

## Lab report 1

Surendra Baskey(111601027)

```
root@dbms-VirtualBox:/home/dbms# sudo mysql -u root -p university -h localhost < create_university_class2.sql
Enter password:
root@dbms-VirtualBox:/home/dbms#
```

```
root@dbms-VirtualBox:/home/dbms# sudo mysql -u root -p university -h localhost < data_university_class2.sql
Enter password:
root@dbms-VirtualBox:/home/dbms#
```

2.

```
MariaDB [university]> create table takes( ID varchar(5) not null, course_id varchar(8) not null, sec_id varchar(8) not null, semester varchar(6) not null, year decimal(4,0) not null, grade varchar(2) default null, primary key(ID,course_id), constraint section_fbk foreign key(course_id,sec_id,semester,year) references section(course_id,sec_id,semester,year)ON DELETE CASCADE, constraint student_fbk foreign key(ID) references student(ID));
Query OK, 0 rows affected (0.02 sec)
```

```
MariaDB [university]> desc takes;
```

Field	Type	Null	Key	Default	Extra
ID	varchar(5)	NO	PRI	NULL	
course_id	varchar(8)	NO	PRI	NULL	
sec_id	varchar(8)	NO		NULL	
semester	varchar(6)	NO		NULL	
year	decimal(4,0)	NO		NULL	
grade	varchar(2)	YES		NULL	

```
6 rows in set (0.00 sec)
```

```
MariaDB [university]>
```

```

MariaDB [university]> create table teaches (ID varchar(5) not null, course_id varchar(8) not null, sec_id varchar(8) not null, semester varchar(6) not null, year decimal(4,0) not null, primary key (ID,course_id,sec_id,semester,year), constraint instructor_fbk foreign key(ID) references instructor(ID) ON DELETE RESTRICT, constraint section_fbk1 foreign key(course_id,sec_id,semester,year) references section(course_id,sec_id,semester,year) ON DELETE CASCADE);
Query OK, 0 rows affected (0.01 sec)

```

```

MariaDB [university]> desc teaches;

```

Field	Type	Null	Key	Default	Extra
ID	varchar(5)	NO	PRI	NULL	
course_id	varchar(8)	NO	PRI	NULL	
sec_id	varchar(8)	NO	PRI	NULL	
semester	varchar(6)	NO	PRI	NULL	
year	decimal(4,0)	NO	PRI	NULL	

```

5 rows in set (0.00 sec)

```

```

MariaDB [university]>

```

```

insert_into takes(ID,course_id,sec_id,semester,year,grade)
values
('00128', 'CS-101', '1', 'Fall', '2009', 'A'),
('00128', 'CS-347', '1', 'Fall', '2009', 'A-'),
('12345', 'CS-101', '1', 'Fall', '2009', 'C'),
('12345', 'CS-190', '2', 'Spring', '2009', 'A'),
('12345', 'CS-315', '1', 'Spring', '2010', 'S'),
('12345', 'CS-347', '1', 'Fall', '2009', 'A'),
('19991', 'HIS-351', '1', 'Spring', '2010', 'B'),
('23121', 'FIN-201', '1', 'Spring', '2010', 'C+');

```

```

root@dbms-VirtualBox:/home/dbms# sudo mysql -u root -p university -h localhost <insert_takes.sql
Enter password:
root@dbms-VirtualBox:/home/dbms#

```

```
MariaDB [university]> select *from takes;
```

ID	course_id	sec_id	semester	year	grade
00128	CS-101	1	Fall	2009	A
00128	CS-347	1	Fall	2009	A-
12345	CS-101	1	Fall	2009	C
12345	CS-190	2	Spring	2009	A
12345	CS-315	1	Spring	2010	S
12345	CS-347	1	Fall	2009	A
19991	HIS-351	1	Spring	2010	B
23121	FIN-201	1	Spring	2010	C+

8 rows in set (0.00 sec)

Open ▾



insert\_teaches.sql

```
insert into teaches(ID,course_id,sec_id,semester,year)
values
```

```
('10101', 'CS-347', '1', 'Fall', '2009'),
('12121', 'FIN-201', '1', 'Spring', '2010'),
('22222', 'PHY-101', '1', 'Fall', '2009'),
('32343', 'HIS-351', '1', 'Spring', '2010'),
('45565', 'CS-101', '1', 'Spring', '2010'),
('45565', 'CS-319', '1', 'Spring', '2010'),
('76766', 'BIO-101', '1', 'Summer', '2009'),
('76766', 'BIO-301', '1', 'Summer', '2010'),
('83821', 'CS-190', '1', 'Spring', '2009'),
('83821', 'CS-190', '2', 'Spring', '2009'),
('83821', 'CS-319', '2', 'Spring', '2010'),
('98345', 'EE-181', '1', 'Spring', '2009');
```

```

MariaDB [university]> select *from teaches;
+-----+-----+-----+-----+-----+
| ID    | course_id | sec_id | semester | year |
+-----+-----+-----+-----+-----+
| 10101 | CS-347    | 1      | Fall     | 2009 |
| 12121 | FIN-201   | 1      | Spring   | 2010 |
| 22222 | PHY-101   | 1      | Fall     | 2009 |
| 32343 | HIS-351   | 1      | Spring   | 2010 |
| 45565 | CS-101    | 1      | Spring   | 2010 |
| 45565 | CS-319    | 1      | Spring   | 2010 |
| 76766 | BIO-101   | 1      | Summer   | 2009 |
| 76766 | BIO-301   | 1      | Summer   | 2010 |
| 83821 | CS-190    | 1      | Spring   | 2009 |
| 83821 | CS-190    | 2      | Spring   | 2009 |
| 83821 | CS-319    | 2      | Spring   | 2010 |
| 98345 | EE-181    | 1      | Spring   | 2009 |
+-----+-----+-----+-----+-----+

```

5.

```

MariaDB [university]> Select 123;
+-----+
| 123 |
+-----+
| 123 |
+-----+
1 row in set (0.00 sec)

MariaDB [university]> Select ID from takes where year=2009;
+-----+
| ID      |
+-----+
| 00128 |
| 12345 |
| 12345 |
| 00128 |
| 12345 |
+-----+
5 rows in set (0.00 sec)

MariaDB [university]> Select count(ID) from takes;
+-----+
| count(ID) |
+-----+
|          8 |
+-----+
1 row in set (0.00 sec)

MariaDB [university]> 

```

6.



```
MariaDB [university]> select count(dept_name) from department;
```

count(dept_name)
7

```
1 row in set (0.00 sec)
```

  

```
MariaDB [university]> select *from department order by budget desc;
```

dept_name	building	budget
Finance	Painter	120000.00
Comp. Sci.	Taylor	100000.00
Biology	Watson	90000.00
Elec. Eng.	Taylor	85000.00
Music	Packard	80000.00
Physics	Watson	70000.00
History	Painter	50000.00

```
7 rows in set (0.00 sec)
```

  

```
MariaDB [university]> 
```

```
MariaDB [university]> select *from takes order by field(grade,"S","A+","A","A-","B+","B","B-","C+","C","C-");
```

ID	course_id	sec_id	semester	year	grade
12345	CS-315	1	Spring	2010	S
00128	CS-101	1	Fall	2009	A
12345	CS-190	2	Spring	2009	A
12345	CS-347	1	Fall	2009	A
00128	CS-347	1	Fall	2009	A-
19991	HIS-351	1	Spring	2010	B
23121	FIN-201	1	Spring	2010	C+
12345	CS-101	1	Fall	2009	C

```
8 rows in set (0.00 sec)
```

  

```
MariaDB [university]> 
```

```
MariaDB [university]> select distinct T.ID from takes as T,  
-> takes as D where T.ID=D.ID and(T.year=2009 and D.year=2010);
```

```
+-----+  
| ID    |  
+-----+  
| 12345 |  
+-----+
```

```
1 row in set (0.00 sec)
```

```
MariaDB [university]> 
```

```
MariaDB [university]> select dept_name from department where budget>(select avg(budget) from department);
```

```
+-----+  
| dept_name |  
+-----+  
| Biology   |  
| Comp. Sci. |  
| Finance   |  
+-----+
```

```
3 rows in set (0.00 sec)
```

```
MariaDB [university]> 
```

```
MariaDB [university]> select *from course where course_id=(select course_id from  
teaches where ID=(select ID From instructor where name="Srinivasan"));
```

```
+-----+-----+-----+-----+  
| course_id | title                               | dept_name | credits |  
+-----+-----+-----+-----+  
| CS-347    | Database System Concepts | Comp. Sci. | 3      |  
+-----+-----+-----+-----+
```

```
1 row in set (0.00 sec)
```

```
MariaDB [university]> 
```

```
MariaDB [university]> select *from instructor where ID in(select distinct ID fro  
n teaches where year=2009);
```

```
+-----+-----+-----+-----+  
| ID    | name       | dept_name | salary |  
+-----+-----+-----+-----+  
| 10101 | Srinivasan | Comp. Sci. | 65000.00 |  
| 22222 | Einstein   | Physics   | 95000.00 |  
| 76766 | Crick      | Biology    | 72000.00 |  
| 83821 | Brandt     | Comp. Sci. | 92000.00 |  
| 98345 | Kim        | Elec. Eng. | 80000.00 |  
+-----+-----+-----+-----+
```

```
5 rows in set (0.00 sec)
```

```
MariaDB [university]> 
```

```
MariaDB [university]> select *from instructor where (ID,1) in (select ID,count(I
D) from teaches group by ID);
```

ID	name	dept_name	salary
10101	Srinivasan	Comp. Sci.	65000.00
12121	Wu	Finance	90000.00
22222	Einstein	Physics	95000.00
32343	El Said	History	60000.00
98345	Kim	Elec. Eng.	80000.00

```
5 rows in set (0.00 sec)
```

```
MariaDB [university]> 
```

```
MariaDB [university]> select name from instructor
-> where name like "C%";
```

name
Califieri
Crick

```
2 rows in set (0.00 sec)
```

```
MariaDB [university]> 
```

```
MariaDB [university]> select name from instructor where instructor.salary between 60000 and 80000;
```

name
Srinivasan
El Said
Katz
Califieri
Singh
Crick
Kim

```
7 rows in set (0.00 sec)
```

```
MariaDB [university]> 
```



```

MariaDB [university]> update instructor
    -> set name="Sing"
    -> where name="Singh";
Query OK, 1 row affected (0.02 sec)
Rows matched: 1  Changed: 1  Warnings: 0

MariaDB [university]> select *from instructor;
+-----+-----+-----+-----+
| ID    | name      | dept_name | salary |
+-----+-----+-----+-----+
| 10101 | Srinivasan | Comp. Sci. | 65000.00 |
| 12121 | Wu         | Finance   | 90000.00 |
| 15151 | Mozart     | Music      | 40000.00 |
| 22222 | Einstein   | Physics    | 95000.00 |
| 32343 | El Said    | History    | 60000.00 |
| 33456 | Gold       | Physics    | 87000.00 |
| 45565 | Katz        | Comp. Sci. | 75000.00 |
| 58583 | Califieri  | History    | 62000.00 |
| 76543 | Sing       | Finance    | 80000.00 |
| 76766 | Crick      | Biology    | 72000.00 |
| 83821 | Brandt     | Comp. Sci. | 92000.00 |
| 98345 | Kim        | Elec. Eng. | 80000.00 |
+-----+-----+-----+-----+
12 rows in set (0.00 sec)

MariaDB [university]> 

```

```

MariaDB [university]> DELETE FROM COURSE WHERE dept_name="Biology";
ERROR 1146 (42S02): Table 'university.COURSE' doesn't exist
MariaDB [university]> DELETE FROM course WHERE dept_name="Biology";
ERROR 1451 (23000): Cannot delete or update a parent row: a foreign key constraint fails (`university`.`prereq`, CONSTRAINT `prereq_ibfk_2` FOREIGN KEY (`prereq_id`) REFERENCES `course` (`course_id`))
MariaDB [university]> 

```