

CS 313 Lab 4

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Contents

1	Q1) Create a user called universityDB+last 4 digits of roll number.	2
2	Q2) Create a database called university.	3
3	Q3) Connect the database using the command.	3
4	Q4) Create the tables in the university database using DDL.sql file.	4
5	Q5) Load the data into tables using insert.sql	5
6	Q6) Load the data into tables using insert.sql	6
7	Q7) Install Phpmyadmin tool	10
8	Q8) Execute the following queries.	18
8.1	i	18
8.2	ii	18
8.3	iii	19
8.4	iv	19

List of Figures

1	Q1 output	2
2	Q2 output	3
3	Q3 output	3
4	Q4 output	4
5	Q5 output	5
6	Q6a output	6
7	Q6b output	7
8	Q6c output	8
9	Q6d output	9

10	Q7 login	10
11	Q7 db select	10
12	Q7 insert	11
13	Q7 insert output	12
14	Q7 select advisor, student	12
15	Q7 select takes	13
16	Q7 select time_slot	13
17	Q7 select prereq	14
18	Q7 select teaches	14
19	Q7 select section	15
20	Q7 select classroom	15
21	Q7 select section	16
22	Q7 select department,course	17
23	Q8) i	18
24	Q8) ii	18
25	Q8) ii	19
26	Q8) iii	19
27	Q8) iv	19

1 Q1) Create a user called universityDB+last 4 digits of roll number.

```

abhishekjga@abhishek-Ubuntu:~$ mysql -u root -p
Enter password:
Welcome to the MySQL monitor.  Commands end with ; or \g.
Your MySQL connection id is 9
Server version: 8.0.30-0ubuntu0.22.04.1 (Ubuntu)

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owners.

Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.

mysql> create user 'universityDB0021'@'localhost' identified by 'Abhi2002**'
-> ;
Query OK, 0 rows affected (0.05 sec)

mysql> grant all privileges on university.* to 'universityDB0021'@'localhost';
Query OK, 0 rows affected (0.01 sec)

mysql> ^DBye
abhishekjga@abhishek-Ubuntu:~$ mysql -u universityDB0021 -p
Enter password:
Welcome to the MySQL monitor.  Commands end with ; or \g.
Your MySQL connection id is 10
Server version: 8.0.30-0ubuntu0.22.04.1 (Ubuntu)

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owners.

Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.

mysql>

```

Figure 1: Q1 output

2 Q2) Create a database called university.

```
abhishekj@Abhishek-Ubuntu:~$ mysql -u universityDB0021 -p
Enter password:
Welcome to the MySQL monitor.  Commands end with ; or \g.
Your MySQL connection id is 10
Server version: 8.0.30-0ubuntu0.22.04.1 (Ubuntu)

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owners.

Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.

mysql> create database university;
Query OK, 1 row affected (0.02 sec)

mysql>
```

Figure 2: Q2 output

3 Q3) Connect the database using the command.

```
abhishekj@Abhishek-Ubuntu:~$ mysql -u universityDB0021 -p
Enter password:
Welcome to the MySQL monitor.  Commands end with ; or \g.
Your MySQL connection id is 11
Server version: 8.0.30-0ubuntu0.22.04.1 (Ubuntu)

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owners.

Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.

mysql> use university;
Database changed
mysql>
```

Figure 3: Q3 output

4 Q4) Create the tables in the university database using DDL.sql file.

```
abhishekj@Abhishek-Ubuntu:~$ mysql -u universityDB0021 -p
Enter password:
Welcome to the MySQL monitor.  Commands end with ; or \g.
Your MySQL connection id is 12
Server version: 8.0.30-0ubuntu0.22.04.1 (Ubuntu)

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owners.

Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.

mysql> use university;
Database changed
mysql> source /home/abhishekj/Documents/DBMS_Lab/Lab4/DDL.sql;
Query OK, 0 rows affected (0.08 sec)

Query OK, 0 rows affected (0.09 sec)

Query OK, 0 rows affected (0.08 sec)

Query OK, 0 rows affected (0.06 sec)

Query OK, 0 rows affected (0.09 sec)

Query OK, 0 rows affected (0.09 sec)

Query OK, 0 rows affected (0.08 sec)

Query OK, 0 rows affected (0.09 sec)

Query OK, 0 rows affected (0.09 sec)

Query OK, 0 rows affected (0.06 sec)

Query OK, 0 rows affected (0.09 sec)

mysql> show tables;
+-----+
| Tables_in_university |
+-----+
| advisor               |
| classroom             |
| course                |
| department            |
| instructor            |
| prereq                |
| section               |
| student               |
| takes                 |
| teaches               |
| time_slot             |
+-----+
11 rows in set (0.01 sec)
```

Figure 4: Q4 output

5 Q5) Load the data into tables using insert.sql

```
abhishekj@Abhishek-Ubuntu:~$ mysql -u universityDB0021 -p
Enter password:
Welcome to the MySQL monitor.  Commands end with ; or \g.
Your MySQL connection id is 14
Server version: 8.0.30-0ubuntu0.22.04.1 (Ubuntu)

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owners.

Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.

mysql> use university;
Reading table information for completion of table and column names
You can turn off this feature to get a quicker startup with -A

Database changed
mysql> source /home/abhishekj/Documents/DBMS_Lab/Lab4/InsertValues.sql;
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, 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 (0.01 sec)

Query OK, 1 row affected (0.01 sec)

Query OK, 1 row affected (0.01 sec)

Query OK, 1 row affected (0.01 sec)

Query OK, 1 row affected (0.01 sec)

Query OK, 1 row affected (0.01 sec)

Query OK, 1 row affected (0.01 sec)
```

Figure 5: Q5 output

6 Q6) Load the data into tables using insert.sql

```
abhishekj@Abhishek-Ubuntu:~$ mysql -u universityDB0021 -p
Enter password:
Welcome to the MySQL monitor.  Commands end with ; or \g.
Your MySQL connection id is 17
Server version: 8.0.30-0ubuntu0.22.04.1 (Ubuntu)

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owners.

Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.

mysql> use university;
Reading table information for completion of table and column names
You can turn off this feature to get a quicker startup with -A

Database changed
mysql> SELECT table_name, column_name, data_type FROM information_schema.columns WHERE table_name = 'student';
+-----+-----+-----+
| TABLE_NAME | COLUMN_NAME | DATA_TYPE |
+-----+-----+-----+
| student     | dept_name   | varchar    |
| student     | ID          | varchar    |
| student     | name        | varchar    |
| student     | tot_cred    | decimal    |
+-----+-----+-----+
4 rows in set (0.00 sec)

mysql> SELECT table_name, column_name, data_type FROM information_schema.columns WHERE table_name = 'takes';
+-----+-----+-----+
| TABLE_NAME | COLUMN_NAME | DATA_TYPE |
+-----+-----+-----+
| takes       | course_id   | varchar    |
| takes       | grade       | varchar    |
| takes       | ID          | varchar    |
| takes       | sec_id      | varchar    |
| takes       | semester    | varchar    |
| takes       | year        | decimal    |
+-----+-----+-----+
6 rows in set (0.00 sec)

mysql> SELECT table_name, column_name, data_type FROM information_schema.columns WHERE table_name = 'prereq';
+-----+-----+-----+
| TABLE_NAME | COLUMN_NAME | DATA_TYPE |
+-----+-----+-----+
| prereq      | course_id   | varchar    |
| prereq      | prereq_id   | varchar    |
+-----+-----+-----+
2 rows in set (0.01 sec)

mysql> █
```

Figure 6: Q6a output

```

abhishekj@Abhishek-Ubuntu:~$ mysql -u universityDB0021 -p
Enter password:
Welcome to the MySQL monitor.  Commands end with ; or \g.
Your MySQL connection id is 18
Server version: 8.0.30-0ubuntu0.22.04.1 (Ubuntu)

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owners.

Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.

mysql> use university;
Reading table information for completion of table and column names
You can turn off this feature to get a quicker startup with -A

Database changed
mysql> SELECT table_name, column_name, data_type FROM information_schema.columns WHERE table_name = 'time_slot';
+-----+-----+-----+
| TABLE_NAME | COLUMN_NAME | DATA_TYPE |
+-----+-----+-----+
| time_slot   | day         | varchar    |
| time_slot   | end_hr      | decimal    |
| time_slot   | end_min     | decimal    |
| time_slot   | start_hr    | decimal    |
| time_slot   | start_min   | decimal    |
| time_slot   | time_slot_id | varchar    |
+-----+-----+-----+
6 rows in set (0.01 sec)

mysql> SELECT table_name, column_name, data_type FROM information_schema.columns WHERE table_name = 'advisor';
+-----+-----+-----+
| TABLE_NAME | COLUMN_NAME | DATA_TYPE |
+-----+-----+-----+
| advisor     | i_ID        | varchar    |
| advisor     | s_ID        | varchar    |
+-----+-----+-----+
2 rows in set (0.00 sec)

mysql> SELECT table_name, column_name, data_type FROM information_schema.columns WHERE table_name = 'teaches';
+-----+-----+-----+
| TABLE_NAME | COLUMN_NAME | DATA_TYPE |
+-----+-----+-----+
| teaches     | course_id   | varchar    |
| teaches     | ID          | varchar    |
| teaches     | sec_id      | varchar    |
| teaches     | semester    | varchar    |
| teaches     | year        | decimal    |
+-----+-----+-----+
5 rows in set (0.00 sec)

mysql> █

```

Figure 7: Q6b output

```

abhishekj@Abhishek-Ubuntu:~$ mysql -u universityDB0021 -p
Enter password:
Welcome to the MySQL monitor.  Commands end with ; or \g.
Your MySQL connection id is 19
Server version: 8.0.30-0ubuntu0.22.04.1 (Ubuntu)

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Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.

mysql> use university;
Reading table information for completion of table and column names
You can turn off this feature to get a quicker startup with -A

Database changed
mysql> SELECT table_name, column_name, data_type FROM information_schema.columns WHERE table_name = 'section';
+-----+-----+-----+
| TABLE_NAME | COLUMN_NAME | DATA_TYPE |
+-----+-----+-----+
| section     | building    | varchar    |
| section     | course_id   | varchar    |
| section     | room_number | varchar    |
| section     | sec_id      | varchar    |
| section     | semester    | varchar    |
| section     | time_slot_id | varchar    |
| section     | year        | decimal    |
+-----+-----+-----+
7 rows in set (0.00 sec)

mysql> SELECT table_name, column_name, data_type FROM information_schema.columns WHERE table_name = 'classroom';
+-----+-----+-----+
| TABLE_NAME | COLUMN_NAME | DATA_TYPE |
+-----+-----+-----+
| classroom   | building    | varchar    |
| classroom   | capacity    | decimal    |
| classroom   | room_number | varchar    |
+-----+-----+-----+
3 rows in set (0.00 sec)

mysql> SELECT table_name, column_name, data_type FROM information_schema.columns WHERE table_name = 'course';
+-----+-----+-----+
| TABLE_NAME | COLUMN_NAME | DATA_TYPE |
+-----+-----+-----+
| course      | course_id   | varchar    |
| course      | credits     | decimal    |
| course      | dept_name   | varchar    |
| course      | title       | varchar    |
+-----+-----+-----+
4 rows in set (0.01 sec)

mysql>

```

Figure 8: Q6c output


```

abhishekj@Abhishek-Ubuntu:~$ mysql -u universityDB0021 -p
Enter password:
Welcome to the MySQL monitor.  Commands end with ; or \g.
Your MySQL connection id is 20
Server version: 8.0.30-0ubuntu0.22.04.1 (Ubuntu)

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owners.

Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.

mysql> use university;
Reading table information for completion of table and column names
You can turn off this feature to get a quicker startup with -A

Database changed
mysql> SELECT table_name, column_name, data_type FROM information_schema.columns WHERE table_name = 'instructor';
+-----+-----+-----+
| TABLE_NAME | COLUMN_NAME | DATA_TYPE |
+-----+-----+-----+
| instructor  | dept_name   | varchar    |
| instructor  | ID          | varchar    |
| instructor  | name        | varchar    |
| instructor  | salary      | decimal    |
+-----+-----+-----+
4 rows in set (0.01 sec)

mysql> SELECT table_name, column_name, data_type FROM information_schema.columns WHERE table_name = 'department';
+-----+-----+-----+
| TABLE_NAME | COLUMN_NAME | DATA_TYPE |
+-----+-----+-----+
| department  | budget      | decimal    |
| department  | building    | varchar    |
| department  | dept_name   | varchar    |
+-----+-----+-----+
3 rows in set (0.00 sec)

mysql>

```

Figure 9: Q6d output

7 Q7) Install Phpmyadmin tool

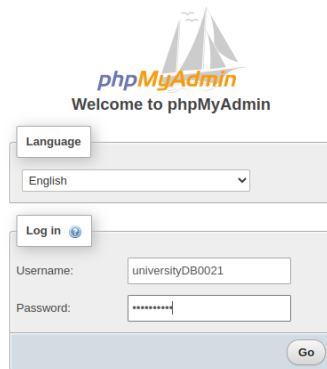


Figure 10: Q7 login

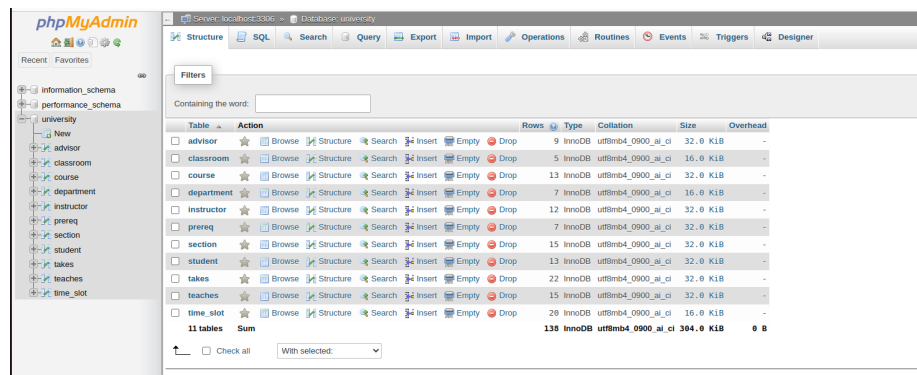


Figure 11: Q7 db select

```

1 INSERT INTO department
2 VALUES
3 ("AIML","Powerson", 500000);
4
5 INSERT INTO course
6 VALUES
7 ("7777","Intro to AI", "AIML", 9);
8
9 INSERT INTO instructor
10 VALUES
11 ("6969","Abhishek","AIML", 50000);
12
13 INSERT INTO classroom
14 VALUES
15 ("Powerson","69",420);
16
17 INSERT INTO section
18 VALUES
19 ("7777","8888","Spring", 2020, "Powerson", "69", "143");
20
21 INSERT INTO teaches
22 VALUES
23 ("6969","7777","8888","Spring", 2020);
24
25 INSERT INTO student
26 VALUES
27 ("6969","Abhishek","AIML", 100);
28
29 INSERT INTO takes
30 VALUES
31 ("6969","7777","8888","Spring", 2020, "A");
32
33 INSERT INTO advisor
34 VALUES
35 ("6969","6969");
36
37 INSERT INTO time_slot
38 VALUES
39 ("143","M",11,30,12,30);
40
41 INSERT INTO prereq
42 VALUES
43 ("7777","CS-101");

```

Figure 12: Q7 insert

```
✓ 1 row inserted. (Query took 0.0086 seconds)
INSERT INTO department VALUES ('ATML','Powerson', 500000);
[Edit inline] [Edit] [Create PHP code]

✓ 1 row inserted. (Query took 0.0086 seconds)
INSERT INTO course VALUES ('7777','Intro to AI','ATML', 9);
[Edit inline] [Edit] [Create PHP code]

✓ 1 row inserted. (Query took 0.0073 seconds)
INSERT INTO instructor VALUES ('6969','Abhishek','ATML', 50000);
[Edit inline] [Edit] [Create PHP code]

✓ 1 row inserted. (Query took 0.0086 seconds)
INSERT INTO classroom VALUES ('Powerson','69',420);
[Edit inline] [Edit] [Create PHP code]

✓ 1 row inserted. (Query took 0.0085 seconds)
INSERT INTO section VALUES ('7777','8888','Spring', 2020,'Powerson','69','143');
[Edit inline] [Edit] [Create PHP code]

✓ 1 row inserted. (Query took 0.0080 seconds)
INSERT INTO teaches VALUES ('6969','7777','8888','Spring', 2020);
[Edit inline] [Edit] [Create PHP code]

✓ 1 row inserted. (Query took 0.0090 seconds)
INSERT INTO student VALUES ('6969','Abhishek','ATML', 100);
[Edit inline] [Edit] [Create PHP code]
■ Console
```

Figure 13: Q7 insert output

✓ Showing rows 0 - 8 (9 total. Query took 0.0004 seconds)

SELECT * FROM advisor JOIN student WHERE advisor.s_ID = student.ID;

☐ Profiling [\[Edit inline\]](#) [\[Edit\]](#) [\[Explain SQL\]](#) [\[Create PHP code\]](#) [\[Refresh\]](#)

☐ Show all | Number of rows: 25 | Filter rows: Search this table | Sort by key: None

Options					
s_ID	s_ID	ID	name	dept_name	tot_cred
12345	10101	12345	Shankar	Comp. Sci.	32
44553	22222	44553	Pettier	Physics	56
45678	22222	45678	Levy	Physics	46
00128	45565	00128	Zhang	Comp. Sci.	102
76543	45565	76543	Brown	Comp. Sci.	58
23121	76543	23121	Chavez	Finance	110
98988	76766	98988	Tanaka	Biology	120
76653	98345	76653	Ali	Elec. Eng.	60
98765	98345	98765	Bourikas	Elec. Eng.	98

☐ Show all | Number of rows: 25 | Filter rows: Search this table | Sort by key: None

Figure 14: Q7 select advisor, student

Showing rows 0 - 21 (22 total, Query took 0.0002 seconds.)

SELECT * FROM takes;

Profiling [Edit inline] [Edit] [Explain SQL] [Create PHP code] [Refresh]

Show all | Number of rows: 25 | Filter rows: Search this table | Sort by key: None

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

Figure 15: Q7 select takes

Showing rows 0 - 19 (20 total, Query took 0.0004 seconds.)

SELECT * FROM time_slot;

Profiling [Edit inline] [Edit] [Explain SQL] [Create PHP code] [Refresh]

Show all | Number of rows: 25 | Filter rows: Search this table | Sort by key: None

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

Figure 16: Q7 select time_slot

Showing rows 0 - 6 (7 total, Query took 0.0003 seconds.)

SELECT * FROM prereq;

Profiling [Edit inline] [Edit] [Explain SQL] [Create PHP code] [Refresh]

Show all | Number of rows: 25 | Filter rows: Search this table | Sort by key: None

+ Options

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

Check all | With selected | Edit | Copy | Delete | Export

Show all | Number of rows: 25 | Filter rows: Search this table | Sort by key: None

Query results operations

Print | Copy to clipboard | Export | Display chart | Create view

Figure 17: Q7 select prereq

Showing rows 0 - 14 (15 total, Query took 0.0003 seconds.)

SELECT * FROM teaches;

Profiling [Edit inline] [Edit] [Explain SQL] [Create PHP code] [Refresh]

Show all | Number of rows: 25 | Filter rows: Search this table | Sort by key: None

+ Options

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

Figure 18: Q7 select teaches

Showing rows 0 - 14 (15 total, Query took 0.0003 seconds.)

```
SELECT * FROM section;
```

☐ Profiling [\[Edit inline \]](#) [\[Edit \]](#) [\[Explain SQL \]](#) [\[Create PHP code \]](#) [\[Refresh \]](#)

☐ Show all | Number of rows: 25 | Filter rows: Search this table | Sort by key: None

+ Options

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

Figure 19: Q7 select section

Showing rows 0 - 4 (5 total, Query took 0.0002 seconds.)

SELECT * FROM classroom;

Profiling

Edit inline

Edit

Explain SQL

Create PHP code

Refresh

Show all

Number of rows: 25

Filter rows: Search this table

Sort by key: None

+ Options

←

→

building

room_number

capacity

Edit

Copy

Delete

Packard

101

500

Edit

Copy

Delete

Painter

514

10

Edit

Copy

Delete

Taylor

3128

70

Edit

Copy

Delete

Watson

100

30

Edit

Copy

Delete

Watson

120

50

Check all

With selected:

Edit

Copy

Delete

Export

Figure 20: Q7 select classroom

✓ Showing rows 0 - 14 (15 total, Query took 0.0003 seconds.)

`SELECT * FROM section;`

☐ Profiling [\[Edit inline \]](#) [\[Edit \]](#) [\[Explain SQL \]](#) [\[Create PHP code \]](#) [\[Refresh \]](#)

☐ Show all | Number of rows: | Filter rows: | Sort by key:

+ Options

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

Figure 21: Q7 select section

Showing rows 0 - 24 (26 total, Query took 0.0004 seconds.)

```
SELECT * FROM department NATURAL JOIN course NATURAL JOIN instructor;
```

☐ Profiling [\[Edit inline \]](#) [\[Edit \]](#) [\[Explain SQL \]](#) [\[Create PHP code \]](#) [\[Refresh \]](#)

1 > >> ☐ Show all Number of rows: 25 Filter rows: Search this table Sort by key: None

+ Options

dept_name	building	budget	course_id	title	credits	ID	name	salary
Biology	Watson	90000.00	BIO-101	Intro. to Biology	4	76766	Crick	72000.00
Biology	Watson	90000.00	BIO-301	Genetics	4	76766	Crick	72000.00
Biology	Watson	90000.00	BIO-399	Computational Biology	3	76766	Crick	72000.00
Comp. Sci.	Taylor	100000.00	CS-101	Intro. to Computer Science	4	10101	Srinivasan	65000.00
Comp. Sci.	Taylor	100000.00	CS-190	Game Design	4	10101	Srinivasan	65000.00
Comp. Sci.	Taylor	100000.00	CS-315	Robotics	3	10101	Srinivasan	65000.00
Comp. Sci.	Taylor	100000.00	CS-319	Image Processing	3	10101	Srinivasan	65000.00
Comp. Sci.	Taylor	100000.00	CS-347	Database System Concepts	3	10101	Srinivasan	65000.00
Comp. Sci.	Taylor	100000.00	CS-101	Intro. to Computer Science	4	45565	Katz	75000.00
Comp. Sci.	Taylor	100000.00	CS-190	Game Design	4	45565	Katz	75000.00
Comp. Sci.	Taylor	100000.00	CS-315	Robotics	3	45565	Katz	75000.00
Comp. Sci.	Taylor	100000.00	CS-319	Image Processing	3	45565	Katz	75000.00
Comp. Sci.	Taylor	100000.00	CS-347	Database System Concepts	3	45565	Katz	75000.00
Comp. Sci.	Taylor	100000.00	CS-101	Intro. to Computer Science	4	83821	Brandt	92000.00
Comp. Sci.	Taylor	100000.00	CS-190	Game Design	4	83821	Brandt	92000.00
Comp. Sci.	Taylor	100000.00	CS-315	Robotics	3	83821	Brandt	92000.00
Comp. Sci.	Taylor	100000.00	CS-319	Image Processing	3	83821	Brandt	92000.00
Comp. Sci.	Taylor	100000.00	CS-347	Database System Concepts	3	83821	Brandt	92000.00
Elec. Eng.	Taylor	85000.00	EE-181	Intro. to Digital Systems	3	98345	Kim	80000.00
Finance	Painter	120000.00	FIN-201	Investment Banking	3	12121	Wu	90000.00
Finance	Painter	120000.00	FIN-201	Investment Banking	3	76543	Singh	80000.00
History	Painter	50000.00	HIS-351	World History	3	32343	El Said	60000.00
History	Painter	50000.00	HIS-351	World History	3	58583	Califieri	62000.00
Music	Packard	80000.00	MU-199	Music Video Production	3	15151	Mozart	40000.00
Physics	Watson	70000.00	PHY-101	Physical Principles	4	22222	Einstein	95000.00

Figure 22: Q7 select department,course

8 Q8) Execute the following queries.

8.1 i

Run SQL query/queries on database university: ⓘ

```
1 SELECT course.course_id, course.title, instructor.ID, instructor.name
2 FROM
3 instructor NATURAL JOIN teaches
4 NATURAL JOIN course
5
6 WHERE
7 instructor.dept_name = "Comp. Sci." AND
8 course.dept_name = "Civil" AND
9 teaches.year = 2009
10
11 ORDER BY instructor.name ASC;
```

Clear Format Get auto-saved query

☐ Bind parameters ⓘ

Delimiter ; ☐ Show this query here again ☐ Retain query box ☐ Rollback when finished ☒ Enable foreign key checks Go

Hide query box

✔ MySQL returned an empty result set (i.e. zero rows). (Query took 0.0004 seconds.)

```
SELECT course.course_id, course.title, instructor.ID, instructor.name FROM instructor NATURAL JOIN teaches
NATURAL JOIN course WHERE instructor.dept_name = "Comp. Sci." AND course.dept_name = "Civil" AND teaches.year =
2009 ORDER BY instructor.name ASC;
```

☐ Profiling [Edit inline] [Edit] [Explain SQL] [Create PHP code] [Refresh]

course_id	title	ID	name
-----------	-------	----	------

Query results operations

Create view

Figure 23: Q8) i

8.2 ii

✔ 2 rows inserted. (Query took 0.0082 seconds.)

```
INSERT INTO course VALUES ('CS-333', 'NNDL', 'Comp. Sci.', 6), ('CS-303', 'AIML', 'Comp. Sci.', 6);
```

[Edit inline] [Edit] [Create PHP code]

Figure 24: Q8) ii

```

✓ 1 row inserted. (Query took 0.0090 seconds.)

INSERT INTO prereq VALUES ('CS-333', 'CS-303');

[ Edit inline ] [ Edit ] [ Create PHP code ]

```

Figure 25: Q8) ii

8.3 iii

```

1 UPDATE instructor
2 SET instructor.salary = instructor.salary*1.1
3 WHERE instructor.dept_name IN (SELECT department.dept_name FROM department WHERE department.budget >
900000.00);

```

Clear Format Get auto-saved query

☐ Bind parameters ⓘ

Delimiter ; ☐ Show this query here again ☐ Retain query box ☐ Rollback when finished

☒ Enable foreign key checks

Simulate query Go

Hide query box

```

✓ 0 rows affected. (Query took 0.0005 seconds.)

UPDATE instructor SET instructor.salary = instructor.salary*1.1 WHERE instructor.dept_name IN (SELECT
department.dept_name FROM department WHERE department.budget > 900000.00);

[ Edit inline ] [ Edit ] [ Create PHP code ]

```

Figure 26: Q8) iii

8.4 iv

```

✓ MySQL returned an empty result set (i.e. zero rows). (Query took 0.0003 seconds.)

SELECT course.course_id, course.title, COUNT(takes.ID) AS 'No. of Students' FROM takes NATURAL JOIN course WHERE course.dept_name = 'Comp. Sci.' AND takes.semester = 'Fall' AND takes.year = 2007
GROUP BY course.course_id HAVING 'No. of Students' > 15 ORDER BY course.course_id ASC;

[ Profiling ] [ Edit inline ] [ Edit ] [ Explain SQL ] [ Create PHP code ] [ Refresh ]

```

Figure 27: Q8) iv