#### **DBMS Practical-2**

Name: Gaurav Kedia RollNo: 39 Branch: AIML Batch: E2

#### **Questions:**

- 1) All joins on course and participant schema.
- 2) All joins on participant-1 and participant-2 schema
- 3) all set operation on participant-1 and participant-2 schema
- 4) Foreign key deletion rule testing (NO ACTION, ON delete set null, and ON delete cascade) with output.

SQL> SELECT \* FROM PARTICIPANT;

PID	PNAME	G	CID
1001	Albert DCosta	M	101
1002	Foster Silva	M	102
1003	Maria Anderson	F	102
1004	Pamela Smith	F	101
1005	Indiana Jones	M	
1006	Gaurav Kedia	M	102
	CHAITREYA BHELKAR	M	102

7 rows selected.

SQL> SELECT \* FROM COURSE;

CID	CNAME	CREDIT
101	Database Management Systems	5
102	Object-Oriented Systems	4
103	MATHEMATICS	5
104	MICROCONTROLLER	4
105	MACHINE LEARNING	3
106	DSA	4

6 rows selected.

SQL> SELECT \* FROM COURSE, PARTICIPANT
2 WHERE COURSE.CID=PARTICIPANT.CID;

	CID CNAME			CREDIT	PID
PNAME		 G	CID		
Albert	101 Database Manager DCosta	ment Syst M	ems 101	5	1001
Pamela	101 Database Manager Smith	ment Syst F	ems 101	5	1004
Gaurav	102 Object-Oriented Kedia	Systems M	102	4	1006
	CID CNAME			CREDIT	PID

PNAME	G CII	)		
102 Object-Oriented	l Systems M 102		1007	
102 Object-Oriented Foster Silva	l Systems M 102	4	1002	
102 Object-Oriented Maria Anderson	_	4	1003	
6 rows selected.				
SQL> SET LINESIZE 250; SQL> SELECT * FROM COURSE, 2 WHERE COURSE.CID=PART				
CID CNAME G CID		CREDIT	PID	PNAME
101 Database Manage		5	1001	Albert
DCosta M 101 Database Manage Smith F	ement Systems	5	1004	Pamela
102 Object-Oriented	l Systems	4	1006	Gaurav
Kedia M 102 Object-Oriented BHELKAR M 1	l Systems	4	1007	CHAITREYA
102 Object-Oriented	l Systems	4	1002	Foster
102 Object-Oriented Anderson F 6 rows selected.	l Systems	4	1003	Maria
SQL> SELECT * FROM COURSE	CROSS JOIN E	PARTICIPANT;		
CID CNAME G CID			PID	PNAME
101 Database Manage			1001	Albert
DCosta M 101 Database Manage	101			Foster
Silva M 101 Database Manage	102			Maria
Anderson F 101 Database Manage	102		1004	Pamela
Smith F 101 Database Manage	101		1005	Indiana
Jones M 101 Database Manage	ement Systems	5	1006	Gaurav
Kedia M 101 Database Manage BHELKAR M 1	102 ement Systems .02	5		CHAITREYA

102 Object-Oriented Systems	102 Object-C	Oriented Systems M 101	4	1001	Albert
102 Object-Oriented Systems	102 Object-C	Priented Systems	4	1002	Foster
Martial			4	1003	Maria
Smith	Anderson	F 102	4	1004	Domolo
C	_	_	4	1004	ramela
102 Object-Oriented Systems			CREDIT	PID	PNAME
102 Object-Oriented Systems	G CID				
Jones			4	1005	T - 1'
Mathematics	_	_	4	1005	Indlana
Mart		_	4	1006	Gaurav
103 MATHEMATICS   5   1001 Albert	RCala		4	1007	CHAITREYA
DCosta			5	1001	Alhert
Silva				1001	AIDELC
103 MATHEMATICS   102   103 MATHEMATICS   5   1004 Pamela   103 MATHEMATICS   5   1004 Pamela   103 MATHEMATICS   5   1005 Indiana   103 MATHEMATICS   5   1005 Indiana   103 MATHEMATICS   5   1006 Gaurav   103 MATHEMATICS   5   1007 CHAITREYA   103 MATHEMATICS   5   1007 CHAITREYA   104 MICROCONTROLLER   4   1001 Albert   104 MICROCONTROLLER   4   1001 Albert   104 MICROCONTROLLER   4   1002 Foster   104 MICROCONTROLLER   4   1002 Foster   104 MICROCONTROLLER   4   1003 MATIA   1004 MICROCONTROLLER   4   1003 MATIA   1004 MICROCONTROLLER   4   1003 MATIA   1004 MICROCONTROLLER   4   1004 Pamela   104 MICROCONTROLLER   4   1004 Pamela   104 MICROCONTROLLER   4   1005 Indiana   105 MATIA			5	1002	Foster
MATHEMATICS   TOMES   TOMES	103 MATHEMAT	TICS	5	1003	Maria
Smith			5	1004	Pamela
M	Smith	F 101			
Note			5	1005	Indiana
103 MATHEMATICS   5   1007 CHAITREYA	103 MATHEMAT		5	1006	Gaurav
BHELKAR	Neura		5	1007	CHAITREYA
CID CNAME   CREDIT   PID PNAME	BHELKAR M	102	4		
G CID			4	1001	Albert
G CID	CID CNAME		CDEDIM	חדת	DMAME
Silva       M 102         104 MICROCONTROLLER       4 1003 Maria         Anderson       F 102         104 MICROCONTROLLER       4 1005 Indiana         Jones       M       102         Kedia       M 102       4 1007 CHAITREYA         BHELKAR       M 102       3 1001 Albert         DCosta       M 101       3 1002 Foster         Silva       M 102       3 1003 Maria         Silva       M 102       3 1003 Maria			CREDIT	PID	PNAME
Silva       M 102         104 MICROCONTROLLER       4 1003 Maria         Anderson       F 102         104 MICROCONTROLLER       4 1005 Indiana         Jones       M       102         Kedia       M 102       4 1007 CHAITREYA         BHELKAR       M 102       3 1001 Albert         DCosta       M 101       3 1002 Foster         Silva       M 102       3 1003 Maria         Silva       M 102       3 1003 Maria					
104 MICROCONTROLLER	104 MICROCON	UTROLLER	4	1002	Foster
Anderson F 102  104 MICROCONTROLLER Smith F 101  104 MICROCONTROLLER 4 1005 Indiana  Jones M  104 MICROCONTROLLER 4 1006 Gaurav  Kedia M 102  104 MICROCONTROLLER 4 1007 CHAITREYA  BHELKAR M 102  105 MACHINE LEARNING 3 1001 Albert  DCosta M 101  105 MACHINE LEARNING 3 1002 Foster  Silva M 102  105 MACHINE LEARNING 3 1003 Maria			Δ	1003	Maria
Smith       F       101         104 MICROCONTROLLER       4       1005 Indiana         Jones       M       104 MICROCONTROLLER       4       1006 Gaurav         Kedia       M       102       4       1007 CHAITREYA         BHELKAR       M       102       3       1001 Albert         DCosta       M       101       3       1002 Foster         Silva       M       102       3       1003 Maria			1	1003	naria
104 MICROCONTROLLER			4	1004	Pamela
MICROCONTROLLER			4	1005	Indiana
Kedia       M       102         104 MICROCONTROLLER       4       1007 CHAITREYA         BHELKAR       M       102         105 MACHINE LEARNING       3       1001 Albert         DCosta       M       101         105 MACHINE LEARNING       3       1002 Foster         Silva       M       102         105 MACHINE LEARNING       3       1003 Maria			4	1006	Cauran
BHELKAR       M       102         105       MACHINE       LEARNING       3       1001       Albert         DCosta       M       101       101       1002       Foster         Silva       M       102       103       Maria         105       MACHINE       LEARNING       3       1003       Maria	Kedia M	102			
105 MACHINE LEARNING   3   1001 Albert			4	1007	CHAITREYA
105 MACHINE LEARNING 3 1002 Foster  Silva M 102 105 MACHINE LEARNING 3 1003 Maria	105 MACHINE	LEARNING	3	1001	Albert
Silva M 102 105 MACHINE LEARNING 3 1003 Maria			3	1002	Foster
	Silva	M 102			
			3	1003	mar1a

G ' la	105 MACHIN			3	1004	Pamela
Smith	105 MACHIN	E LEARNING	-	3	1005	Indiana
Jones		М				
	CID CNAME			CREDIT	PID	PNAME
G	CID					
	105 MACHIN	_		3	1006	Gaurav
Kedia	105 MACHIN	M 1 E LEARNING		3	1007	CHAITREYA
BHELKA	R M			9	1007	СПППППППППППППППППППППППППППППППППППППП
	100 2011			4	1001	Albert
DCosta	106 DSA	М	101	4	1002	Foster
		M	102	T	1002	roscer
	106 DSA			4	1003	Maria
Anders	on 106 DSA	F	102	4	1 0 0 /	Pamela
Smith		F	101	7	1004	ramera
	106 DSA			4	1005	Indiana
Jones	106 DSA	M		4		
Kedia		м 1	02	4	1006	Gaurav
иеита	106 DSA	_	-	4	1007	CHAITREYA
BHELKA	R M	10	2			

SQL> SELECT PNAME || ' takes course in ' || CNAME || ' of ' || CREDIT || ' credits.'

- 2 FROM COURSE C JOIN PARTICIPANT P
- 3 ON C.CID = P.CID;

PNAME | | 'TAKESCOURSEIN' | | CNAME | | 'OF' | | CREDIT | | 'CREDITS.'

-----

\_\_\_\_\_

Albert DCosta takes course in Database Management Systems of 5 credits.

Pamela Smith takes course in Database Management Systems of 5 credits.

Gaurav Kedia takes course in Object-Oriented Systems of 4 credits.

Parag Dewangan takes course in Object-Oriented Systems of 4 credits.

Foster Silva takes course in Object-Oriented Systems of 4 credits

Maria Anderson takes course in Object-Oriented Systems of 4 credits.

6 rows selected.

SQL> SELECT PNAME || ' HAS OPTED FOR COURSE ' || CNAME || ' OF ' || CREDIT || ' CREDITS.'

- 2 FROM COURSE C JOIN PARTICIPANT P
- 3 ON C.CID = P.CID;

```
PNAME | | 'HASOPTEDFORCOURSE' | | CNAME | | 'OF' | | CREDIT | | 'CREDITS.'
Albert DCosta HAS OPTED FOR COURSE Database Management Systems OF 5
Pamela Smith HAS OPTED FOR COURSE Database Management Systems OF 5
Gaurav Kedia HAS OPTED FOR COURSE Object-Oriented Systems OF 4
CREDITS.
Parag Dewangan HAS OPTED FOR COURSE Object-Oriented Systems OF 4
CREDITS.
Foster Silva HAS OPTED FOR COURSE Object-Oriented Systems OF 4
Maria Anderson HAS OPTED FOR COURSE Object-Oriented Systems OF 4
CREDITS.
6 rows selected.
SQL> INSERT INTO PARTICIPANT VALUES (&PID, &PNAME, &G, &CID);
Enter value for pid: 109
Enter value for pname: 'RAMESH'
Enter value for g: NULL
Enter value for cid: 109
    1: INSERT INTO PARTICIPANT VALUES (&PID, &PNAME, &G, &CID)
new 1: INSERT INTO PARTICIPANT VALUES (109, 'RAMESH', NULL, 109)
INSERT INTO PARTICIPANT VALUES (109, 'RAMESH', NULL, 109)
ERROR at line 1:
ORA-01400: cannot insert NULL into ("E39Gaurav"."PARTICIPANT"."GENDER")
SQL> SELECT CONCAT (PNAME, CONCAT (' takes course in ',
  2 CONCAT( CNAME, CONCAT(' of ', CONCAT(CREDIT, ' credits.')))))
  3 FROM COURSE C JOIN PARTICIPANT P
  4 ON C.CID = P.CID;
CONCAT (PNAME, CONCAT ('TAKESCOURSEIN', CONCAT (CNAME, CONCAT ('OF', CONCAT (CREDI
T, 'CREDITS.')))))
______
Albert DCosta takes course in Database Management Systems of 5
credits.
Pamela Smith takes course in Database Management Systems of 5
credits.
Gaurav Kedia takes course in Object-Oriented Systems of 4
credits.
Parag Dewangan takes course in Object-Oriented Systems of 4
credits.
Foster Silva takes course in Object-Oriented Systems of 4
credits.
Maria Anderson takes course in Object-Oriented Systems of 4 credits.
6 rows selected.
SQL> SELECT PNAME || ' takes course in ' || CNAME || ' of ' || CREDIT ||
' credits.'
  2 AS "Participant --> Course"
```

```
Participant --> Course
______
_____
Albert DCosta takes course in Database Management Systems of 5 credits.
Pamela Smith takes course in Database Management Systems of 5 credits.
Gaurav Kedia takes course in Object-Oriented Systems of 4 credits.
Parag Dewangan takes course in Object-Oriented Systems of 4 credits.
Foster Silva takes course in Object-Oriented Systems of 4 credits.
Maria Anderson takes course in Object-Oriented Systems of 4 credits.
6 rows selected.
SQL> DESC COURSE;
Name
Null?
       Type
NOT NULL NUMBER (3)
CNAME
NOT NULL VARCHAR2 (30)
CREDIT
NUMBER (1)
SQL> DESC PARTICIPANT;
Name
Null?
      Type
PTD
NOT NULL NUMBER (4)
PNAME
NOT NULL VARCHAR2 (25)
GENDER
NOT NULL CHAR(1)
CID
NUMBER (3)
SQL> DESC USER_CONSTRAINTS;
Name
Null?
      Type
______
______
OWNER
VARCHAR2 (30)
CONSTRAINT NAME
NOT NULL VARCHAR2 (30)
```

3 FROM COURSE C JOIN PARTICIPANT P

4 ON C.CID = P.CID;

CONSTRAINT\_TYPE
VARCHAR2(1)
TABLE\_NAME
NOT NULL VARCHAR2(30)

SEARCH CONDITION

LONG

R OWNER

VARCHAR2 (30)

R CONSTRAINT NAME

VARCHAR2 (30)

DELETE RULE

VARCHAR2 (9)

STATUS

VARCHAR2(8)

DEFERRABLE

VARCHAR2 (14)

DEFERRED

VARCHAR2 (9)

VALIDATED

VARCHAR2 (13)

GENERATED

VARCHAR2 (14)

BAD

VARCHAR2 (3)

RELY

VARCHAR2 (4)

LAST\_CHANGE

DATE

INDEX OWNER

VARCHAR2 (30)

INDEX NAME

VARCHAR2 (30)

INVALID

VARCHAR2 (7)

VIEW RELATED

VARCHAR2 (14)

SYS C0011245

SQL> SELECT CONSTRAINT\_NAME, CONSTRAINT\_TYPE, DELETE\_RULE, TABLE\_NAME FROM USER CONSTRAINTS;

CONSTRAINT NAME C DELETE RU TABLE NAME SYS C0011237 С COURSE С COURSE SYS C0011239 COURSE COURSE\_CK\_CID С COURSE CK CREDIT С COURSE SYS C0011243 С PARTICIPANT SYS C0011244 С PARTICIPANT

PARTICIPANT

```
PARTICIPANT_CK_PID C
PARTICIPANT_CK_GENDER C
SYS_C0011250 C
SYS_C0011251
                                          PARTICIPANT
                                          PARTICIPANT
                                          COLLEGE
SYS C0011251
                              С
                                          COLLEGE
                     C DELETE RU TABLE NAME
CONSTRAINT NAME
PARTICIPANT_FK_COURSE_CID R NO ACTION PARTICIPANT
                              P
COURSE PK CID
                                    COURSE
                          U
P
P
                                        COURSE
PARTICIPANT
COLLEGE
COURSE UQ CNAME
PARTICIPANT PK PID
COLLEGE PK CNAME
16 rows selected.
SQL> SELECT CONSTRAINT NAME, CONSTRAINT TYPE, DELETE RULE, TABLE NAME FROM
USER CONSTRAINTS
  2 WHERE TABLE NAME='PARTICIPANT';
CONSTRAINT NAME
                              C DELETE RU
TABLE NAME
SYS C0011243
                               С
PARTICIPANT
SYS_C0011244 C PARTICIPANT
SYS_C0011245 C PARTICIPANT
PARTICIPANT_CK_PID C PARTICIPANT
PARTICIPANT_CK_GENDER C PARTICIPANT
PARTICIPANT_PK_PID P PARTICIPANT
PARTICIPANT_FK_COURSE_CID R NO ACTION PARTICIPANT
7 rows selected.
SQL> DELETE FROM COURSE
 2 WHERE CID=101;
DELETE FROM COURSE
ERROR at line 1:
<code>ORA-02292:</code> integrity constraint (E39Gaurav.PARTICIPANT_FK_COURSE_CID) violated - child record found
SQL> ALTER TABLE PARTICIPANT DROP CONSTRAINT PARTICIPANT FK COURSE CID;
Table altered.
SQL> SELECT CONSTRAINT_NAME, CONSTRAINT_TYPE, DELETE_RULE, TABLE_NAME FROM
USER CONSTRAINTS
 2 WHERE TABLE NAME='PARTICIPANT';
CONSTRAINT NAME
                             C DELETE RU
TABLE NAME
_____
SYS C0011243
                               С
PARTICIPANT
```

SYS_C0011244	С	
PARTICIPANT		
SYS_C0011245	С	
PARTICIPANT		
PARTICIPANT_CK_PID	С	PARTICIPANT
PARTICIPANT_CK_GENDER	С	PARTICIPANT
PARTICIPANT_PK_PID	P	PARTICIPANT

SQL> ALTER TABLE PARTICIPANT ADD CONSTRAINT PARTICIPANT\_FK\_COURSE\_CID FOREIGN KEY

2 (CID) REFERENCES COURSE(CID) ON DELETE CASCADE;

Table altered.

SQL> SELECT CONSTRAINT\_NAME, CONSTRAINT\_TYPE, DELETE\_RULE, TABLE\_NAME FROM USER\_CONSTRAINTS

2 WHERE TABLE NAME='PARTICIPANT';

CONSTRAINT_NAME	C DELETE_RU	TABLE_NAME
SYS_C0011243	С	PARTICIPANT
SYS_C0011244	С	PARTICIPANT
SYS_C0011245	С	PARTICIPANT
PARTICIPANT_CK_PID	С	PARTICIPANT
PARTICIPANT_CK_GENDER	С	PARTICIPANT
PARTICIPANT_PK_PID	P	PARTICIPANT
PARTICIPANT FK COURSE CID	R CASCADE	PARTICIPANT

7 rows selected.

SQL> DELETE FROM COURSE

2 WHERE CID=101;

1 row deleted.

SQL> SELECT \* FROM COURSE;

CID	CNAME	CREDIT
102	Object-Oriented Systems	4
103	MATHEMATICS	5
104	MICROCONTROLLER	4
105	MACHINE LEARNING	3
106	DSA	4

#### SQL> SELECT \* FROM PARTICIPANT;

PID	PNAME	G	CID
1002	Foster Silva	М	102
1003	Maria Anderson	F	102
1005	Indiana Jones	M	
1006	Gaurav Kedia	М	102
1007	Parag Dewangan	М	102
1005 1006	Indiana Jones Gaurav Kedia	M M	102

#### SQL> ROLLBACK;

Rollback complete.

#### SQL> SELECT \* FROM COURSE;

CID	CNAME	CREDIT
101	Database Management Systems	5
102	Object-Oriented Systems	4
103	MATHEMATICS	5
104	MICROCONTROLLER	4
105	MACHINE LEARNING	3
106	DSA	4

6 rows selected.

SQL> SELECT \* FROM PARTICIPANT;

PID	PNAME	G	CID
1001	Albert DCosta	M	101
1002	Foster Silva	M	102
1003	Maria Anderson	F	102
1004	Pamela Smith	F	101
1005	Indiana Jones	M	
1006	Gaurav Kedia	M	102
1007	Parag Dewangan	M	102

7 rows selected.

SQL> ALTER TABLE PARTICIPANT DROP CONSTRAINT PARTICIPANT\_FK\_COURSE\_CID; Table altered.

SQL> ALTER TABLE PARTICIPANT ADD CONSTRAINT PARTICIPANT\_FK\_COURSE\_CID FOREIGN KEY

2 (CID) REFERENCES COURSE(CID) ON DELETE SET NULL;

Table altered.

SQL> DELETE FROM COURSE

2 WHERE CID=101;

1 row deleted.

SQL> SELECT \* FROM COURSE;

CID CNAME

CREDIT

\_\_\_\_\_\_

102 Object-Oriented Systems

4

```
103 MATHEMATICS
     104 MICROCONTROLLER
4
     105 MACHINE LEARNING
3
    106 DSA
4
SQL> SELECT * FROM PARTICIPANT;
    PID PNAME
CID
_____ _ _ _ ____
    1001 Albert DCosta
Μ
    1003 Maria Anderson F
1004 Pamela Smith
                                     102
    1005 Indiana Jones
                             Μ
                            M
M
                                  102
    1006 Gaurav Kedia
                        M
                                     102
    1007 Parag Dewangan
7 rows selected.
SQL> ROLLBACK;
Rollback complete.
SQL> SELECT * FROM PARTICIPANT;
    PID PNAME
                              G
    1001 Albert DCosta
                             M
101
    1002 Foster Silva
                            M
102
    1003 Maria Anderson F
102
                        F
M
    1004 Pamela Smith
                                101
    1005 Indiana Jones
                          .
M
.
                                    102
     1006 Gaurav Kedia
                             M
                                     102
     1007 Parag Dewangan
7 rows selected.
SQL> SELECT * FROM COURSE;
                                     CREDIT
     CID CNAME
_____ ____
     101 Database Management Systems
     102 Object-Oriented Systems
     103 MATHEMATICS
```

```
104 MICROCONTROLLER
      105 MACHINE LEARNING
                                               3
      106 DSA
6 rows selected.
SQL> DESC DUAL;
Name
Null?
DUMMY
VARCHAR2(1)
SQL> SELECT * FROM DUAL;
X
SQL> SELECT SYDATE FROM DUAL;
SELECT SYDATE FROM DUAL
ERROR at line 1:
ORA-00904: "SYDATE": invalid identifier
SOL> SELECT SYSDATE FROM DUAL;
SYSDATE
_____
23-SEP-22
SQL> SELECT SYSDATE, SYSTIMESTAMP FROM DUAL;
SYSDATE SYSTIMESTAMP
______
23-SEP-22 23-SEP-22 11.24.40.588000 AM +05:30
SQL > SELECT ABS(-5), SIGN(-2), SQRT(9), CEIL(3.5289);
SELECT ABS(-5), SIGN(-2), SQRT(9), CEIL(3.5289)
ERROR at line 1:
ORA-00923: FROM keyword not found where expected
SQL> SELECT ABS(-5), SIGN(-2), SQRT(9), CEIL(3.5289) FROM DUAL;
  ABS (-5) SIGN (-2) SQRT (9) CEIL (3.5289)
               -1
```

SQL> SELECT \* FROM PARTICIPANT;

PID	PNAME	G	CID
1001	Albert DCosta	M	101
1002	Foster Silva	М	102
1003	Maria Anderson	F	102
1004	Pamela Smith	F	101
1005	Indiana Jones	M	
1006	Gaurav Kedia	M	102
1007	Parag Dewangan	М	102

SQL> SELECT \* FROM COURSE;

CID	CNAME	CREDIT
101	Database Management Systems	5
102	Object-Oriented Systems	4
103	MATHEMATICS	5
104	MICROCONTROLLER	4
105	MACHINE LEARNING	3
106	DSA	4

6 rows selected.

SQL> INSERT INTO PARTICIPANT VALUES (1008, 'DAA', 'M', NULL);

1 row created.

SQL> INSERT INTO PARTICIPANT VALUES (1009, 'COMPUTER PROGRAMMING', 'M', NULL);

1 row created.

SQL> SELECT \* FROM PARTICIPANT;

PID	PNAME	G	CID
1001	Albert DCosta	M	101
1002	Foster Silva	M	102
1003	Maria Anderson	F	102
1004	Pamela Smith	F	101
1005	Indiana Jones	M	
1006	Gaurav Kedia	M	102
1007	Parag Dewangan	M	102
1008	DAA	M	
1009	COMPUTER PROGRAMMING	M	

9 rows selected.

```
SQL> INSERT INTO COURSE VALUES(&CID, &CNAME, &CREDIT)
```

2 ;

Enter value for cid: 108

Enter value for cname: 'COMPUTER PROGRAMMING'

Enter value for credit: 2

old 1: INSERT INTO COURSE VALUES (&CID, &CNAME, &CREDIT)

new 1: INSERT INTO COURSE VALUES(108, 'COMPUTER PROGRAMMING', 2)

```
1 row created.
SQL> DELETE FROM PARTICIPANT WHERE PID=1009;
1 row deleted.
SQL> SELECT COUNT(CID), CID FROM PARTICIPANT GROUP BY CID;
COUNT (CID) CID
       0
              102
101
       4
        2
SQL> INSERT INTO PARTICIPANT VALUES (1009, 'VIRAT KOHLI', 'M', NULL);
1 row created.
SQL> SELECT COUNT(*), CID FROM PARTICIPANT GROUP BY CID;
 COUNT(*)
CID
_____
      4
102
      2
101
SQL> SELECT * FROM PARTICIPANT;
     PID PNAME
CID
_____ _ _ _ ___
                         M
     1001 Albert DCosta
     1002 Foster Silva
                               M
     1003 Maria Anderson
                              F
                                       102
    1004 Pamela Smith
                               F
                                       101
                               Μ
     1005 Indiana Jones
                                    102
                               M
     1006 Gaurav Kedia
                               M
                                       102
     1007 Parag Dewangan
     1008 DAA
                               M
     1009 VIRAT KOHLI
                               M
```

SQL> DELETE FROM PARTICIPANT WHERE PID=1008;

1 row deleted.

SQL> SELECT COUNT(CID) AS NO\_OF\_PARTICIPANT\_IN\_COURSE,CID FROM PARTICIPANT GROUP BY CID;

# NO\_OF\_PARTICIPANT\_IN\_COURSE

CID

101

SQL> SELECT COUNT(\*),CID

- 2 FROM PARTICIPANT
- 3 GROUP BY CID
- 4 HAVING COUNT(\*) >= 2;

CID	COUNT(*)
	2
102	4
101	2

## SQL> SELECT \* FROM COURSE CROSS JOIN PARTICIPANT;

2

	CID	CNAME	CREDIT	PID	PNAME
G CID					
DCosta		Database Management Systems  M 101	5	1001	Albert
Silva	101	Database Management Systems M 102	5	1002	Foster
Anders		Database Management Systems F 102	5	1003	Maria
		Database Management Systems	5	1004	Pamela
Smith	101	F 101 Database Management Systems	5	1005	Indiana
Jones	101	M Database Management Systems	5	1006	Gaurav
Kedia	101	M 102 Database Management Systems	5	1007	CHAITREYA
BHELKA:	R	м 102	_		
KOHLI	101	Database Management Systems M	5	1009	VIRAT
DCosta	102	Object-Oriented Systems M 101	4	1001	Albert
	102	Object-Oriented Systems	4	1002	Foster
Silva	102	M 102 Object-Oriented Systems	4	1003	Maria
Anders		F 102	-		
G	-	CNAME ID	CREDIT	PID	PNAME

Smith	102	Object-Oriented Systems F 101	4	1004	Pamela
	102	Object-Oriented Systems	4	1005	Indiana
Jones	102	M Object-Oriented Systems	4	1006	Gaurav
Kedia	102	M 102 Object-Oriented Systems	4	1007	CHAITREYA
BHELKA		M 102 Object-Oriented Systems	4	1009	VIRAT
KOHLI		M MATHEMATICS	5		Albert
DCosta		M 101			
Silva		MATHEMATICS M 102	5		Foster
Anders		MATHEMATICS F 102	5	1003	Maria
Smith	103	MATHEMATICS F 101	5	1004	Pamela
Jones		MATHEMATICS M	5	1005	Indiana
	103	MATHEMATICS	5	1006	Gaurav
Kedia		M 102			
G		CNAME ID	CREDIT	PID	PNAME
DIETIV		MATHEMATICS 100	5	1007	CHAITREYA
BHELKA		MATHEMATICS	5	1009	VIRAT
KOHLI	104	M MICROCONTROLLER	4	1001	Albert
DCosta		M 101 MICROCONTROLLER	4	1002	Foster
Silva	104	M 102 MICROCONTROLLER	4	1003	Maria
Anders	on	F 102 MICROCONTROLLER			Pamela
Smith		F 101	4		
Jones		MICROCONTROLLER M	4	1005	Indiana
Kedia		MICROCONTROLLER M 102	4	1006	Gaurav
	104	MICROCONTROLLER M 102	4	1007	CHAITREYA
	104	MICROCONTROLLER	4	1009	VIRAT
KOHLI	105	MACHINE LEARNING	3	1001	Albert
DCosta		M 101			
G	CID	CNAME ID	CREDIT	PID	PNAME
0 ' 1		MACHINE LEARNING	3	1002	Foster
Silva	105	MACHINE LEARNING	3	1003	Maria
Anders	on	F 102			

Q 1- 1-	105 MACHINE		3	1004	Pamela
Smith	105 MACHINE	F 101 E LEARNING	3	1005	Indiana
Jones	105 MACHINE	E LEARNING	3	1006	Gaurav
	105 MACHINE		3	1007	CHAITREYA
	R M 105 MACHINI	E LEARNING	3	1009	VIRAT
KOHLI	100 DOM		4	1001	Albert
	106 DSA	M 101	4	1002	Foster
	106 DSA	M 102	4	1003	Maria
	on 106 DSA	F 102	4	1004	Pamela
Smith		F 101			
G	CID CNAME		CREDIT	PID	PNAME
	106 DSA	М	4	1005	Indiana
001105	106 DSA	м 102	4	1006	Gaurav
	106 DSA R M		4	1007	CHAITREYA
	106 DSA		4	1009	VIRAT
		ER PROGRAMMING	2	1001	Albert
	108 COMPUTE	M 101 ER PROGRAMMING	2	1002	Foster
		ER PROGRAMMING	2	1003	Maria
Anderso		F 102 ER PROGRAMMING	2	1004	Pamela
Smith	108 COMPUTE	F 101 ER PROGRAMMING	2	1005	Indiana
Jones	108 COMPUTE	M ER PROGRAMMING	2	1006	Gaurav
Kedia		M 102 ER PROGRAMMING	2	1007	CHAITREYA
BHELKAI	R M	102			
G	CID CNAME CID		CREDIT	PID	PNAME
KOHLI	108 COMPUTE	ER PROGRAMMING M	2	1009	VIRAT

SQL> SELECT \* FROM COURSE, PARTICIPANT;

G	CID CNAME CID	CREDIT	PID PNAME
DCosta	101 Database Management Systems M 101	5	1001 Albert
Silva	101 Database Management Systems M 102	5	1002 Foster
	101 Database Management Systems	5	1003 Maria
Anderso	101 Database Management Systems	5	1004 Pamela
Smith	F 101 101 Database Management Systems	5	1005 Indiana
Jones	M 101 Database Management Systems	5	1006 Gaurav
Kedia	M 102 101 Database Management Systems	5	1007 CHAITREYA
BHELKAF	101 Database Management Systems	5	1009 VIRAT
KOHLI	M 102 Object-Oriented Systems	4	1001 Albert
DCosta	M 101 102 Object-Oriented Systems	4	1002 Foster
Silva	M 102 102 Object-Oriented Systems	4	1003 Maria
Anderso	on F 102		
G	CID CNAME CID	CREDIT	PID PNAME
Smith	102 Object-Oriented Systems F 101	4	1004 Pamela
Jones	102 Object-Oriented Systems M	4	1005 Indiana
	102 Object-Oriented Systems M 102	4	1006 Gaurav
	102 Object-Oriented Systems	4	1007 CHAITREYA
BHELKAF	102 Object-Oriented Systems	4	1009 VIRAT
KOHLI	M 103 MATHEMATICS	5	1001 Albert
DCosta	M 101 103 MATHEMATICS	5	1002 Foster
Silva	M 102 103 MATHEMATICS	5	1003 Maria
Anderso	on F 102 103 MATHEMATICS	5	1004 Pamela
Smith	F 101 103 MATHEMATICS	5	1005 Indiana
Jones	M 103 MATHEMATICS	5	1006 Gaurav
Kedia	M 102	-	1000 Gaulav
G	CID CNAME CID		PID PNAME

	MATHEMATICS 102	5	1007	CHAITREYA
103	M 102 B MATHEMATICS	5	1009	VIRAT
	M MICROCONTROLLER	4	1001	Albert
	M 101 MICROCONTROLLER	4	1002	Foster
Silva	M 102			
Anderson	MICROCONTROLLER F 102	4	1003	Maria
104	MICROCONTROLLER F 101	4	1004	Pamela
104	MICROCONTROLLER M	4	1005	Indiana
104	MICROCONTROLLER	4	1006	Gaurav
104	M 102 MICROCONTROLLER	4	1007	CHAITREYA
	M 102 MICROCONTROLLER	4	1009	VIRAT
KOHLI 10	M MACHINE LEARNING	3	1001	Albert
	M 101	3	1001	THE CT C
CII	CNAME	CREDIT	PID	PNAME
G (	:ID 			
105	MACHINE LEARNING	3	1002	Foster
Silva	M 102 MACHINE LEARNING			
Anderson	F 102			Maria
	MACHINE LEARNING F 101	3	1004	Pamela
105	MACHINE LEARNING M	3	1005	Indiana
105	MACHINE LEARNING	3	1006	Gaurav
	M 102 MACHINE LEARNING	3	1007	CHAITREYA
BHELKAR 105	M 102 MACHINE LEARNING	3	1009	VIRAT
KOHLI 100	M 5 DSA	4	1001	Albert
DCosta	M 101			
Silva	DSA M 102	4		Foster
100 Anderson	DSA F 102	4	1003	Maria
100 Smith	DSA F 101	4	1004	Pamela
	) CNAME	CDEDIM	חות	DNIAME
	ID .	CREDII	PID	PNAME
	·			
100 Jones	DSA M	4	1005	Indiana
106	5 DSA	4	1006	Gaurav
Kedia	M 102			

	DSA	4	1007	CHAITREYA
BHELKAR	M 102			
106		4	1009	VIRAT
KOHLI				
	COMPUTER PROGRAMMING	2	1001	Albert
	M 101	0	1 0 0 0	
	COMPUTER PROGRAMMING	2	1002	Foster
	M 102 COMPUTER PROGRAMMING	2	1003	Maria
	F 102	۷	1005	Malla
	COMPUTER PROGRAMMING	2	1004	Pamela
Smith	F 101			
108	COMPUTER PROGRAMMING	2	1005	Indiana
	М			
	COMPUTER PROGRAMMING	2	1006	Gaurav
Kedia	М 102			
	COMPUTER PROGRAMMING	2	1007	CHAITREYA
BHELKAR	M 102			
CID	CNAME	CREDIT	חדם	DNAME
G CI		CKEDII	LID	LIMME
108	COMPUTER PROGRAMMING	2	1009	VIRAT
KOHLI	M			

SQL> SELECT \*

- 2 FROM COURSE C JOIN PARTICIPANT P
- 3 ON C.CID=P.PID;

no rows selected

SQL> SELECT \*

- 2 FROM COURSE C JOIN PARTICIPANT P
  3 ON C.CID=P.CID;

	_	CNAME	CREDIT	PID	PNAME
G	C:	ID			
	101	Database Management Systems	5	1001	Albert
DCosta		M 101			
	101	Database Management Systems	5	1004	Pamela
Smith		F 101			
	102	Object-Oriented Systems	4	1006	Gaurav
Kedia		M 102			
	102	Object-Oriented Systems	4	1007	CHAITREYA
BHELKA	R	M 102			
	102	Object-Oriented Systems	4	1002	Foster
Silva		M 102			
	102	Object-Oriented Systems	4	1003	Maria
Anders	on	F 102			

6 rows selected.

SQL>

# SQL> SELECT \* FROM COURSE JOIN PARTICIPANT 2 ON COURSE.CID=PARTICIPANT.CID;

G	CID CNAME	CREDIT	PID	PNAME
DCosta	101 Database Management Systems M 101	5	1001	Albert
	101 Database Management Systems	5	1004	Pamela
Smith	F 101 102 Object-Oriented Systems	4	1006	Gaurav
Kedia	M 102 102 Object-Oriented Systems	4	1007	CHAITREYA
BHELKAI	R M 102	4	1002	Foster
Silva	102 Object-Oriented Systems M 102	4		
Anderso	102 Object-Oriented Systems on F 102	4	1003	Maria
6 80110	selected.			
0 LOWS	selected.			
SQL> SI	ELECT * FROM COURSE NATURAL JOIN PAR	TICIPANT;		
_	CID CNAME	CREDIT	חדח	DNAME
G	CID CNAME	CREDIT	PID	PNAME
DOssta	101 Database Management Systems	5	1001	Albert
DCosta	M 101 Database Management Systems	5	1004	Pamela
Smith	F 102 Object-Oriented Systems	4	1006	Gaurav
Kedia	M 102 Object-Oriented Systems	4		CHAITREYA
BHELKAI	R M			
Silva	102 Object-Oriented Systems M	4	1002	Foster
Anderso	102 Object-Oriented Systems	4	1003	Maria
6 rows	selected.			
	ELECT * FROM COURSE LEFT OUTER JOIN N COURSE.CID=PARTICIPANT.CID;	PARTICIPANT		
	CID CNAME	CREDIT	PID	PNAME
G CID				
		<b></b>		
-	101 Database Management Systems	5	1001	Albert
DCosta 101	M	J	- 3 0 2	0

101 Database Management Systems Smith F	5	1004 Pamela			
101 102 Object-Oriented Systems Kedia M	4	1006 Gaurav			
102 102 Object-Oriented Systems	4	1007 CHAITREYA			
BHELKAR M 102 102 Object-Oriented Systems Silva M 102	4	1002 Foster			
102 Object-Oriented Systems Anderson F 102	4	1003 Maria			
103 MATHEMATICS	5				
104 MICROCONTROLLER 105 MACHINE LEARNING	4 3				
106 DSA	4				
108 COMPUTER PROGRAMMING	2				
11 rows selected.					
SQL> SPOOL OFF;					
SQL> SELECT * FROM COURSE1;					
CID CNAME CREI	IT				
101 DBMS	5				
102 MATHEMATICS	5				
103 DAA	4				
104 DSA	5				
SQL> ALTER TABLE COURSE1 2 ADD PRIMARY KEY (CID);					
Table altered.					
SQL> CREATE TABLE PARTICIPANT1( 2 PID NUMBER(4), 3 PNAME VARCHAR2(25), 4 GENDER CHAR(1), 5 CID NUMBER(3), 6 CONSTRAINT PARTICIPANT1_FK_COURSE_CID FOREIGN 7 (CID) REFERENCES COURSE1(CID));	KEY				
Table created.					
<pre>SQL&gt; CREATE TABLE PARTICIPANT2(</pre>	KEY				
Table created.					

SQL> INSERT INTO PARTICIPANT1 VALUES(&PID,&PNAME,&GENDER,&CID);

```
Enter value for pid: 1001
Enter value for pname: 'Gaurav Kedia'
Enter value for gender: 'M'
Enter value for cid: 101
    1: INSERT INTO PARTICIPANT1 VALUES (&PID, &PNAME, &GENDER, &CID)
      1: INSERT INTO PARTICIPANT1 VALUES (1001, 'Gaurav Kedia', 'M', 101)
1 row created.
SOL> /
Enter value for pid: 1002
Enter value for pname: 'Parag Dewangan'
Enter value for gender: 'M'
Enter value for cid: 102
    1: INSERT INTO PARTICIPANT1 VALUES (&PID, &PNAME, &GENDER, &CID)
new 1: INSERT INTO PARTICIPANT1 VALUES (1002, 'CHAITREYA
BHELKAR', 'M', 102)
1 row created.
SQL> /
Enter value for pid: 1003
Enter value for pname: 'DEVESH WADHWANI'
Enter value for gender: 'M'
Enter value for cid: 103
      1: INSERT INTO PARTICIPANT1 VALUES(&PID,&PNAME,&GENDER,&CID)
old
      1: INSERT INTO PARTICIPANT1 VALUES (1003, 'DEVESH WADHWANI', 'M', 103)
1 row created.
SQL> SELECT * FROM PARTICIPANT1;
      PID PNAME
                                    G
_____ _ _ _ ___
                                   M
                                            101
      1001 Gaurav Kedia
                                    Μ
                                              102
      1002 Parag Dewangan
      1003 DEVESH WADHWANI
                                              103
                                    M
SQL> INSERT INTO PARTICIPANT2 VALUES(&PID,&PNAME,&GENDER,&CID);
Enter value for pid: 1004
Enter value for pname: 'ALBERT DCOSTA'
Enter value for gender: 'M'
Enter value for cid: 101
old 1: INSERT INTO PARTICIPANT2 VALUES (&PID, &PNAME, &GENDER, &CID)
      1: INSERT INTO PARTICIPANT2 VALUES (1004, 'ALBERT DCOSTA', 'M', 101)
1 row created.
SOL> /
Enter value for pid: 1001
Enter value for pname: 'FOSTER SILVA'
Enter value for gender: 'M'
Enter value for cid: 104
old 1: INSERT INTO PARTICIPANT2 VALUES(&PID,&PNAME,&GENDER,&CID)
      1: INSERT INTO PARTICIPANT2 VALUES (1001, 'FOSTER SILVA', 'M', 104)
1 row created.
```

SQL> /

Enter value for pid: 1005

Enter value for pname: 'MARTINA WALES'

Enter value for gender: 'F'
Enter value for cid: 101

old 1: INSERT INTO PARTICIPANT2 VALUES(&PID,&PNAME,&GENDER,&CID)
new 1: INSERT INTO PARTICIPANT2 VALUES(1005, 'MARTINA WALES', 'F', 101)

1 row created.

SQL> SET LINESIZE 250;

SQL> SELECT \* FROM PARTICIPANT1 CROSS JOIN PARTICIPANT2;

PID PNAME		G	CID	PID PNAME
G CID				
1001 Gaurav Kedia	101	M	101	1004 ALBERT
	101	3.6	1.0.1	1001 50055 0777
1001 Gaurav Kedia M 104		М	101	1001 FOSTER SILVA
1001 Gaurav Kedia		M	101	1005 MARTINA
WALES F	101			
1002 Parag Dewangan		М	102	1004 ALBERT
DCOSTA M	101			
1002 Parag Dewangan M 104		М	102	1001 FOSTER SILVA
1002 Parag Dewangan		M	102	1005 MARTINA
WALES F	101			
1003 DEVESH WADHWANI		M	103	1004 ALBERT
DCOSTA M	101			
1003 DEVESH WADHWANI		M	103	1001 FOSTER SILVA
M 104				
1003 DEVESH WADHWANI		M	103	1005 MARTINA
WALES F	101			

<sup>9</sup> rows selected.

#### SQL> SELECT \* FROM PARTICIPANT1, PARTICIPANT2;

G	PID PNAME CID		G	CID	PID PNAME
		 _			
DCOSTA	1001 Gaurav Kedia M	101	М	101	1004 ALBERT
M	1001 Gaurav Kedia 104		М	101	1001 FOSTER SILVA
WALES	1001 Gaurav Kedia F	101	М	101	1005 MARTINA
DCOSTA	1002 Parag Dewangar M	101	М	102	1004 ALBERT
М	1002 Parag Dewangan 104		М	102	1001 FOSTER SILVA
WALES	1002 Parag Dewangan	101	М	102	1005 MARTINA

	1003 DEVESH				103	1004 A	LBERT
	TA 1003 DEVESH				103	1001 F	OSTER SILVA
	104 1003 DEVESH S			М	103	1005 M	ARTINA
9 ro	ws selected.						
	SELECT * FROM		PANT1	P1, PARTICII	PANT2 P2		
	PID PNAME CID				CID		
				М	101	1001 F	OSTER SILVA
	SELECT * FROM ON P1.PID=P2		PANT1	P1 JOIN PAI	RTICIPANT2	P2	
G 	PID PNAME CID			G 	CID		
	1001 Gaurav 104			М	101	1001 FO	STER SILVA
	SELECT * FROM PARTICI	PANT1 NAT	URAL J	OIN PARTIC	IPANT2;		
no r	ows selected						
SQL> 2 3	SELECT * FROM PARTICION P1.PID=P2		LEFT (	OUTER JOIN	PARTICIPAN'	Γ2 P2	
G 	PID PNAME CID			G 	CID	PID P	NAME
	 1001 Gaurav	Vodia		М	101	1001 FO	STER SILVA
M	104					1001 10	OTEN OTEVI
	1003 DEVESH 1002 Parag			M M	103 102		
SQL> SELECT *  2 FROM PARTICIPANT1 P1, PARTICIPANT2 P2  3 WHERE P1.PID = P2.PID (+);							
G 	PID PNAME CID			G 	CID	PID P	NAME

1001 Gauray M 104 1003 DEVESH 1002 Parag	H WADHWANI		M M M	103	1001 FOSTER SILVA	
SQL> SELECT * 2 FROM PARTICI 3 ON P1.PID =		RIGHT OUT	TER JOIN 1	PARTICIPANT	72 P2	
PID PNAME G CID					PID PNAME	
1001 Gaurav M 104			М	101	1001 FOSTER SILVA	
DCOSTA	M	101			1004 ALBERT	
WALES	F	101			1005 MARTINA	
SQL> SELECT * 2 FROM PARTICE 3 WHERE P1.PII			PANT2 P2			
PID PNAME G CID					PID PNAME	
1001 Gauray M 104			М	101	1001 FOSTER SILVA	
DCOSTA	М	101			1004 ALBERT	
WALES	F	101			1005 MARTINA	
SQL> SELECT * 2 FROM PARTICE 3 ON P1.PID =		FULL OUT	ER JOIN PA	ARTICIPANT2	P2	
PID PNAME G CID				CID	PID PNAME	
					1004 ALBERT	
DCOSTA 1001 Gauray		101	M	101	1001 FOSTER SILVA	
M 104					1005 MARTINA	
WALES	F		Νď	102	1000 1111111111	
1003 DEVESH 1002 Parag			M M			
SQL> SELECT *  2 FROM PARTICIPANT1 P1, PARTICIPANT2 P2  3 WHERE P1.PID (+) = P2.PID (+);  WHERE P1.PID (+) = P2.PID (+)  *  ERROR at line 3:						

SQL> SELECT \* FROM PARTICIPANT1 2 UNION

3 SELECT \* FROM PARTICIPANT2;

PID	PNAME	G	CID
1001	Gaurav Kedia	M	101
1001	FOSTER SILVA	M	104
1002	Parag Dewangan	M	102
1003	DEVESH WADHWANI	M	103
1004	ALBERT DCOSTA	M	101
1005	MARTINA WALES	Ŧ	101

6 rows selected.

SQL> SELECT \* FROM PARTICIPANT1

2 MINUS

3 SELECT \* FROM PARTICIPANT2;

PID	PNAME	G	CID
1001	C	М	101
	Gaurav Kedia Paraq Dewangan	M	102
	DEVESH WADHWANI	М	103

SQL> SELECT \* FROM PARTICIPANT1

2 INTERSECT

3 SELECT \* FROM PARTICIPANT2;

no rows selected

SQL> SELECT \* FROM PARTICIPANT1

2 MINUS (

3 SELECT \* FROM PARTICIPANT1

4 MINUS

5 SELECT \* FROM PARTICIPANT2

6);

no rows selected

SQL> SELECT \*

2 FROM PARTICIPANT1 P1, PARTICIPANT2 P2

3 WHERE P1.PID (+) = P2.PID

4 UNION

5 SELECT \*

6 FROM PARTICIPANT1 P1, PARTICIPANT2 P2

7 WHERE P1.PID = P2.PID (+);

	PID PNAME	G	CID	PID PNAME
G	CID			
М	1001 Gaurav Kedia 104	М	101	1001 FOSTER SILVA
	1002 Parag Dewangan	М	102	

1003 DEVESH WADHWANI M 103

DCOSTA M 101 1005 MARTINA

1004 ALBERT

WALES F 101

SQL> SELECT \* FROM COURSE;

CID	CNAME	CREDIT
101	DATABASE MANAGEMENT SYSTEMS	5
102	OBBJECT ORIENTED PROGRAMMING	5
103	OPERARING SYSTEM	4
104	MATHEMATICS	5
105	DAA	5
106	COMPUTER NETWORKS	4
107	ENVIRONMENTAL SCIENCE	3

7 rows selected.

SQL> SELECT \* FROM PARTICIPANT;

PID	PNAME	G	CID
1001	Albert DCosta	M	101
1002	Foster Silva	M	102
1003	Maria Anderson	F	102
1004	Pamela Smith	F	101
1005	Indiana Jones	M	
1006	Martinez Wales	F	103
1007	Gaurav Kedia	M	105
1008	Parag Dewangan	М	101

8 rows selected.

# SQL> SELECT \* FROM COURSE CROSS JOIN PARTICIPANT;

G	CID CNAME	CREDIT	PID	PNAME
	101 DATABASE MANAGEMENT SYSTEMS	5	1001	Albert
DCosta	M 101			
	101 DATABASE MANAGEMENT SYSTEMS	5	1002	Foster
Silva	M 102			
	101 DATABASE MANAGEMENT SYSTEMS	5	1003	Maria
Anders	on F 102			
	101 DATABASE MANAGEMENT SYSTEMS	5	1004	Pamela
Smith	F 101			
	101 DATABASE MANAGEMENT SYSTEMS	5	1005	Indiana
Jones	M			
	101 DATABASE MANAGEMENT SYSTEMS	5	1006	Martinez
Wales	F 103			
	101 DATABASE MANAGEMENT SYSTEMS	5	1007	Gaurav
Kedia	M 105			

Dhollro		DATABASE MANAGE		5	1008	Chaitreya
	102	OBBJECT ORIENTE	ED PROGRAMMING	5	1001	Albert
	102	M OBBJECT ORIENTE	ED PROGRAMMING	5	1002	Foster
Silva		M OBBJECT ORIENTE		5	1003	Maria
		F				
G		CNAME		CREDIT	PID	PNAME
		OBBJECT ORIENTE		5	1004	Pamela
Smith		F OBBJECT ORIENTE		5	1005	Indiana
Jones		M OBBJECT ORIENTE	ED PROGRAMMING	5	1006	Martinez
Wales		F OBBJECT ORIENTE	103			
Kedia		M	105	5		Gaurav
Bhelkaı		OBBJECT ORIENTE		5	1008	Chaitreya
DCosta		OPERARING SYSTE		4	1001	Albert
	103	OPERARING SYSTE	EM	4	1002	Foster
	103	OPERARING SYSTE	EM	4	1003	Maria
Anderso		F OPERARING SYSTE		4	1004	Pamela
		F OPERARING SYSTE		4	1005	Indiana
Jones		M OPERARING SYSTE	r M	4	1006	Martinez
		F F		T	1000	Marcinez
	CID	CNAME		CREDIT	PID	PNAME
G 	C: 	ID 				
	 103	 OPERARING SYSTE	- <b></b> EM	4	1007	Gaurav
Kedia		M OPERARING SYSTE	105	4		Chaitreya
Bhelkaı	ſ	M	101			_
DCosta		MATHEMATICS M	101	5		Albert
Silva	104	MATHEMATICS M	102	5	1002	Foster
Anderso		MATHEMATICS F	102	5	1003	Maria
		MATHEMATICS		5	1004	Pamela
Smith	104	F MATHEMATICS	101	5	1005	Indiana
Jones	104	M MATHEMATICS		5	1006	Martinez
Wales	104	F MATHEMATICS	103	5	1007	Gaurav
Kedia		М	105		1007	

		MATHEMATICS		5	1008	Chaitreya
Bhelka	r 105	M 101 DAA		5	1001	Albert
DCosta		DAA M	101			
		CNAME	CRED	IT	PID	PNAME
G 	C:	[D 				
			_			
Silva		DAA M	102	5	1002	Foster
	105	DAA		5	1003	Maria
Anders		DAA		5	1004	Pamela
Smith		F DAA	101	5	1005	Indiana
Jones		M		Ŭ	1000	Inalana
Wales		DAA F 103	3	5	1006	Martinez
	105	DAA		5	1007	Gaurav
Kedia	105	M 105	0	5	1008	Chaitreya
Bhelka		M 101 COMPUTER NETWORKS		4	1001	Albert
		M 1	101			
Silva		COMPUTER NETWORKS M	102	4	1002	Foster
Anders		COMPUTER NETWORKS F		4	1003	Maria
					1001	_
a ! . 1		COMPUTER NETWORKS		4	1004	Pamela
		COMPUTER NETWORKS F 1		4	1004	Pamela
Smith	CID	F CNAME	101	4 IT		
Smith	CID	F 1 CNAME ID	101			
Smith	CID C:	F 1 CNAME ID	101 CRED	IT 	PID	PNAME
Smith	CID C:	F 1 CNAME ID	101 CRED	IT 	PID	
Smith  G Jones	CID C:  106	CNAME  COMPUTER NETWORKS  M  COMPUTER NETWORKS	CRED	IT  4	PID 	PNAME
Smith  G Jones Wales	CID C: 106	CNAME  COMPUTER NETWORKS  M  COMPUTER NETWORKS  F  103  COMPUTER NETWORKS	CRED	IT  4 4	PID  1005 1006	PNAME Indiana
Smith  G Jones	CID C: 106	CNAME  COMPUTER NETWORKS  M  COMPUTER NETWORKS  F  103	CRED	IT  4 4 4	PID 1005 1006	PNAME Indiana Martinez
Smith  G Jones Wales	CID C: 106 106 106	COMPUTER NETWORKS  M COMPUTER NETWORKS  F 103 COMPUTER NETWORKS  M 105 COMPUTER NETWORKS  M 105	CRED	IT 4 4 4 4	PID 1005 1006 1007 1008	PNAME Indiana Martinez Gaurav Chaitreya
Smith  G Jones Wales Kedia	CID C:  106 106 106 106 107	CNAME  COMPUTER NETWORKS  M  COMPUTER NETWORKS  F  COMPUTER NETWORKS  M  105  COMPUTER NETWORKS  M  105  COMPUTER NETWORKS  M  101  ENVIRONMENTAL SCIE  M	CRED  CRED  CRED  ENCE	IT  4 4 4 4 3	PID 1005 1006 1007 1008 1001	PNAME Indiana Martinez Gaurav Chaitreya Albert
Smith  G Jones Wales Kedia Bhelka:	CID C:  106 106 106 106 107	CNAME  COMPUTER NETWORKS  M  COMPUTER NETWORKS  F  103  COMPUTER NETWORKS  M  105  COMPUTER NETWORKS  M  105  COMPUTER NETWORKS  M  101  ENVIRONMENTAL SCIE  M  ENVIRONMENTAL SCIE	CRED  CRED	IT  4 4 4 4 3	PID 1005 1006 1007 1008 1001	PNAME Indiana Martinez Gaurav Chaitreya
Smith  G Jones Wales Kedia Bhelka: DCosta Silva	CID C: 106 106 106 106 107 107	CNAME  COMPUTER NETWORKS  M  COMPUTER NETWORKS  F  COMPUTER NETWORKS  M  105  COMPUTER NETWORKS  M  101  ENVIRONMENTAL SCIE  M  ENVIRONMENTAL SCIE	CRED  CRED	1T 4 4 4 4 3 3	PID 1005 1006 1007 1008 1001 1002	PNAME Indiana Martinez Gaurav Chaitreya Albert
Smith  G Jones Wales Kedia Bhelka: DCosta Silva Anderso	CID C: 106 106 106 107 107	CNAME  COMPUTER NETWORKS  M  COMPUTER NETWORKS  F 103  COMPUTER NETWORKS  M 105  COMPUTER NETWORKS  M 105  ENVIRONMENTAL SCIE  M  ENVIRONMENTAL SCIE  F	CRED  CRED	1T 4 4 4 3 3 3	PID 1005 1006 1007 1008 1001 1002 1003	PNAME Indiana Martinez Gaurav Chaitreya Albert Foster
Smith  G Jones Wales Kedia Bhelka: DCosta Silva	CID C:  106 106 106 107 107	CNAME  COMPUTER NETWORKS  M  COMPUTER NETWORKS  F 103  COMPUTER NETWORKS  M 105  COMPUTER NETWORKS  M 105  ENVIRONMENTAL SCIE  M  ENVIRONMENTAL SCIE  F	CRED  CRED	1T 4 4 4 3 3 3 3	PID 1005 1006 1007 1008 1001 1002 1003 1004	PNAME Indiana Martinez Gaurav Chaitreya Albert Foster Maria
Smith  G Jones Wales Kedia Bhelka: DCosta Silva Anderso	CID C: 106 106 106 107 107 107	CNAME  COMPUTER NETWORKS  M  COMPUTER NETWORKS  F  103  COMPUTER NETWORKS  M  105  COMPUTER NETWORKS  M  101  ENVIRONMENTAL SCIE  M  ENVIRONMENTAL SCIE  F	CRED  CRED	1T 4 4 4 3 3 3 3 3	PID 1005 1006 1007 1008 1001 1002 1003 1004 1005	PNAME Indiana Martinez Gaurav Chaitreya Albert Foster Maria Pamela Indiana
Smith  G Jones Wales Kedia Bhelka: DCosta Silva Anderse Smith	CID C: 106 106 106 107 107 107	CNAME  COMPUTER NETWORKS  M  COMPUTER NETWORKS  F  103  COMPUTER NETWORKS  M  105  COMPUTER NETWORKS  M  101  ENVIRONMENTAL SCIE  M  ENVIRONMENTAL SCIE  F  ENVIRONMENTAL SCIE  E	CRED  CRED	1T 4 4 4 3 3 3 3 3 3	PID 1005 1006 1007 1008 1001 1002 1003 1004 1005	PNAME Indiana Martinez Gaurav Chaitreya Albert Foster Maria Pamela
Smith  G Jones Wales Kedia Bhelka: DCosta Silva Anderse Smith Jones	CID C: 106 106 106 107 107 107 107	CNAME  COMPUTER NETWORKS  M  COMPUTER NETWORKS  F  103  COMPUTER NETWORKS  M  105  COMPUTER NETWORKS  M  101  ENVIRONMENTAL SCIE  M  ENVIRONMENTAL SCIE  F  ENVIRONMENTAL SCIE  M  ENVIRONMENTAL SCIE  ENVIRONMENTAL SCIE	CRED  CRED	4 4 4 3 3 3 3 3	PID 1005 1006 1007 1008 1001 1002 1003 1004 1005 1006	PNAME Indiana Martinez Gaurav Chaitreya Albert Foster Maria Pamela Indiana

G	CID CNAME CID	CREDIT	PID	PNAME
	107 ENVIRONMENTAL SCIENCE M 101	3	1008	Chaitreya
56 rows	s selected.			
	CLECT *			
2 F1	ROM COURSE, PARTICIPANT;			
G	CID CNAME CID	CREDIT	PID	PNAME
	101		1001	
DCosta	101 DATABASE MANAGEMENT SYSTEMS M 101	5	1001	Albert
	101 DATABASE MANAGEMENT SYSTEMS	5	1002	Foster
	101 DATABASE MANAGEMENT SYSTEMS	5	1003	Maria
	on F 102 101 DATABASE MANAGEMENT SYSTEMS	5	1004	Pamela
Smith	F 101 101 DATABASE MANAGEMENT SYSTEMS	5	1005	Indiana
Jones	M 101 DATABASE MANAGEMENT SYSTEMS	5	1006	Martinez
Wales		5		
Kedia	M 105			Gaurav
Bhelka:	101 DATABASE MANAGEMENT SYSTEMS M 101	5	1008	Chaitreya
DCosta	102 OBBJECT ORIENTED PROGRAMMING M 101	5	1001	Albert
	102 OBBJECT ORIENTED PROGRAMMING M 102	5	1002	Foster
	102 OBBJECT ORIENTED PROGRAMMING	5	1003	Maria
Anders				
	CID CNAME CID	CREDIT		PNAME
Smith	102 OBBJECT ORIENTED PROGRAMMING F 101	5	1004	Pamela
	102 OBBJECT ORIENTED PROGRAMMING	5	1005	Indiana
Jones	M 102 OBBJECT ORIENTED PROGRAMMING	5	1006	Martinez
Wales	F 103 102 OBBJECT ORIENTED PROGRAMMING	5	1007	Gaurav
Kedia	M 105 102 OBBJECT ORIENTED PROGRAMMING	5		Chaitreya
Bhelka:	M 101 103 OPERARING SYSTEM	4		Albert
DCosta	M 101	_		
Silva	103 OPERARING SYSTEM M 102	4	1002	Foster

103 OPERARING SYSTEM	4	1003 Maria
Anderson F 102 103 OPERARING SYSTEM	4	1004 Pamela
Smith F 101 103 OPERARING SYSTEM	4	1005 Indiana
Jones M 103 OPERARING SYSTEM	4	1006 Martinez
Wales F 103		
CID CNAME G CID	CREDIT	PID PNAME
103 OPERARING SYSTEM	4	1007 Gaurav
Kedia M 105 103 OPERARING SYSTEM	4	1008 Chaitreya
Bhelkar M 101 104 MATHEMATICS	5	1001 Albert
DCosta M 101 104 MATHEMATICS	5	1002 Foster
Silva M 102 104 MATHEMATICS	5	1003 Maria
Anderson F 102 104 MATHEMATICS	5	1004 Pamela
Smith F 101 104 MATHEMATICS	5	1005 Indiana
Jones M		
104 MATHEMATICS Wales F 103	5	1006 Martinez
104 MATHEMATICS  Kedia M 105 104 MATHEMATICS	5	1007 Gaurav
Rhelkar M 101	5	1008 Chaitreya
105 DAA DCosta M 101	5	1001 Albert
CID CNAME	CDEDIT	PID PNAME
G CID	CKEDII	FID ENAME
105 DAA Silva M 102	5	1002 Foster
105 DAA Anderson F 102	5	1003 Maria
105 DAA Smith F 101	5	1004 Pamela
105 DAA Jones M	5	1005 Indiana
105 DAA	5	1006 Martinez
Wales F 103	5	1007 Gaurav
Kedia M 105 105 DAA	5	1008 Chaitreya
Bhelkar M 101 106 COMPUTER NETWORKS	4	1001 Albert
DCosta M 101 106 COMPUTER NETWORKS	4	1002 Foster
Silva M 102	-	

	COMPUTER NETWORK		4	1003	Maria
	F COMPUTER NETWORK F		4	1004	Pamela
CID G CI	CNAME		CREDIT	PID	PNAME
	COMPUTER NETWORK	KS .	4	1005	Indiana
	COMPUTER NETWORK F 1		4	1006	Martinez
106	COMPUTER NETWORK M 1	KS	4	1007	Gaurav
106	COMPUTER NETWORK M 10	KS	4	1008	Chaitreya
107	ENVIRONMENTAL SC	CIENCE	3	1001	Albert
107	M ENVIRONMENTAL SC M	CIENCE	3	1002	Foster
107	ENVIRONMENTAL SC F	CIENCE	3	1003	Maria
107	ENVIRONMENTAL SC F	CIENCE	3	1004	Pamela
107	ENVIRONMENTAL SC		3	1005	Indiana
107	M ENVIRONMENTAL SC		3	1006	Martinez
107	F 1 ENVIRONMENTAL SC M 1	CIENCE	3	1007	Gaurav
CID G CI	CNAME		CREDIT	PID	PNAME
107	ENVIRONMENTAL SC M 10	CIENCE	3	1008	Chaitreya

#### SQL> SELECT \*

- 2 FROM COURSE C1 JOIN PARTICIPANT P 3 ON C1.CID = P.PID;

no rows selected

## SQL> SELECT \*

- 2 FROM COURSE C, PARTICIPANT P
- 3 WHERE C.CID = P.PID;

#### no rows selected

SQL> SELEDCT \* FROM COURSE NATURAL JOIN PARTICIPANT; SP2-0734: unknown command beginning "SELEDCT \* ..." - rest of line ignored.

# SQL> SELECT \* FROM COURSE NATURAL JOIN PARTICIPANT;

G	CID CNAME		PID PNAME
DCosta		5	1001 Albert
	101 DATABASE MANAGEMENT SYSTEMS	5	1004 Pamela
Smith	101 DATABASE MANAGEMENT SYSTEMS	5	1008 Chaitreya
	r M 102 OBBJECT ORIENTED PROGRAMMING	5	1003 Maria
Anderso	on F 102 OBBJECT ORIENTED PROGRAMMING	5	1002 Foster
Silva	M 103 OPERARING SYSTEM	4	
Wales	F		
Kedia	105 DAA M	5	1007 Gaurav
7 rows	selected.		
2 FI	ELECT * ROM COURSE C LEFT OUTER JOIN PARTIC N C.CID = P.PID;	IPANT P	
	CID CNAME CID	CREDIT	PID PNAME
	101 DATABASE MANAGEMENT SYSTEMS 102 OBBJECT ORIENTED PROGRAMMING 103 OPERARING SYSTEM 104 MATHEMATICS 105 DAA 106 COMPUTER NETWORKS 107 ENVIRONMENTAL SCIENCE	5 5 4 5 5 4 3	
7 rows	selected.		
2 FI	ELECT * ROM COURSE C, PARTICIPANT P HERE C.CID=P.PID(+);		
G 	CID CNAME CID	CREDIT	PID PNAME
	101 DATABASE MANAGEMENT SYSTEMS 102 OBBJECT ORIENTED PROGRAMMING 103 OPERARING SYSTEM 104 MATHEMATICS	5 5 4 5	
	105 DAA 106 COMPUTER NETWORKS 107 ENVIRONMENTAL SCIENCE	5 4 3	

#### SQL> SELECT \*

- 2 FROM COURSE C RIGHT OUTER JOIN PARTICIPANT P
- 3 ON C.CID = P.PID;

CID CNAM	ΜE		CREDIT	PID PNAME
G CID				
		101		1001 Albert
DCosta	М	101		1002 Foster
Silva	M	102		1000 1
Anderson	F	102		1003 Maria
	_			1004 Pamela
Smith	F	101		1005 Indiana
Jones	М			
Wales	F	103		1006 Martinez
				1007 Gaurav
Kedia	M	105		1008 Chaitreya
Bhelkar	M	101		

#### 8 rows selected.

# SQL> SELECT \*

- 2 FROM COURSE C, PARTICIPANT P 3 WHERE C.CID (+) = P.PID;

G	CID CNAM	Ε		CREDIT	PID	PNAME
		 	·			
					1001	Albert
DCosta		M	101		1002	Foster
Silva		M	102		1002	100001
Anders	on	F	102		1003	Maria
Anders	OII	Г	102		1004	Pamela
Smith		F	101		1005	T - 1'
Jones		M			1005	Indiana
					1006	Martinez
Wales		F	103		1007	C
Kedia		M	105		1007	Gaurav
D1 11			1.0.1		1008	Chaitreya
Bhelka 8 rows	r selected	M •	101			

# SQL> SELECT \*

- 2 FROM COURSE C FULL OUTER JOIN PARTICIPANT P
- 3 ON C.CID=P.PID;

G	CID CNAME CID				CREDIT	PID	PNAME
						1001	Albert
DCosta		M	101			1002	Foster
Silva		M	102			1003	Maria
Anders	on	F	102			1004	Pamela
Smith		F	101				Indiana
Jones		M					
Wales	F		103			1006	Martinez
Kedia	М		105			1007	Gaurav
	N/					1008	Chaitreya
Bheika	r M 103 OPERARI				4		
	101 DATABAS 104 MATHEMA		MENT SYSTEMS		5 5		
	CID CNAME				CREDIT	PID	PNAME
G CID							
	106 COMPUTE 102 OBBJECT		KS D PROGRAMMING	;	4 5		
105 DAA 107 ENVIRONMENTAL SCIENCE				5 3			
15 row	s selected.				_		
	ELECT * ROM COURSE C	, PARTIC	IPANT P				
3 W	HERE C.CID ( C.CID (+) =	+) = P.P	ID (+);				
	*	·	,				
	at line 3: 468: a predi	cate may	reference on	ly one	outer-jo	ined table	Э
SQL> S	SQL> SELECT * FROM COURSE						
2 U	NION		DANT •				
SELECT	* FROM COUR		L VIN T '				
* ERROR	at line 1:						
ORA-01	789: query b	lock has	incorrect nu	mber o	f result	columns	
SQL> S	POOL OFF;						