

# Assignment No. 1

6CS371 : Advanced Database System Lab

Name : Jay Shirgupe

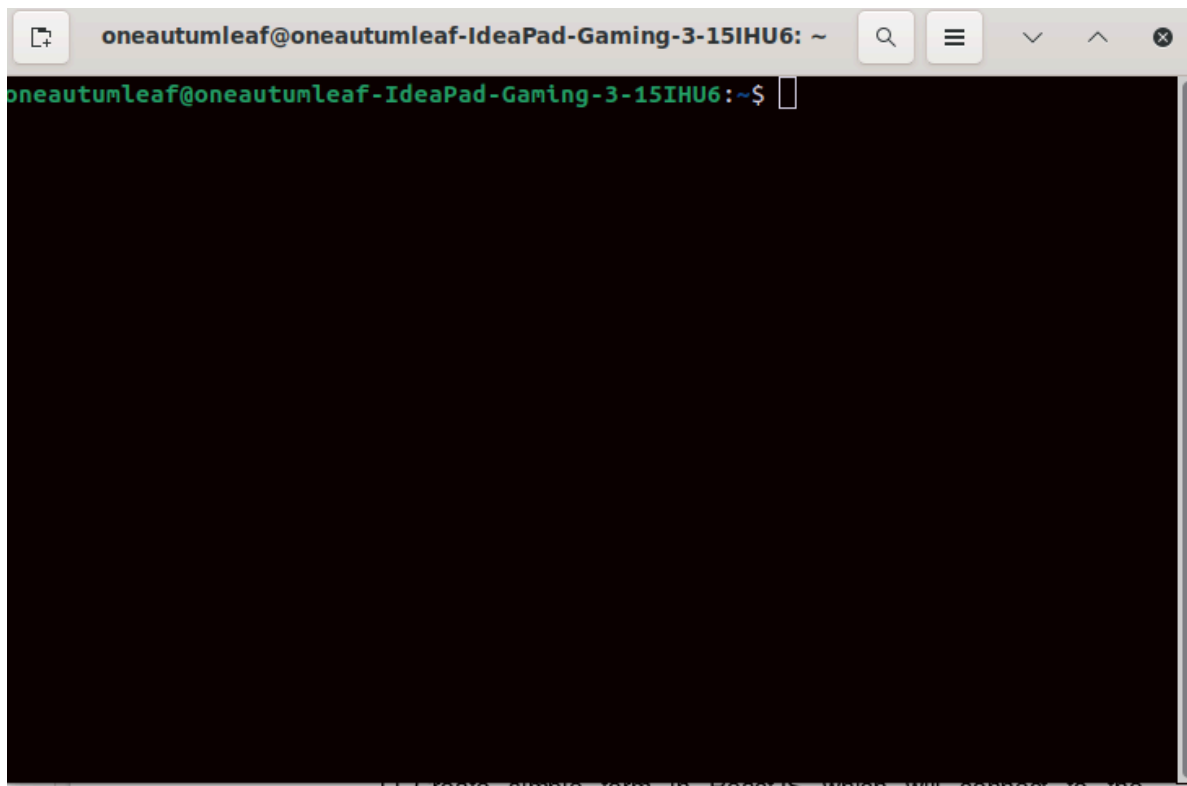
PRN: 21510026

Batch: T-7

TY CSE

1. Download / get setup CD of Server & Client (Win/Linux).

Command Line Interface for Linux:

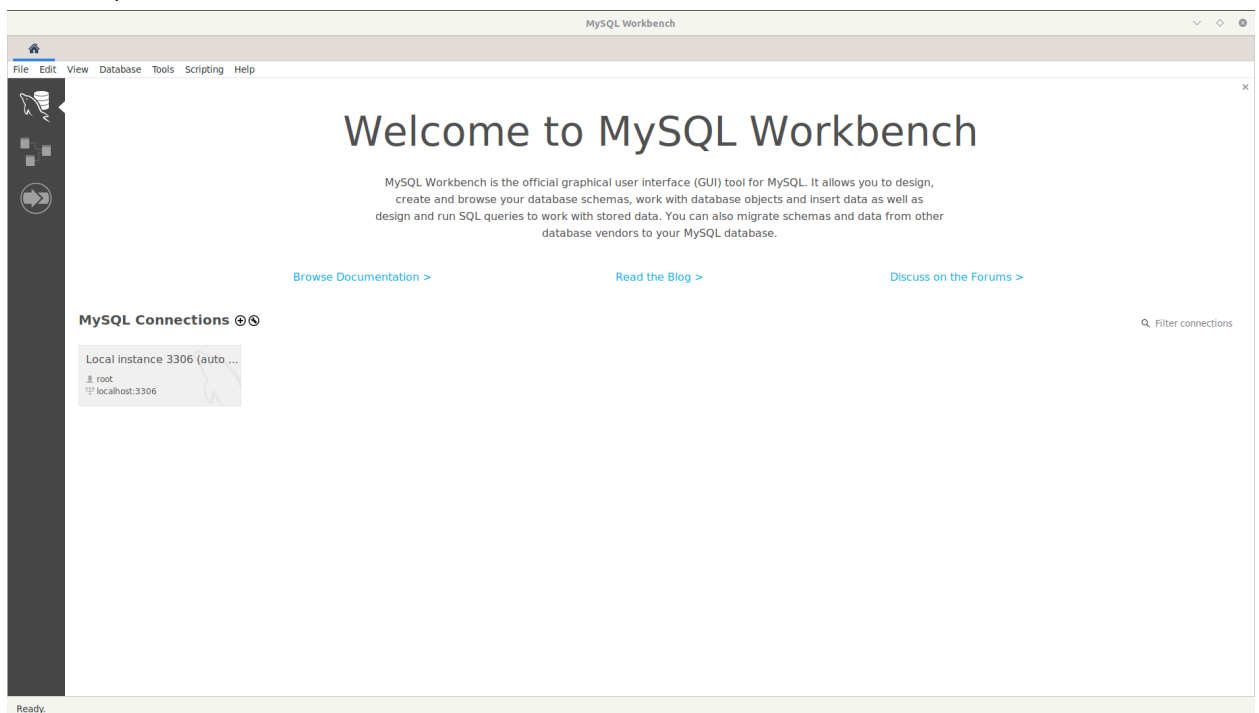


2. Install MySQL Server on one machine.

We will install the mysql server on the linux(ubuntu) machine. The following is the screenshot of the running mysql service.

```
oneautumleaf@oneautumleaf-IdeaPad-Gaming-3-15IHU6: ~  
oneautumleaf@oneautumleaf-IdeaPad-Gaming-3-15IHU6:~$ sudo systemctl status mysql  
.service  
[sudo] password for oneautumleaf:  
● mysql.service - MySQL Community Server  
   Loaded: loaded (/lib/systemd/system/mysql.service; enabled; vendor preset:en  
   Active: active (running) since Mon 2024-01-22 15:10:56 IST; 53min ago  
   Process: 761 ExecStartPre=/usr/share/mysql/mysql-systemd-start pre (code=ex  
   Main PID: 860 (mysqld)  
   Status: "Server is operational"  
   Tasks: 37 (limit: 9170)  
   Memory: 436.6M  
   CPU: 31.428s  
   CGroup: /system.slice/mysql.service  
           └─860 /usr/sbin/mysqld  
  
Jan 22 15:10:55 oneautumleaf-IdeaPad-Gaming-3-15IHU6 systemd[1]: Starting MySQL  
Jan 22 15:10:56 oneautumleaf-IdeaPad-Gaming-3-15IHU6 systemd[1]: Started MySQL  
lines 1-14/14 (END)
```

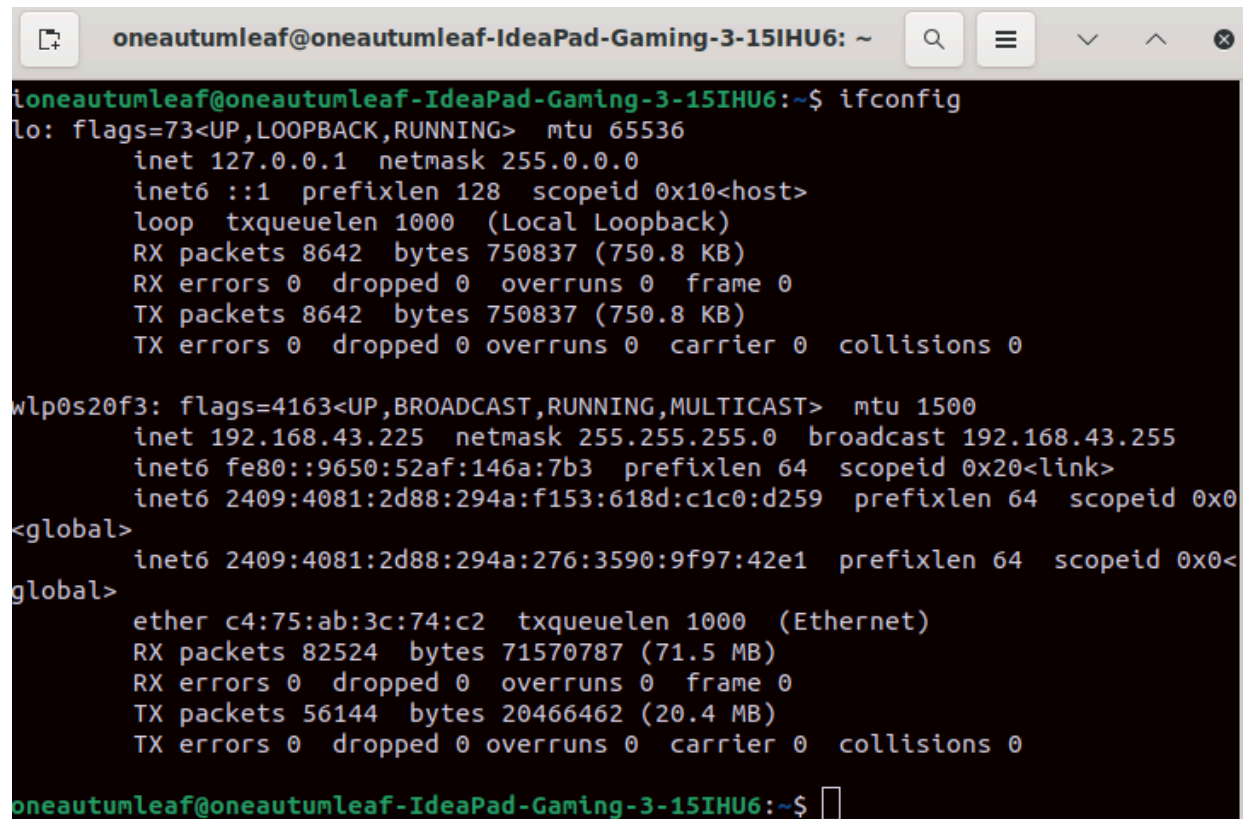
3. Install Client on another machine.  
We will install the mysql client, MySQL workbench on other machine, (a Windows machine).



4. Check the connectivity from the Web client and SQL command line.

To connect the client with the mysql server on the other machine we need to

- a. Connect the two machines to the same network.
- b. Get the IP address of the server machine



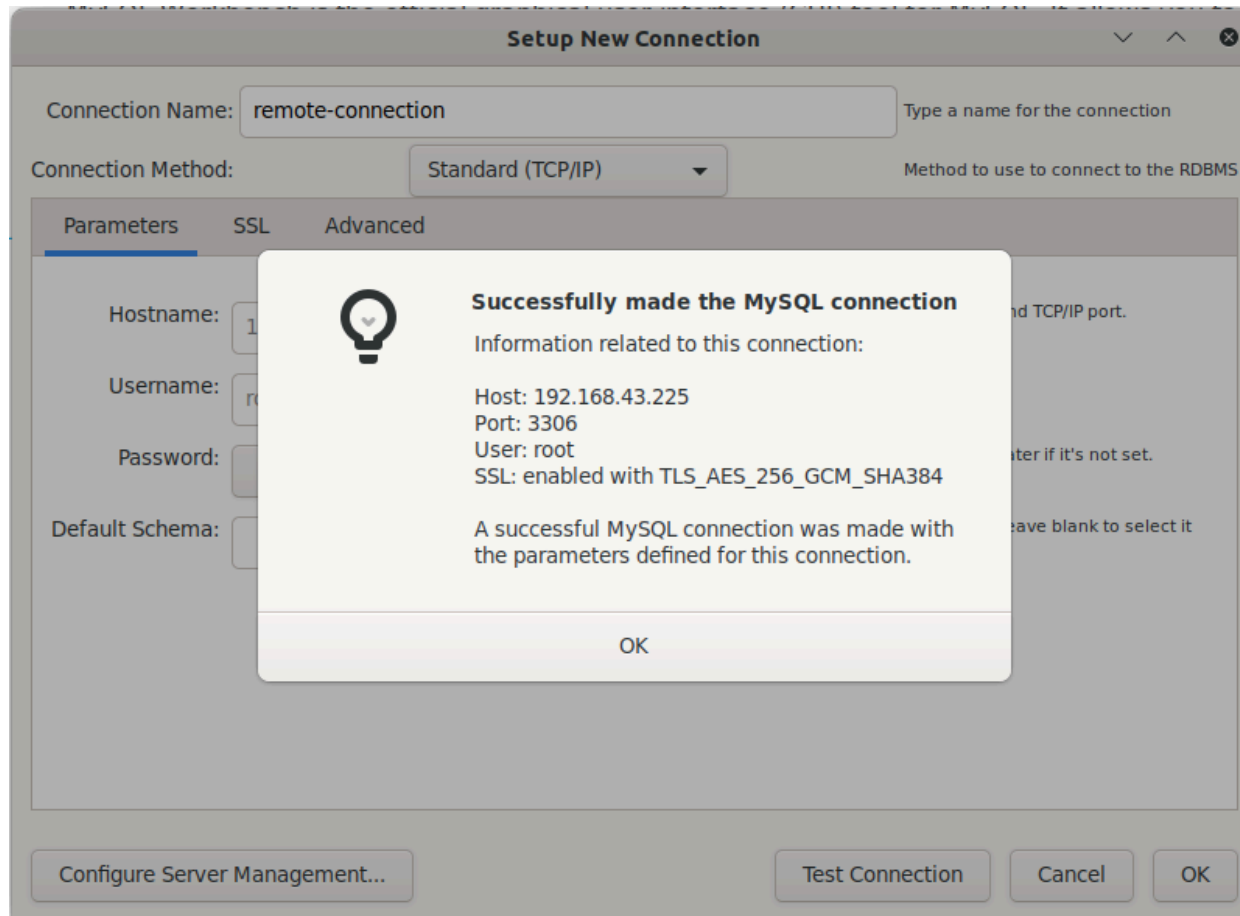
```
oneautumleaf@oneautumleaf-IdeaPad-Gaming-3-15IHU6: ~  
oneautumleaf@oneautumleaf-IdeaPad-Gaming-3-15IHU6:~$ ifconfig  
lo: flags=73<UP,LOOPBACK,RUNNING> mtu 65536  
    inet 127.0.0.1 netmask 255.0.0.0  
    inet6 ::1 prefixlen 128 scopeid 0x10<host>  
    loop txqueuelen 1000 (Local Loopback)  
    RX packets 8642 bytes 750837 (750.8 KB)  
    RX errors 0 dropped 0 overruns 0 frame 0  
    TX packets 8642 bytes 750837 (750.8 KB)  
    TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0  
  
wlp0s20f3: flags=4163<UP,BROADCAST,RUNNING,MULTICAST> mtu 1500  
    inet 192.168.43.225 netmask 255.255.255.0 broadcast 192.168.43.255  
    inet6 fe80::9650:52af:146a:7b3 prefixlen 64 scopeid 0x20<link>  
    inet6 2409:4081:2d88:294a:f153:618d:c1c0:d259 prefixlen 64 scopeid 0x0<  
<global>  
    inet6 2409:4081:2d88:294a:276:3590:9f97:42e1 prefixlen 64 scopeid 0x0<  
global>  
    ether c4:75:ab:3c:74:c2 txqueuelen 1000 (Ethernet)  
    RX packets 82524 bytes 71570787 (71.5 MB)  
    RX errors 0 dropped 0 overruns 0 frame 0  
    TX packets 56144 bytes 20466462 (20.4 MB)  
    TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0  
  
oneautumleaf@oneautumleaf-IdeaPad-Gaming-3-15IHU6:~$
```

- c. Change the bind-address of the mysql server in  
/etc/mysql/mysql.conf.d/mysqld.cnf to allow for connection from IPs other than

localhost.

```
oneautumleaf@oneautumleaf-IdeaPad-Gaming-3-15IHU6: /etc/mysql/mysql.con...
15 # * Basic Settings
14 #
13 user> > = mysql
12 # pid-file> = /var/run/mysqld/mysqld.pid
11 # socket> = /var/run/mysqld/mysqld.sock
10 # port> > = 3306
9 # datadir> = /var/lib/mysql
8
7
6 # If MySQL is running as a replication slave, this should be
5 # changed. Ref https://dev.mysql.com/doc/refman/8.0/en/server-system-variables.html#sysvar_t
4 # tmpdir> > = /tmp
3 #
2 # Instead of skip-networking the default is now to listen only on
1 # localhost which is more compatible and is not less secure.
31 bind-address = 0.0.0.0
1 mysqlx-bind-address= 127.0.0.1
2 #
3 # * Fine Tuning
4 #
5 key_buffer_size>> = 16M
6 # max_allowed_packet> = 64M
7 # thread_stack> > = 256K
8
9 # thread_cache_size = -1
10
11 # This replaces the startup script and checks MyISAM tables if needed
12 # the first time they are touched
13 myisam-recover-options = BACKUP
14
V-LINE  mysql.cnf 1 Y 46 39% 31:27 16:08
```

- d. Connect to the server machine from the client program on the client machine. We need to put in the IP of the server machine, user name and password.



5. Create a new user by your PRN e.g. 2021BTECS00001.

remote-connection

File Edit View Query Database Server Tools Scripting Help

Administration Schemas Query 1

Limit to 1000 rows

SCHEMAS

Filter objects

ads1

ads\_sample

Tables

Student

Views

Stored Procedures

Functions

customer\_management\_syst

mydemodb

programming\_lab\_2

sql\_hr

sql\_inventory

sql\_invoicing

sql\_store

sys

tree

```

1 • CREATE DATABASE IF NOT EXISTS ads_sample;
2
3 • USE ads_sample;
4
5 • CREATE TABLE IF NOT EXISTS Student (
6     PRN VARCHAR(20) PRIMARY KEY,
7     Name VARCHAR(40),
8     Marks INT
9 );
10
11 • INSERT INTO Student (PRN, Name, Marks) VALUES ("21510026", "Jay", 70);
12
13 • SELECT * FROM Student;

```

Result Grid

Filter Rows: Q

Edit: Export/Import: Wrap Cell Content: T

#	PRN	Name	Marks
1	21510026	Jay	70

Student 1

Apply Revert

Action Output

#	Time	Action	Message	Duration / Fetch
1	16:18:34	CREATE DATABASE IF NOT EXISTS ads_sample	1 row(s) affected	0.0038 sec
2	16:18:34	USE ads_sample	0 row(s) affected	0.00024 sec
3	16:18:34	CREATE TABLE IF NOT EXISTS Student ( PRN VARCHAR(...	0 row(s) affected	0.016 sec
4	16:18:34	INSERT INTO Student (PRN, Name, Marks) VALUES ("2151...	1 row(s) affected	0.0027 sec
5	16:18:34	SELECT * FROM Student LIMIT 0, 1000	1 row(s) returned	0.00020 sec / 0.000...

Object Info Session

no object selected

Query Completed

6. Create sample database, create sample tables in newly created database

remote-connection

File Edit View Query Database Server Tools Scripting Help

Administration Schemas Query 1

Limit to 1000 rows

SCHEMAS

Filter objects

ads1

ads\_sample

Tables

Student

Views

Stored Procedures

Functions

customer\_management\_syst

mydemodb

programming\_lab\_2

sql\_hr

sql\_inventory

sql\_invoicing

sql\_store

sys

tree

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7     Name VARCHAR(40),
8     Marks INT
9 );
10
11 • INSERT INTO Student (PRN, Name, Marks) VALUES ("21510026", "Jay", 70);
12
13 • SELECT * FROM Student;

```

Result Grid

Filter Rows: Q

Edit: Export/Import: Wrap Cell Content: TA

#	PRN	Name	Marks
1	21510026	Jay	70

Student 1

Action Output

#	Time	Action	Message	Duration / Fetch
1	16:18:34	CREATE DATABASE IF NOT EXISTS ads_sample	1 row(s) affected	0.0038 sec
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4	16:18:34	INSERT INTO Student (PRN, Name, Marks) VALUES ("2151...	1 row(s) affected	0.0027 sec
5	16:18:34	SELECT * FROM Student LIMIT 0, 1000	1 row(s) returned	0.00020 sec / 0.000...

Object Info Session

no object selected

Query Completed

7. Repeat steps for this new database.

remote-connection

File Edit View Query Database Server Tools Scripting Help

Administration Schemas Query 1

Limit to 1000 rows

SCHEMAS

Filter objects

ads1

ads\_sample

Tables

Student

Views

Stored Procedures

Functions

customer\_management\_syst

mydemodb

programming\_lab\_2

sql\_hr

sql\_inventory

sql\_invoicing

sql\_store

sys

tree

Query 1

```

2
3 • USE ads_sample;
4
5 • CREATE TABLE IF NOT EXISTS Student (
6     PRN VARCHAR(20) PRIMARY KEY,
7     Name VARCHAR(40),

```

Result Grid

Filter Rows: Q

Edit: Export/Import: Wrap Cell Content: I

#	PRN	Name	Marks
1	21510020	Rahul	75
2	21510021	Chinmay	68
3	21510022	Sanjay	82
4	21510023	Prasad	60
5	21510024	Ananya	73
6	21510025	Arjun	79
7	21510026	Jay	70
8	21510029	Neha	55
*	NULL	NULL	NULL

Student 2

Apply Revert

Action Output

#	Time	Action	Message	Duration / Fetch
✓ 1	16:18:34	CREATE DATABASE IF NOT EXISTS ads_sample	1 row(s) affected	0.0038 sec
✓ 2	16:18:34	USE ads_sample	0 row(s) affected	0.00024 sec
✓ 3	16:18:34	CREATE TABLE IF NOT EXISTS Student ( PRN VARCHAR(...	0 row(s) affected	0.016 sec
✓ 4	16:18:34	INSERT INTO Student (PRN, Name, Marks) VALUES ("2151...	1 row(s) affected	0.0027 sec
✓ 5	16:18:34	SELECT * FROM Student LIMIT 0, 1000	1 row(s) returned	0.00020 sec / 0.000...
✗ 6	16:21:51	INSERT INTO Student (PRN, Name, Marks) VALUES ('2151...	Error Code: 1062. Duplicate entry '21510026' for k...	0.0017 sec
✗ 7	16:21:55	INSERT INTO Student (PRN, Name, Marks) VALUES ('2151...	Error Code: 1062. Duplicate entry '21510026' for k...	0.0022 sec
✓ 8	16:22:03	INSERT INTO Student (PRN, Name, Marks) VALUES ('2151...	7 row(s) affected Records: 7 Duplicates: 0 Warnings: 0	0.0036 sec
✓ 9	16:22:05	SELECT * FROM Student LIMIT 0, 1000	8 row(s) returned	0.00021 sec / 0.000...

Object Info Session

no object selected

Query Completed

8. Demonstrate the DML on new tables.
  - a. INSERT



remote-connection

File Edit View Query Database Server Tools Scripting Help

Administration Schemas Query 1

Limit to 1000 rows

SCHEMAS

Filter objects

- ads1
- ads\_sample
  - Tables
  - Views
  - Stored Procedures
  - Functions
- customer\_management\_syst
- mydemodb
- programming\_lab\_2
- sql\_hr
- sql\_inventory
- sql\_invoicing
- sql\_store
- sys
- tree

```

4
5 CREATE TABLE IF NOT EXISTS Student (
6     PRN VARCHAR(20) PRIMARY KEY,
7     Name VARCHAR(40),
8     Marks INT
9 );
10

```

Result Grid

#	PRN	Name	Marks
1	21510020	Rahul	75
2	21510021	Chinmay	68
3	21510022	Sanjay	82
4	21510023	Prasad	60
5	21510024	Ananya	73
6	21510025	Arjun	79
7	21510029	Neha	55
*	NULL	NULL	NULL

Toggle wrapping of cell contents

Student 1

Action Output

#	Time	Action	Message	Duration / Fetch
1	16:26:10	CREATE TABLE IF NOT EXISTS Student ( PRN VARCHAR(...	Error Code: 1046. No database selected Select the default DB to be used by double-clickin...	0.00010 sec
2	16:26:18	USE ads_sample	0 row(s) affected	0.00020 sec
3	16:26:20	CREATE TABLE IF NOT EXISTS Student ( PRN VARCHAR(...	0 row(s) affected	0.015 sec
4	16:26:29	INSERT INTO Student (PRN, Name, Marks) VALUES ('2151...	7 row(s) affected Records: 7 Duplicates: 0 Warnings: 0	0.0035 sec
5	16:26:31	SELECT * FROM Student LIMIT 0, 1000	7 row(s) returned	0.00024 sec / 0.000...

Object Info Session

no object selected

Query Completed

b. SELECT

remote-connection

File Edit View Query Database Server Tools Scripting Help

Administration Schemas Query 1

Limit to 1000 rows

SCHEMAS

Filter objects

ads1

ads\_sample

Tables

Views

Stored Procedures

Functions

customer\_management\_sys

mydemodb

programming\_lab\_2

sql\_hr

sql\_inventory

sql\_invoicing

sql\_store

sys

tree

8 Marks INT

9 );

10

11 INSERT INTO Student (PRN, Name, Marks) VALUES ('21510026', 'Jay', 70);

12 INSERT INTO Student (PRN, Name, Marks) VALUES

13 ('21510020', 'Rahul', 75),

14 ('21510021', 'Chinmay', 68),

Result Grid

Filter Rows: Q

Edit: Export/Import: Wrap Cell Content: T

#	PRN	Name
1	21510020	Rahul
2	21510021	Chinmay
3	21510022	Sanjay
4	21510024	Ananya
5	21510025	Arjun
6	NULL	NULL

Student 2

Action Output

#	Time	Action	Message	Duration / Fetch
1	16:26:10	CREATE TABLE IF NOT EXISTS Student ( PRN VARCHAR(...	Error Code: 1046. No database selected Select the default DB to be used by double-clickin...	0.00010 sec
2	16:26:18	USE ads_sample	0 row(s) affected	0.00020 sec
3	16:26:20	CREATE TABLE IF NOT EXISTS Student ( PRN VARCHAR(...	0 row(s) affected	0.015 sec
4	16:26:29	INSERT INTO Student (PRN, Name, Marks) VALUES ('2151...	7 row(s) affected Records: 7 Duplicates: 0 Warnings: 0	0.0035 sec
5	16:26:31	SELECT * FROM Student LIMIT 0, 1000	7 row(s) returned	0.00024 sec / 0.000...
6	16:27:09	SELECT PRN, Name from Student WHERE Marks > 60 LIM...	5 row(s) returned	0.00025 sec / 0.000...

Object Info Session

no object selected

Query Completed

### c. UPDATE

remote-connection

File Edit View Query Database Server Tools Scripting Help

Administration Schemas Query 1

Limit to 1000 rows

SCHEMAS

Filter objects

ads1

- Tables
  - myTable
  - Students
  - students
  - studentTable
- Views
- Stored Procedures
- Functions

ads\_sample

- Tables
- Views
- Stored Procedures
- Functions

customer\_management\_syst

mydemodb

programming\_lab\_2

sql\_hr

sql\_inventory

sql\_invoicing

sql\_store

sys

tree

Object Info Session

Query Completed

```

17      ('21510023', 'Prasad', 60),
18      ('21510024', 'Ananya', 73),
19      ('21510025', 'Arjun', 79),
20      ('21510029', 'Neha', 55)
21  ;
22 • SELECT * FROM Student;
23
24 • SELECT PRN, Name from Student WHERE Marks > 60;
25
26
27
28
29

```

Result Grid

#	PRN	Name	Marks
1	21610039	Chinmay	68

Student 4

Action Output

#	Time	Action	Message
4	16:26:29	INSERT INTO Student (PRN, Name, Marks) VALUES ('2151...	7 row(s) affected Records: 7 Duplicate
5	16:26:31	SELECT * FROM Student LIMIT 0, 1000	7 row(s) returned
6	16:27:09	SELECT PRN, Name from Student WHERE Marks > 60 LIM...	5 row(s) returned
7	16:28:45	SELECT * FROM Student WHERE Name='Chinmay' LIMIT 0...	1 row(s) returned
8	16:29:00	UPDATE Student SET PRN='21610039' WHERE Name='Chi...	Error Code: 1175. You To disable safe mode
9	16:38:11	SET SQL_SAFE_UPDATES=0	0 row(s) affected
10	16:38:16	UPDATE Student SET PRN='21610039' WHERE Name='Chi...	1 row(s) affected Rows matched: 1 CH
11	16:38:17	SELECT * FROM Student WHERE Name='Chinmay' LIMIT 0...	1 row(s) returned

d. DELETE

File Edit View Query Database Server Tools Scripting Help

Administration Schemas Query 1

Limit to 1000 rows

```

33 • SELECT * FROM Student WHERE Name='Chinmay';
34 • UPDATE Student SET PRN='21610039' WHERE Name='Chinmay';
35 • SELECT * FROM Student WHERE Name='Chinmay';
36
37
38 • DELETE FROM Student WHERE Name='Jay';
39
40 • SELECT * From Student;
41

```

Result Grid

#	PRN	Name	Marks
1	21510020	Rahul	75
2	21510022	Sanjay	82
3	21510023	Prasad	60
4	21510024	Ananya	73
5	21510025	Arjun	79
6	21510029	Neha	55
7	21610039	Chinmay	68

Student 5

Action Output

#	Time	Action	Message	Duration / Fetch
6	16:27:03	SELECT PRN, Name from Student WHERE Marks > 60 LIMIT 0...	0 row(s) returned	0.00023 sec / 0.000...
7	16:28:45	SELECT * FROM Student WHERE Name='Chinmay' LIMIT 0...	1 row(s) returned	0.00022 sec / 0.000...
8	16:29:00	UPDATE Student SET PRN='21610039' WHERE Name='Chi...	Error Code: 1175. You are using safe update mode ... To disable safe mode, toggle the option in Prefere...	0.00020 sec
9	16:38:11	SET SQL_SAFE_UPDATES=0	0 row(s) affected	0.00014 sec
10	16:38:16	UPDATE Student SET PRN='21610039' WHERE Name='Chi...	1 row(s) affected Rows matched: 1 Changed: 1 Warnings: 0	0.00028 sec
11	16:38:17	SELECT * FROM Student WHERE Name='Chinmay' LIMIT 0...	1 row(s) returned	0.00025 sec / 0.000...
12	16:39:02	DELETE FROM Stduent WHERE Name='Jay'	Error Code: 1146. Table 'ads_sample.Stduent' does...	0.00029 sec
13	16:39:17	DELETE FROM Student WHERE Name='Jay'	0 row(s) affected	0.00019 sec
14	16:39:25	SELECT * From Student LIMIT 0, 1000	7 row(s) returned	0.00027 sec / 0.000...

Query Completed

- Create a simple form in ReactJS which will connect to the database created. Allows to choose available tables. Demonstrate the CRUD operations on the selected table.

Database Viewer

Select Database:

Select Table:

Rows in Student

PRN	Name	Marks	Actions
21510020	Rahul Rajendra Revanna	43	<input type="button" value="Update"/> <input type="button" value="Delete"/>
21510022	Chinmay Sanjay Patil	82	<input type="button" value="Update"/> <input type="button" value="Delete"/>
21510023	Prathamesh Basapure	60	<input type="button" value="Update"/> <input type="button" value="Delete"/>
21510024	Swapnil Mali	73	<input type="button" value="Update"/> <input type="button" value="Delete"/>
21510025	Aradhya Pitlawar	79	<input type="button" value="Update"/> <input type="button" value="Delete"/>
21510029	Aniket Khare	55	<input type="button" value="Update"/> <input type="button" value="Delete"/>
21610039	Jay Shirgupe	68	<input type="button" value="Update"/> <input type="button" value="Delete"/>

Form for Student

PRN:

Name:

Marks:

10. Demonstrate the above program on another machine configured
- We can connect the program on another machine by changing the host IP of the database

```

JS dbConfig.js x
server > JS dbConfig.js > ...
1  // dbConfig.js
2  const dbConfig = {
3    host: "192.168.43.225",
4    user: "root",
5    password: "Jay@1234",
6    port: 3306,
7  };
8
9  module.exports = dbConfig;
10

```