

CS313 : DataBases and Information Systems Lab

Lab Assignment 4

Sourabh Bhosale

200010004

September 13, 2022

1 Creating user called universityDB0004

1.1 Query

```
CREATE USER 'universityDB0004'@'localhost' IDENTIFIED BY 'password';  
GRANT ALL PRIVILEGES ON university.* TO 'universityDB0004'@'localhost';
```

1.2 Result

```
[mysql> SELECT user FROM mysql.user;  
+-----+  
| user |  
+-----+  
| root |  
| root |  
+-----+  
2 rows in set (0.00 sec)  
  
mysql> CREATE USER 'universityDB0004'@'localhost' IDENTIFIED BY 'password';  
Query OK, 0 rows affected (0.00 sec)  
  
mysql> GRANT ALL PRIVILEGES ON university.* TO 'universityDB0004'@'localhost';  
Query OK, 0 rows affected (0.00 sec)  
  
[mysql> SELECT user FROM mysql.user;  
+-----+  
| user |  
+-----+  
| root |  
| root |  
| universityDB0004 |  
+-----+  
3 rows in set (0.00 sec)
```

2 Creating database called university

2.1 Query

```
CREATE DATABASE university;  
SHOW DATABASES;
```

2.2 Result

```
mysql> SHOW DATABASES;  
+-----+  
| Database |  
+-----+  
| information_schema |  
| mydb |  
| mysql |  
| performance_schema |  
| phpmyadmin |  
| test |  
+-----+  
6 rows in set (0.00 sec)  
  
mysql> CREATE DATABASE university;  
Query OK, 1 row affected (0.00 sec)  
  
mysql> SHOW DATABASES;  
+-----+  
| Database |  
+-----+  
| information_schema |  
| mydb |  
| mysql |  
| performance_schema |  
| phpmyadmin |  
| test |  
| university |  
+-----+  
7 rows in set (0.00 sec)
```

3 Connecting to database called university

3.1 Query

```
USE university;  
SELECT DATABASE(); -- to see selected database.
```

3.2 Result

```
[mysql> USE university;  
Database changed  
[mysql> SELECT DATABASE();  
+-----+  
| DATABASE() |  
+-----+  
| university |  
+-----+  
1 row in set (0.00 sec)
```

4 Creating tables in the database using DDL.sql file

4.1 Query

```
source /Users/apple/Desktop/5th sem/CS313 DBIS lab/assigns/assign4/DDL.sql;  
show tables;
```

4.2 Result

```
mysql> source /Users/apple/Desktop/5th sem/CS313 DBIS lab/assigns/assign4/DDL.sql;  
Query OK, 0 rows affected (0.06 sec)  
  
Query OK, 0 rows affected (0.03 sec)  
  
Query OK, 0 rows affected (0.03 sec)  
  
Query OK, 0 rows affected (0.03 sec)  
  
Query OK, 0 rows affected (0.03 sec)  
  
Query OK, 0 rows affected (0.03 sec)  
  
Query OK, 0 rows affected (0.03 sec)  
  
Query OK, 0 rows affected (0.03 sec)  
  
Query OK, 0 rows affected (0.02 sec)  
  
Query OK, 0 rows affected (0.03 sec)  
  
mysql> SHOW TABLES;  
+-----+  
| Tables_in_university |  
+-----+  
| advisor               |  
| classroom             |  
| course                |  
| department            |  
| instructor            |  
| prereq                |  
| section               |  
| student               |  
| takes                 |  
| teaches               |  
| time_slot             |  
+-----+  
11 rows in set (0.00 sec)
```

5 Loading the data into tables using insert.sql

5.1 Query

```
source /Users/apple/Desktop/5th sem/CS313 DBIS lab  
/assigns/assign4/InsertValues.sql
```

5.2 Result

```
mysql> source /Users/apple/Desktop/5th sem/CS313 DBIS lab/assigns/assign4/InsertValues.sql  
Query OK, 0 rows affected (0.01 sec)  
  
Query OK, 0 rows affected (0.00 sec)  
Query OK, 0 rows affected (0.00 sec)  
Query OK, 0 rows affected (0.00 sec)  
Query OK, 0 rows affected (0.00 sec)  
Query OK, 0 rows affected (0.00 sec)  
Query OK, 0 rows affected (0.01 sec)  
Query OK, 0 rows affected (0.00 sec)  
Query OK, 0 rows affected (0.00 sec)  
Query OK, 0 rows affected (0.00 sec)  
Query OK, 0 rows affected (0.00 sec)  
Query OK, 1 row affected (0.00 sec)  
Query OK, 1 row affected (0.01 sec)  
Query OK, 1 row affected (0.00 sec)  
Query OK, 1 row affected (0.00 sec)  
Query OK, 1 row affected (0.00 sec)  
Query OK, 1 row affected (0.01 sec)  
Query OK, 1 row affected (0.00 sec)  
Query OK, 1 row affected (0.00 sec)  
Query OK, 1 row affected (0.00 sec)  
Query OK, 1 row affected (0.00 sec)  
Query OK, 1 row affected (0.00 sec)  
Query OK, 1 row affected (0.00 sec)  
Query OK, 1 row affected (0.00 sec)  
Query OK, 1 row affected (0.00 sec)
```

6 Details of all the tables using information_schema

6.1 Query

```
SELECT table_name, column_name, data_type
FROM information_schema.columns
WHERE table_name = 'student' || table_name = 'advisor' ||
      table_name = 'classroom' || table_name = 'course' ||
      table_name = 'department' || table_name = 'instructor' ||
      table_name = 'prereq' || table_name = 'section' ||
      table_name = 'takes' || table_name = 'teaches' ||
      table_name = 'time_slot';
```

6.2 Result

```
mysql> SELECT table_name, column_name, data_type
-> FROM information_schema.columns
-> WHERE table_name = 'student' || table_name = 'advisor' || table_name = 'classroom' || table_name = 'course' || table_name = 'department' || table_name = 'instructor' || table_name = 'prereq' || table_name = 'section' || table_name = 'takes' || table_name = 'teaches' || table_name = 'time_slot';
```

table_name	column_name	data_type
advisor	s_ID	varchar
advisor	i_ID	varchar
classroom	building	varchar
classroom	room_number	varchar
classroom	capacity	decimal
course	course_id	varchar
course	title	varchar
course	dept_name	varchar
course	credits	decimal
department	dept_name	varchar
department	building	varchar
department	budget	decimal
instructor	ID	varchar
instructor	name	varchar
instructor	dept_name	varchar
instructor	salary	decimal
prereq	course_id	varchar
prereq	prereq_id	varchar
section	course_id	varchar
section	sec_id	varchar
section	semester	varchar
section	year	decimal
section	building	varchar
section	room_number	varchar
section	time_slot_id	varchar
student	ID	varchar
student	name	varchar
student	dept_name	varchar
student	tot_cred	decimal
takes	ID	varchar
takes	course_id	varchar
takes	sec_id	varchar
takes	semester	varchar
takes	year	decimal
takes	grade	varchar
teaches	ID	varchar
teaches	course_id	varchar
teaches	sec_id	varchar
teaches	semester	varchar
teaches	year	decimal
time_slot	time_slot_id	varchar
time_slot	day	varchar
time_slot	start_hr	decimal
time_slot	start_min	decimal
time_slot	end_hr	decimal
time_slot	end_min	decimal

```
46 rows in set (0.01 sec)
```

7 Operations using *phpMyAdmin* tool

7.1 Query

```
INSERT INTO student
  VALUES('00002', 'Sourabh', 'Comp. Sci.', 125);
INSERT INTO course
  VALUES('CS-301', 'Computer Architecture', 'Comp. Sci.', 6);
INSERT INTO instructor
  VALUES('10001', 'Rajshekhar K', 'Comp. Sci.', 70000);
INSERT INTO teaches
  VALUES('10001', 'CS-301', '2', 'Spring', 2020);
INSERT INTO prereq
  VALUES('CS-301', 'CS-101');
INSERT INTO section
  VALUES('CS-301', '2', 'Spring', 2020, 'Watson', '120', 'B');
INSERT INTO classroom
  VALUES('Newton', '150', 100);
INSERT INTO department
  VALUES('MMAE', 'Newton', 95000);
INSERT INTO takes
  VALUES('00002', 'CS-301', '2', 'Spring', 2020, 'A+');
INSERT INTO advisor
  VALUES('00002', '10001');
INSERT INTO time_slot
  VALUES('B', 'M', 8, 30, 9, 30);
SELECT * FROM student;
SELECT * FROM course;
SELECT * FROM instructor;
SELECT * FROM teaches;
SELECT * FROM prereq;
SELECT * FROM section;
SELECT * FROM classroom;
SELECT * FROM department;
SELECT * FROM takes;
SELECT * FROM advisor;
SELECT * FROM time_slot;
```


7.2 Results

phpMyAdmin

Server: localhost - Database: university

Structure SQL Search Query Export Import Operations Privileges Routines Events Triggers Tracking

Filters

Containing the word:







































Table	Action	Rows	Type	Collation	Size	Overhead
<input type="checkbox"/> advisor		9	InnoDB	utf8mb4_general_ci	32.0 KiB	-
<input type="checkbox"/> classroom		5	InnoDB	utf8mb4_general_ci	16.0 KiB	-
<input type="checkbox"/> course		13	InnoDB	utf8mb4_general_ci	32.0 KiB	-
<input type="checkbox"/> department		7	InnoDB	utf8mb4_general_ci	16.0 KiB	-
<input type="checkbox"/> instructor		12	InnoDB	utf8mb4_general_ci	32.0 KiB	-
<input type="checkbox"/> prereq		7	InnoDB	utf8mb4_general_ci	32.0 KiB	-
<input type="checkbox"/> section		15	InnoDB	utf8mb4_general_ci	32.0 KiB	-
<input type="checkbox"/> student		13	InnoDB	utf8mb4_general_ci	32.0 KiB	-
<input type="checkbox"/> takes		22	InnoDB	utf8mb4_general_ci	32.0 KiB	-
<input type="checkbox"/> teaches		15	InnoDB	utf8mb4_general_ci	32.0 KiB	-
<input type="checkbox"/> time_slot		20	InnoDB	utf8mb4_general_ci	16.0 KiB	-
11 tables	Sum	138	InnoDB	utf8mb4_general_ci	304.0 KiB	0 B

		ID	name	dept_name	tot_cred
<input type="checkbox"/>		00002	Sourabh	Comp. Sci.	125
<input type="checkbox"/>		00128	Zhang	Comp. Sci.	102
<input type="checkbox"/>		12345	Shankar	Comp. Sci.	32
<input type="checkbox"/>		19991	Brandt	History	80
<input type="checkbox"/>		23121	Chavez	Finance	110
<input type="checkbox"/>		44553	Peltier	Physics	56
<input type="checkbox"/>		45678	Levy	Physics	46
<input type="checkbox"/>		54321	Williams	Comp. Sci.	54
<input type="checkbox"/>		55739	Sanchez	Music	38
<input type="checkbox"/>		70557	Snow	Physics	0
<input type="checkbox"/>		76543	Brown	Comp. Sci.	58
<input type="checkbox"/>		76653	Aoi	Elec. Eng.	60
<input type="checkbox"/>		98765	Bourikas	Elec. Eng.	98
<input type="checkbox"/>		98988	Tanaka	Biology	120

☐ Check all With selected: Edit Copy Delete Export

<div><div><div><div></div></div></div><div><div></div></div></div>			course_id	title	dept_name	credits
<div><div><div><div></div></div></div><div><div></div></div></div>	<div><div><div><div></div></div></div><div><div></div></div></div>	<div><div><div><div></div></div></div><div><div></div></div></div>	BIO-101	Intro. to Biology	Biology	4
<div><div><div><div></div></div></div><div><div></div></div></div>	<div><div><div><div></div></div></div><div><div></div></div></div>	<div><div><div><div></div></div></div><div><div></div></div></div>	BIO-301	Genetics	Biology	4
<div><div><div><div></div></div></div><div><div></div></div></div>	<div><div><div><div></div></div></div><div><div></div></div></div>	<div><div><div><div></div></div></div><div><div></div></div></div>	BIO-399	Computational Biology	Biology	3
<div><div><div><div></div></div></div><div><div></div></div></div>	<div><div><div><div></div></div></div><div><div></div></div></div>	<div><div><div><div></div></div></div><div><div></div></div></div>	CS-101	Intro. to Computer Science	Comp. Sci.	4
<div><div><div><div></div></div></div><div><div></div></div></div>	<div><div><div><div></div></div></div><div><div></div></div></div>	<div><div><div><div></div></div></div><div><div></div></div></div>	CS-190	Game Design	Comp. Sci.	4
<div><div><div><div></div></div></div><div><div></div></div></div>	<div><div><div><div></div></div></div><div><div></div></div></div>	<div><div><div><div></div></div></div><div><div></div></div></div>	CS-301	Computer Architecture	Comp. Sci.	6
<div><div><div><div></div></div></div><div><div></div></div></div>	<div><div><div><div></div></div></div><div><div></div></div></div>	<div><div><div><div></div></div></div><div><div></div></div></div>	CS-315	Robotics	Comp. Sci.	3
<div><div><div><div></div></div></div><div><div></div></div></div>	<div><div><div><div></div></div></div><div><div></div></div></div>	<div><div><div><div></div></div></div><div><div></div></div></div>	CS-319	Image Processing	Comp. Sci.	3
<div><div><div><div></div></div></div><div><div></div></div></div>	<div><div><div><div></div></div></div><div><div></div></div></div>	<div><div><div><div></div></div></div><div><div></div></div></div>	CS-347	Database System Concepts	Comp. Sci.	3
<div><div><div><div></div></div></div><div><div></div></div></div>	<div><div><div><div></div></div></div><div><div></div></div></div>	<div><div><div><div></div></div></div><div><div></div></div></div>	EE-181	Intro. to Digital Systems	Elec. Eng.	3
<div><div><div><div></div></div></div><div><div></div></div></div>	<div><div><div><div></div></div></div><div><div></div></div></div>	<div><div><div><div></div></div></div><div><div></div></div></div>	FIN-201	Investment Banking	Finance	3
<div><div><div><div></div></div></div><div><div></div></div></div>	<div><div><div><div></div></div></div><div><div></div></div></div>	<div><div><div><div></div></div></div><div><div></div></div></div>	HIS-351	World History	History	3
<div><div><div><div></div></div></div><div><div></div></div></div>	<div><div><div><div></div></div></div><div><div></div></div></div>	<div><div><div><div></div></div></div><div><div></div></div></div>	MU-199	Music Video Production	Music	3
<div><div><div><div></div></div></div><div><div></div></div></div>	<div><div><div><div></div></div></div><div><div></div></div></div>	<div><div><div><div></div></div></div><div><div></div></div></div>	PHY-101	Physical Principles	Physics	4


☐ Check all
 With selected:
  Edit
  Copy
  Delete
  Export

<div><div><div><div></div><div></div><div></div></div></div><div></div></div>				ID	name	dept_name	salary
<input type="checkbox"/>				10001	Rajshekhar K	Comp. Sci.	70000.00
<input type="checkbox"/>				10101	Srinivasan	Comp. Sci.	65000.00
<input type="checkbox"/>				12121	Wu	Finance	90000.00
<input type="checkbox"/>				15151	Mozart	Music	40000.00
<input type="checkbox"/>				22222	Einstein	Physics	95000.00
<input type="checkbox"/>				32343	El Said	History	60000.00
<input type="checkbox"/>				33456	Gold	Physics	87000.00
<input type="checkbox"/>				45565	Katz	Comp. Sci.	75000.00
<input type="checkbox"/>				58583	Califieri	History	62000.00
<input type="checkbox"/>				76543	Singh	Finance	80000.00
<input type="checkbox"/>				76766	Crick	Biology	72000.00
<input type="checkbox"/>				83821	Brandt	Comp. Sci.	92000.00
<input type="checkbox"/>				98345	Kim	Elec. Eng.	80000.00




















































☐ Check all
 With selected:
  Edit
  Copy
  Delete
  Export






		ID	course_id	sec_id	semester	year
<input type="checkbox"/>	Edit Copy Delete	10001	CS-301	2	Spring	2020
<input type="checkbox"/>	Edit Copy Delete	10101	CS-101	1	Fall	2009
<input type="checkbox"/>	Edit Copy Delete	10101	CS-315	1	Spring	2010
<input type="checkbox"/>	Edit Copy Delete	10101	CS-347	1	Fall	2009
<input type="checkbox"/>	Edit Copy Delete	12121	FIN-201	1	Spring	2010
<input type="checkbox"/>	Edit Copy Delete	15151	MU-199	1	Spring	2010
<input type="checkbox"/>	Edit Copy Delete	22222	PHY-101	1	Fall	2009
<input type="checkbox"/>	Edit Copy Delete	32343	HIS-351	1	Spring	2010
<input type="checkbox"/>	Edit Copy Delete	45565	CS-101	1	Spring	2010
<input type="checkbox"/>	Edit Copy Delete	45565	CS-319	1	Spring	2010
<input type="checkbox"/>	Edit Copy Delete	76766	BIO-101	1	Summer	2009
<input type="checkbox"/>	Edit Copy Delete	76766	BIO-301	1	Summer	2010
<input type="checkbox"/>	Edit Copy Delete	83821	CS-190	1	Spring	2009
<input type="checkbox"/>	Edit Copy Delete	83821	CS-190	2	Spring	2009
<input type="checkbox"/>	Edit Copy Delete	83821	CS-319	2	Spring	2010
<input type="checkbox"/>	Edit Copy Delete	98345	EE-181	1	Spring	2009

☐ Check all
 With selected:
 Edit
 Copy
 Delete
 Export





























		course_id	prereq_id
<input type="checkbox"/>	Edit Copy Delete	BIO-301	BIO-101
<input type="checkbox"/>	Edit Copy Delete	BIO-399	BIO-101
<input type="checkbox"/>	Edit Copy Delete	CS-190	CS-101
<input type="checkbox"/>	Edit Copy Delete	CS-301	CS-101
<input type="checkbox"/>	Edit Copy Delete	CS-315	CS-101
<input type="checkbox"/>	Edit Copy Delete	CS-319	CS-101
<input type="checkbox"/>	Edit Copy Delete	CS-347	CS-101
<input type="checkbox"/>	Edit Copy Delete	EE-181	PHY-101

☐ Check all
 With selected:
 Edit
 Copy
 Delete
 Export

		course_id	sec_id	semester	year	building	room_number	time_slot_id
<input type="checkbox"/>				BIO-101	1	Summer	2009 Painter	514 B
<input type="checkbox"/>				BIO-301	1	Summer	2010 Painter	514 A
<input type="checkbox"/>				CS-101	1	Fall	2009 Packard	101 H
<input type="checkbox"/>				CS-101	1	Spring	2010 Packard	101 F
<input type="checkbox"/>				CS-190	1	Spring	2009 Taylor	3128 E
<input type="checkbox"/>				CS-190	2	Spring	2009 Taylor	3128 A
<input type="checkbox"/>				CS-301	2	Spring	2020 Watson	120 B
<input type="checkbox"/>				CS-315	1	Spring	2010 Watson	120 D
<input type="checkbox"/>				CS-319	1	Spring	2010 Watson	100 B
<input type="checkbox"/>				CS-319	2	Spring	2010 Taylor	3128 C
<input type="checkbox"/>				CS-347	1	Fall	2009 Taylor	3128 A
<input type="checkbox"/>				EE-181	1	Spring	2009 Taylor	3128 C
<input type="checkbox"/>				FIN-201	1	Spring	2010 Packard	101 B
<input type="checkbox"/>				HIS-351	1	Spring	2010 Painter	514 C
<input type="checkbox"/>				MU-199	1	Spring	2010 Packard	101 D
<input type="checkbox"/>				PHY-101	1	Fall	2009 Watson	100 A
































☐ Check all
 With selected:
  Edit
  Copy
  Delete
  Export

</















































<div><div><div><div></div><div></div><div></div></div></div></div>				dept_name	building	budget
<input type="checkbox"/>	 Edit	 Copy	 Delete	Biology	Watson	90000.00
<input type="checkbox"/>	 Edit	 Copy	 Delete	Comp. Sci.	Taylor	100000.00
<input type="checkbox"/>	 Edit	 Copy	 Delete	Elec. Eng.	Taylor	85000.00
<input type="checkbox"/>	 Edit	 Copy	 Delete	Finance	Painter	120000.00
<input type="checkbox"/>	 Edit	 Copy	 Delete	History	Painter	50000.00
<input type="checkbox"/>	 Edit	 Copy	 Delete	MMAE	Newton	95000.00
<input type="checkbox"/>	 Edit	 Copy	 Delete	Music	Packard	80000.00
<input type="checkbox"/>	 Edit	 Copy	 Delete	Physics	Watson	70000.00
<div><div><div><div></div><div></div><div></div></div></div><div><input type="checkbox"/> Check all</div><div>With selected:</div><div> Edit</div><div> Copy</div><div> Delete</div><div> Export</div></div>						

				ID	course_id	sec_id	semester	year	grade
<input type="checkbox"/>	Edit	Copy	Delete	00002	CS-301	2	Spring		2020 A+
<input type="checkbox"/>	Edit	Copy	Delete	00128	CS-101	1	Fall		2009 A
<input type="checkbox"/>	Edit	Copy	Delete	00128	CS-347	1	Fall		2009 A-
<input type="checkbox"/>	Edit	Copy	Delete	12345	CS-101	1	Fall		2009 C
<input type="checkbox"/>	Edit	Copy	Delete	12345	CS-190	2	Spring		2009 A
<input type="checkbox"/>	Edit	Copy	Delete	12345	CS-315	1	Spring		2010 A
<input type="checkbox"/>	Edit	Copy	Delete	12345	CS-347	1	Fall		2009 A
<input type="checkbox"/>	Edit	Copy	Delete	19991	HIS-351	1	Spring		2010 B
<input type="checkbox"/>	Edit	Copy	Delete	23121	FIN-201	1	Spring		2010 C+
<input type="checkbox"/>	Edit	Copy	Delete	44553	PHY-101	1	Fall		2009 B-
<input type="checkbox"/>	Edit	Copy	Delete	45678	CS-101	1	Fall		2009 F
<input type="checkbox"/>	Edit	Copy	Delete	45678	CS-101	1	Spring		2010 B+
<input type="checkbox"/>	Edit	Copy	Delete	45678	CS-319	1	Spring		2010 B
<input type="checkbox"/>	Edit	Copy	Delete	54321	CS-101	1	Fall		2009 A-
<input type="checkbox"/>	Edit	Copy	Delete	54321	CS-190	2	Spring		2009 B+
<input type="checkbox"/>	Edit	Copy	Delete	55739	MU-199	1	Spring		2010 A-
<input type="checkbox"/>	Edit	Copy	Delete	76543	CS-101	1	Fall		2009 A
<input type="checkbox"/>	Edit	Copy	Delete	76543	CS-319	2	Spring		2010 A
<input type="checkbox"/>	Edit	Copy	Delete	76653	EE-181	1	Spring		2009 C
<input type="checkbox"/>	Edit	Copy	Delete	98765	CS-101	1	Fall		2009 C-
<input type="checkbox"/>	Edit	Copy	Delete	98765	CS-315	1	Spring		2010 B
<input type="checkbox"/>	Edit	Copy	Delete	98988	BIO-101	1	Summer		2009 A
<input type="checkbox"/>	Edit	Copy	Delete	98988	BIO-301	1	Summer		2010 NULL

☐ Check all With selected: Edit Copy Delete Export

<div><div><div><div>←</div><div>T</div><div>→</div></div></div><div></div></div>				s_ID	i_ID
<input type="checkbox"/>	 Edit	 Copy	 Delete	00002	10001
<input type="checkbox"/>	 Edit	 Copy	 Delete	12345	10101
<input type="checkbox"/>	 Edit	 Copy	 Delete	44553	22222
<input type="checkbox"/>	 Edit	 Copy	 Delete	45678	22222
<input type="checkbox"/>	 Edit	 Copy	 Delete	00128	45565
<input type="checkbox"/>	 Edit	 Copy	 Delete	76543	45565
<input type="checkbox"/>	 Edit	 Copy	 Delete	23121	76543
<input type="checkbox"/>	 Edit	 Copy	 Delete	98988	76766
<input type="checkbox"/>	 Edit	 Copy	 Delete	76653	98345
<input type="checkbox"/>	 Edit	 Copy	 Delete	98765	98345


☐ Check all
 With selected:
  Edit
  Copy
  Delete

 			time_slot_id	day	start_hr	start_min	end_hr	end_min
<input type="checkbox"/>				A	F	8	0	8 50
<input type="checkbox"/>				A	M	8	0	8 50
<input type="checkbox"/>				A	W	8	0	8 50
<input type="checkbox"/>				B	F	9	0	9 50
<input type="checkbox"/>				B	M	8	30	9 30
<input type="checkbox"/>				B	M	9	0	9 50
<input type="checkbox"/>				B	W	9	0	9 50
<input type="checkbox"/>				C	F	11	0	11 50
<input type="checkbox"/>				C	M	11	0	11 50
<input type="checkbox"/>				C	W	11	0	11 50
<input type="checkbox"/>				D	F	13	0	13 50
<input type="checkbox"/>				D	M	13	0	13 50
<input type="checkbox"/>				D	W	13	0	13 50
<input type="checkbox"/>				E	R	10	30	11 45
<input type="checkbox"/>				E	T	10	30	11 45
<input type="checkbox"/>				F	R	14	30	15 45
<input type="checkbox"/>				F	T	14	30	15 45
<input type="checkbox"/>				G	F	16	0	16 50
<input type="checkbox"/>				G	M	16	0	16 50
<input type="checkbox"/>				G	W	16	0	16 50
<input type="checkbox"/>				H	W	10	0	12 30


☐ Check all
 With selected:
  Edit
  Copy
  Delete
  Export

7.3 Inserting more data into tables for question 8

```
-- insertions for 8a
INSERT INTO department VALUES('Civil', 'Watson', '70000');
INSERT INTO course
    VALUES('CV-101', 'Construction Engineering', 'Civil', '5');
INSERT INTO section
    VALUES('CV-101', '2', 'Spring', '2009', 'Taylor', '3128', 'C');
INSERT INTO section
    VALUES('CV-101', '2', 'Winter', '2009', 'Taylor', '3128', 'C');
INSERT INTO teaches VALUES('45565', 'CV-101', '2', 'Spring', '2009');
INSERT INTO teaches VALUES('10101', 'CV-101', '2', 'Winter', '2009');

-- insertions for 8b
INSERT INTO course
VALUES('CS-303', 'Introduction to Database Systems', 'Comp. Sci.', 6);

-- insertions for 8c
INSERT INTO department VALUES ('Chemical', 'Watson', '1000000');
INSERT INTO instructor
    VALUES ('11111', 'Schrodinger', 'Chemical', '90000');
INSERT INTO instructor
    VALUES ('33333', 'Avogadro', 'Chemical', '80000');

-- insertions for 8d
INSERT INTO student VALUES('20001', 'Abhishek', 'Comp. Sci.', 150);
INSERT INTO student VALUES('20002', 'Siddharth', 'Comp. Sci.', 150);
INSERT INTO student VALUES('20003', 'Bharath', 'Comp. Sci.', 150);
INSERT INTO student VALUES('20004', 'Chirantan', 'Comp. Sci.', 150);
INSERT INTO student VALUES('20005', 'Ankit', 'Comp. Sci.', 150);
INSERT INTO student VALUES('20006', 'Chirag', 'Comp. Sci.', 150);
INSERT INTO student VALUES('20007', 'Dibyashu', 'Comp. Sci.', 150);
INSERT INTO student VALUES('20008', 'Apurva', 'Comp. Sci.', 150);
INSERT INTO student VALUES('20009', 'Ayush', 'Comp. Sci.', 150);
INSERT INTO student VALUES('20010', 'Abhineet', 'Comp. Sci.', 150);
INSERT INTO student VALUES('20011', 'Lokesh', 'Comp. Sci.', 150);
INSERT INTO student VALUES('20012', 'Aryaman', 'Comp. Sci.', 150);
INSERT INTO student VALUES('20013', 'Hrishikesh', 'Comp. Sci.', 150);
INSERT INTO student VALUES('20014', 'Devdatt', 'Comp. Sci.', 150);
INSERT INTO student VALUES('20015', 'Devesh', 'Comp. Sci.', 150);
INSERT INTO student VALUES('20016', 'Aryan', 'Comp. Sci.', 150);
INSERT INTO student VALUES('20017', 'Surzith', 'Comp. Sci.', 150);
INSERT INTO student VALUES('20018', 'Nirmit', 'Comp. Sci.', 150);
```

```

INSERT INTO section
VALUES('CS-101', '1', 'Fall', 2007, 'Watson', '100', 'E');
INSERT INTO section
VALUES('CS-190', '1', 'Fall', 2007, 'Watson', '100', 'B');

INSERT INTO teaches VALUES('10101', 'CS-101', '1', 'Fall', '2007');
INSERT INTO teaches VALUES('10101', 'CS-190', '1', 'Fall', '2007');

INSERT INTO takes VALUES('20001', 'CS-101', '1', 'Fall', 2007, 'A+');
INSERT INTO takes VALUES('20002', 'CS-101', '1', 'Fall', 2007, 'A+');
INSERT INTO takes VALUES('20003', 'CS-101', '1', 'Fall', 2007, 'A');
INSERT INTO takes VALUES('20004', 'CS-101', '1', 'Fall', 2007, 'B');
INSERT INTO takes VALUES('20005', 'CS-101', '1', 'Fall', 2007, 'B+');
INSERT INTO takes VALUES('20006', 'CS-101', '1', 'Fall', 2007, 'A+');
INSERT INTO takes VALUES('20007', 'CS-101', '1', 'Fall', 2007, 'A+');
INSERT INTO takes VALUES('20008', 'CS-101', '1', 'Fall', 2007, 'A');
INSERT INTO takes VALUES('20009', 'CS-101', '1', 'Fall', 2007, 'B');
INSERT INTO takes VALUES('20010', 'CS-101', '1', 'Fall', 2007, 'B+');
INSERT INTO takes VALUES('20011', 'CS-101', '1', 'Fall', 2007, 'A+');
INSERT INTO takes VALUES('20012', 'CS-101', '1', 'Fall', 2007, 'A+');
INSERT INTO takes VALUES('20013', 'CS-101', '1', 'Fall', 2007, 'A');
INSERT INTO takes VALUES('20014', 'CS-101', '1', 'Fall', 2007, 'B');
INSERT INTO takes VALUES('20015', 'CS-101', '1', 'Fall', 2007, 'B+');
INSERT INTO takes VALUES('20016', 'CS-101', '1', 'Fall', 2007, 'A+');
INSERT INTO takes VALUES('20017', 'CS-101', '1', 'Fall', 2007, 'A+');
INSERT INTO takes VALUES('20018', 'CS-101', '1', 'Fall', 2007, 'A');

INSERT INTO takes VALUES('20002', 'CS-190', '1', 'Fall', 2007, 'A+');
INSERT INTO takes VALUES('20001', 'CS-190', '1', 'Fall', 2007, 'A+');
INSERT INTO takes VALUES('20003', 'CS-190', '1', 'Fall', 2007, 'A');
INSERT INTO takes VALUES('20004', 'CS-190', '1', 'Fall', 2007, 'B');
INSERT INTO takes VALUES('20005', 'CS-190', '1', 'Fall', 2007, 'B+');
INSERT INTO takes VALUES('20006', 'CS-190', '1', 'Fall', 2007, 'A+');
INSERT INTO takes VALUES('20007', 'CS-190', '1', 'Fall', 2007, 'A+');
INSERT INTO takes VALUES('20008', 'CS-190', '1', 'Fall', 2007, 'A');
INSERT INTO takes VALUES('20009', 'CS-190', '1', 'Fall', 2007, 'B');
INSERT INTO takes VALUES('20010', 'CS-190', '1', 'Fall', 2007, 'B+');
INSERT INTO takes VALUES('20011', 'CS-190', '1', 'Fall', 2007, 'A+');
INSERT INTO takes VALUES('20012', 'CS-190', '1', 'Fall', 2007, 'A+');
INSERT INTO takes VALUES('20013', 'CS-190', '1', 'Fall', 2007, 'A');
INSERT INTO takes VALUES('20014', 'CS-190', '1', 'Fall', 2007, 'B');
INSERT INTO takes VALUES('20015', 'CS-190', '1', 'Fall', 2007, 'B+');
INSERT INTO takes VALUES('20016', 'CS-190', '1', 'Fall', 2007, 'A+');
INSERT INTO takes VALUES('20017', 'CS-190', '1', 'Fall', 2007, 'A+');

```


8 SQL queries on phpMyAdmin

8.1 Find the course_id, title, instructor_id and name of those instructors who are from CSE department but are teaching a course of Civil department in the year 2009. Arrange results in ascending order of instructor names.

Query

```
SELECT course.course_id, course.title,  
       A.ID, A.name  
FROM (SELECT * FROM section NATURAL JOIN teaches NATURAL JOIN  
      instructor) as A, course  
WHERE A.course_id = course.course_id AND  
      A.dept_name = 'Comp. Sci.' AND  
      A.year = '2009' AND  
      course.dept_name = 'Civil'  
ORDER BY A.name ASC;
```

Results

course_id	title	ID	name ▲ 1
CV-101	Construction Engineering	45565	Katz
CV-101	Construction Engineering	10101	Srinivasan

8.2 Add a new course with course_id as CS-333 (with suitable values for other attributes) for the CSE department which will have CS-303 as a prerequisite. Write insert statements for the same.

Query

```
INSERT INTO course
VALUES('CS-333', 'Advanced Database Systems', 'Comp. Sci.', 6);
INSERT INTO prereq
VALUES('CS-333', 'CS-303');
SELECT *
FROM course NATURAL JOIN prereq;
```

Results

course_id	title	dept_name	credits	prereq_id
BIO-301	Genetics	Biology	4	BIO-101
BIO-399	Computational Biology	Biology	3	BIO-101
CS-190	Game Design	Comp. Sci.	4	CS-101
CS-301	Computer Architecture	Comp. Sci.	6	CS-101
CS-315	Robotics	Comp. Sci.	3	CS-101
CS-319	Image Processing	Comp. Sci.	3	CS-101
CS-333	Advanced Database Systems	Comp. Sci.	6	CS-303
CS-347	Database System Concepts	Comp. Sci.	3	CS-101
EE-181	Intro. to Digital Systems	Elec. Eng.	3	PHY-101

8.3 Update salaries of instructors by 10% if their departments have a budget of more than 900000 rupees. Write the update statements for the same.

Query

```
SELECT *
FROM department NATURAL JOIN instructor
WHERE department.budget > 900000;
UPDATE instructor SET salary = salary + salary*0.1
WHERE dept_name IN (SELECT dept_name
                     FROM department NATURAL JOIN instructor
                     WHERE department.budget > 900000);
SELECT *
FROM department NATURAL JOIN instructor
WHERE department.budget > 900000;
```

Results

dept_name	building	budget	ID	name	salary
Chemical	Watson	1000000.00	11111	Schrodinger	90000.00
Chemical	Watson	1000000.00	33333	Avogadro	80000.00

Figure 1: Table before updation

dept_name	building	budget	ID	name	salary
Chemical	Watson	1000000.00	11111	Schrodinger	99000.00
Chemical	Watson	1000000.00	33333	Avogadro	88000.00

Figure 2: Table after updation

8.4 Find CSE department courses (id and title) and number of students taking that course in the year 2007 and semester Fall where the number is greater than 15. Arrange the results in ascending order of course id.

Query

```
SELECT *
FROM (SELECT course.course_id, course.title
      FROM course NATURAL JOIN section
      WHERE dept_name = 'Comp. Sci.' AND
            semester = 'Fall' AND
            year = '2007') as CSE_courses NATURAL JOIN
      (SELECT course_id, COUNT(ID) as `Number of students`
      FROM takes
      GROUP BY course_id
      HAVING COUNT(ID) > 15) as courses_15
ORDER BY CSE_courses.course_id ASC;
```

Results

course_id ▲ 1	title	Number of students
CS-101	Intro. to Computer Science	25
CS-190	Game Design	19