, 'AVIATION THEORY', SYSDATE);
```

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```
12 INSERT INTO StudentBooks
13 VALUES(2005, 1202, 'PROPULSION THEORY', SYSDATE);
14 COMMIT;
15 END
16
17 .
SQL> cl scr
```

```
SQL> SELECT * FROM Students;
```

STUDID	SNAME	STREET	CITYNAME	STATENAME	PINCODE
1200	SAMPATH	SHIV BAGH	HYDERABAD	ANDHRA PRADESH	506001
1201	SRINIVAS	SHYAM NAGAR	SECUNDERABAD	ANDHRA PRADESH	506002
1202	SHIVAJI	ANDAL NAGAR	CHENNAI	TAMIL NADU	606060

```
SQL> COLUMN LIBTRANNO FORMAT 9999
```

```
SQL> COLUMN STUDID FORMAT 9999
```

```
SQL> COLUMN BOOKTITLE FORMAT A20
```

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

LIBTRANNO	STUDID	BOOKTITLE	LENDINGDA
2000	1200	THERMO DYNAMICS	03-AUG-10
2001	1200	FLUID MECHANICS	03-AUG-10
2002	1200	ATOMIC PHYSICS	03-AUG-10
2003	1201	STRUCTURAL DYNAMICS	03-AUG-10
2004	1201	AVIATION THEORY	03-AUG-10
2005	1202	PROPULSION THEORY	03-AUG-10

6 rows selected.

```
SQL> SELECT Sname, BookTitle, LendingDate
2 FROM Students S, StudentBooks SB
3 WHERE S.StudID = SB.StudID;
```

SNAME	BOOKTITLE	LENDINGDA
SAMPATH	THERMO DYNAMICS	03-AUG-10
SAMPATH	FLUID MECHANICS	03-AUG-10
SAMPATH	ATOMIC PHYSICS	03-AUG-10
SRINIVAS	STRUCTURAL DYNAMICS	03-AUG-10
SRINIVAS	AVIATION THEORY	03-AUG-10
SHIVAJI	PROPULSION THEORY	03-AUG-10

6 rows selected.

```
SQL> CREATE OR REPLACE TYPE StudentType
2 AS OBJECT
3 (
4 Studid NUMBER(6),
5 Sname VARCHAR2(30),
6 Street Varchar2(40),
7 Cityname VARCHAR2(25),
8 Statename VARCHAR2(40),
```

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```
9   Pincode NUMBER(6)
10  );
11  /
```

Type created.

```
SQL> CREATE OR REPLACE VIEW STUDENTOV
2   OF StudentType
3   WITH OBJECT IDENTIFIER(StudID)
4   AS
5   SELECT StudID, Sname,
6   Street, CityName,
7   StateName, Pincode
8   FROM Students;
```

View created.

```
SQL> DESC STUDENTOV
```

Name	Null?	Type
STUDID		NUMBER(6)
SNAME		VARCHAR2(30)
STREET		VARCHAR2(40)
CITYNAME		VARCHAR2(25)
STATENAME		VARCHAR2(40)
PINCODE		NUMBER(6)

```
SQL> SELECT * FROM STUDENTOV;
```

STUDID	SNAME	STREET	CITYNAME	STATENAME	PINCODE
1200	SAMPATH	SHIV BAGH	HYDERABAD	ANDHRA PRADESH	506001
1201	SRINIVAS	SHYAM NAGAR	SECUNDERABAD	ANDHRA PRADESH	506002
1202	SHIVAJI	ANDAL NAGAR	CHENNAI	TAMIL NADU	606060

```
SQL> COLUMN OID FORMAT A25
```

```
SQL> SELECT SNAME, REF(A) OID
```

```
2 FROM STUDENTOV;
```

```
SELECT SNAME, REF(A) OID
```

```
*
```

```
ERROR at line 1:
```

```
ORA-00904: "A": invalid identifier
```

```
SQL> ED
```

```
Wrote file afiedt.buf
```

```
1 SELECT SNAME, REF(A) OID
```

```
2* FROM STUDENTOV A
```

```
SQL> /
```

SNAME	OID
SAMPATH	00004A038A0046A4805E25E10 5476690852B320CDCBAE00000 0014260100010001002900000

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```
00000090606002A00078401FE
0000000A02C20D000000000000
00000000000000000000000000
0000
```

```
SRINIVAS 00004A038A0046A4805E25E10
5476690852B320CDCBAE00000
0014260100010001002900000
```

```
SNAME      OID
-----
00000090606002A00078401FE
0000000B03C20D020000000000
00000000000000000000000000
0000
```

```
SHIVAJI 00004A038A0046A4805E25E10
5476690852B320CDCBAE00000
0014260100010001002900000
00000090606002A00078401FE
0000000B03C20D030000000000
00000000000000000000000000
```

```
SNAME      OID
-----
0000
```

SQL> cl scr

```
SQL> SELECT
  2  StudID,
  3  LibTranNo, BookTitle, LendingDate
  4  FROM StudentBooks;
```

STUDID	LIBTRANNO	BOOKTITLE	LENDINGDA
1200	2000	THERMO DYNAMICS	03-AUG-10
1200	2001	FLUID MECHANICS	03-AUG-10
1200	2002	ATOMIC PHYSICS	03-AUG-10
1201	2003	STRUCTURAL DYNAMICS	03-AUG-10
1201	2004	AVIATION THEORY	03-AUG-10
1202	2005	PROPULSION THEORY	03-AUG-10

6 rows selected.

```
SQL> CREATE VIEW StudentBooksOV
  2  AS
  3  SELECT
  4  MAKE_REF(StudentOV, StudID) StudID,
  5  LibTranNo, BookTitle, LendingDate
  6  FROM StudentBooks;
```

View created.

```
SQL> DESC StudentBooksOV
```

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Name	Null?	Type
STUDID		REF OF STUDENTTYPE
STUDID		NUMBER(6)
SNAME		VARCHAR2(30)
STREET		VARCHAR2(40)
CITYNAME		VARCHAR2(25)
STATENAME		VARCHAR2(40)
PINCODE		NUMBER(6)
LIBTRANNO	NOT NULL	NUMBER(6)
BOOKTITLE		VARCHAR2(50)
LENDINGDATE		DATE

```
SQL> COLUMN LibTranNo FORMAT 9999
SQL> COLUMN StudID FORMAT A20
SQL> COLUMN BookTitle FORMAT A20
SQL> SELECT *
      2 FROM StudentBooksOV;
```

STUDID	LIBTRANNO	BOOKTITLE	LENDINGDA
00004A038A0046A4805E 25E105476690852B320C DCBAE000000014260100 01000100290000000000 090606002A00078401FE 0000000A02C20D000000 00000000000000000000 0000000000000000	2000	THERMO DYNAMICS	03-AUG-10

00004A038A0046A4805E 25E105476690852B320C	2001	FLUID MECHANICS	03-AUG-10
--	------	-----------------	-----------

STUDID	LIBTRANNO	BOOKTITLE	LENDINGDA
DCBAE000000014260100 01000100290000000000 090606002A00078401FE 0000000A02C20D000000 00000000000000000000 0000000000000000			

00004A038A0046A4805E 25E105476690852B320C DCBAE000000014260100 01000100290000000000	2002	ATOMIC PHYSICS	03-AUG-10
--	------	----------------	-----------

STUDID	LIBTRANNO	BOOKTITLE	LENDINGDA
090606002A00078401FE 0000000A02C20D000000 00000000000000000000 0000000000000000			

00004A038A0046A4805E 25E105476690852B320C	2003	STRUCTURAL DYNAMICS	03-AUG-10
--	------	---------------------	-----------

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```
DCBAE000000014260100
010001002900000000000
090606002A00078401FE
0000000B03C20D020000
```

```
STUDID          LIBTRANNO BOOKTITLE          LENDINGDA
-----
000000000000000000000
000000000000000000000

00004A038A0046A4805E      2004 AVIATION THEORY      03-AUG-10
25E105476690852B320C
DCBAE000000014260100
010001002900000000000
090606002A00078401FE
0000000B03C20D020000
000000000000000000000
000000000000000000000
```

```
STUDID          LIBTRANNO BOOKTITLE          LENDINGDA
-----
00004A038A0046A4805E      2005 PROPULSION THEORY    03-AUG-10
25E105476690852B320C
DCBAE000000014260100
010001002900000000000
090606002A00078401FE
0000000B03C20D030000
000000000000000000000
000000000000000000000
```

6 rows selected.

```
SQL> SELECT Deref(SB.StudID)
2 FROM StudentBooksOV SB
3 WHERE BookTitle = 'THERMO DYNAMICS';
```

```
Deref(SB.STUDID)(STUDID, SNAME, STREET, CITYNAME, STATENAME, PINCODE)
-----
STUDENTTYPE(1200, 'SAMPATH', 'SHIV BAGH', 'HYDERABAD', 'ANDHRA PRADESH', 506001)
```

```
SQL> SELECT
2 LibTranNO,
3 BookTitle,
4 LendingDate,
5 Deref(SB.StudID) StudentData
6 FROM StudentBooksOV SB
7 WHERE BookTitle = 'THERMO DYNAMICS';
```

```
LIBTRANNO BOOKTITLE          LENDINGDA
-----
STUDENTDATA(STUDID, SNAME, STREET, CITYNAME, STATENAME, PINCODE)
-----
2000 THERMO DYNAMICS      03-AUG-10
STUDENTTYPE(1200, 'SAMPATH', 'SHIV BAGH', 'HYDERABAD', 'ANDHRA PRADESH', 506001)
```

Spool Generated For Class of Oracle By Satish K Yellanki

SQL> cl scr

```
SQL> SELECT
  2  StudentBooksData.StudentData.StudID StudID,
  3  StudentBooksData.StudentData.Sname Sname,
  4  LibTranNO,
  5  BookTitle,
  6  LendingDate
  7 FROM (SELECT
  8  LibTranNO,
  9  BookTitle,
 10  LendingDate,
 11  Deref(SB.StudID) StudentData
 12 FROM StudentBooksOV SB
 13 ) StudentBooksData;
```

STUDID	SNAME	LIBTRANNO	BOOKTITLE	LENDINGDA
#####	SAMPATH	2002	ATOMIC PHYSICS	03-AUG-10
#####	SAMPATH	2001	FLUID MECHANICS	03-AUG-10
#####	SAMPATH	2000	THERMO DYNAMICS	03-AUG-10
#####	SRINIVAS	2004	AVIATION THEORY	03-AUG-10
#####	SRINIVAS	2003	STRUCTURAL DYNAMICS	03-AUG-10
#####	SHIVAJI	2005	PROPULSION THEORY	03-AUG-10

6 rows selected.

```
SQL> COLUMN STUDID FORMAT 9999
SQL> /
```

STUDID	SNAME	LIBTRANNO	BOOKTITLE	LENDINGDA
1200	SAMPATH	2002	ATOMIC PHYSICS	03-AUG-10
1200	SAMPATH	2001	FLUID MECHANICS	03-AUG-10
1200	SAMPATH	2000	THERMO DYNAMICS	03-AUG-10
1201	SRINIVAS	2004	AVIATION THEORY	03-AUG-10
1201	SRINIVAS	2003	STRUCTURAL DYNAMICS	03-AUG-10
1202	SHIVAJI	2005	PROPULSION THEORY	03-AUG-10

6 rows selected.

```
SQL> SPOOL OFF
```