

CSCI 5408 DATA MANAGEMENT AND WAREHOUSING
ASSIGNMENT – 2

SUBMITTED TO: PROF. SAURABH DEY

SUBMITTED BY:
DHRUV DOSHI
B00883311

Starting the VM Instance:

Applications Mon, Jun 21 22:29

console.cloud.google.com/compute/instancesAdd?authuser=2&project=csc15408a2-317515&rif_reserved

Google Cloud Platform csc15408a2 Search products and resources

Create an instance

To create a VM instance, select one of the options:

- New VM instance**
Create a single VM instance from scratch
- New VM instance from template**
Create a single VM instance from an existing template
- New VM instance from machine image**
Create a single VM instance from an existing machine image
- Marketplace**
Deploy a ready-to-go solution onto a VM instance

Name
Name is permanent
vm-1

Labels (Optional)
+ Add label

Region
Region is permanent
us-central1 (Iowa)

Zone
Zone is permanent
us-central1-a

Machine configuration

Machine family
General-purpose | Compute-optimized | Memory-optimized | GPU
Machine types for common workloads, optimized for cost and flexibility

Series
N2
Powered by Intel Cascade Lake CPU platform

Machine type
n2-standard-2 (2 vCPU, 8 GB memory)

Machine type details:

| | vCPU | Memory | GPUs |
|---------------|------|--------|------|
| n2-standard-2 | 2 | 8 GB | - |

Confidential VM service
☐ Enable the Confidential Computing service on this VM instance.

\$57.73 monthly estimate
That's about \$0.079 hourly
Pay for what you use: No upfront costs and per second billing
[Details](#)

Choosing the Disk:

Applications Mon, Jun 21 22:30

console.cloud.google.com/compute/instancesAdd?authuser=2&project=csc15408a2-317515&rif_reserved

Google Cloud Platform csc15408a2

Create an instance

Boot disk

Select an image or snapshot to create a boot disk, or attach an existing disk. Can't find what you're looking for? Explore hundreds of VM solutions in [Marketplace](#).

Public images | Custom images | Snapshots | Existing disks

Operating system
Ubuntu

Version
Ubuntu 20.04 LTS

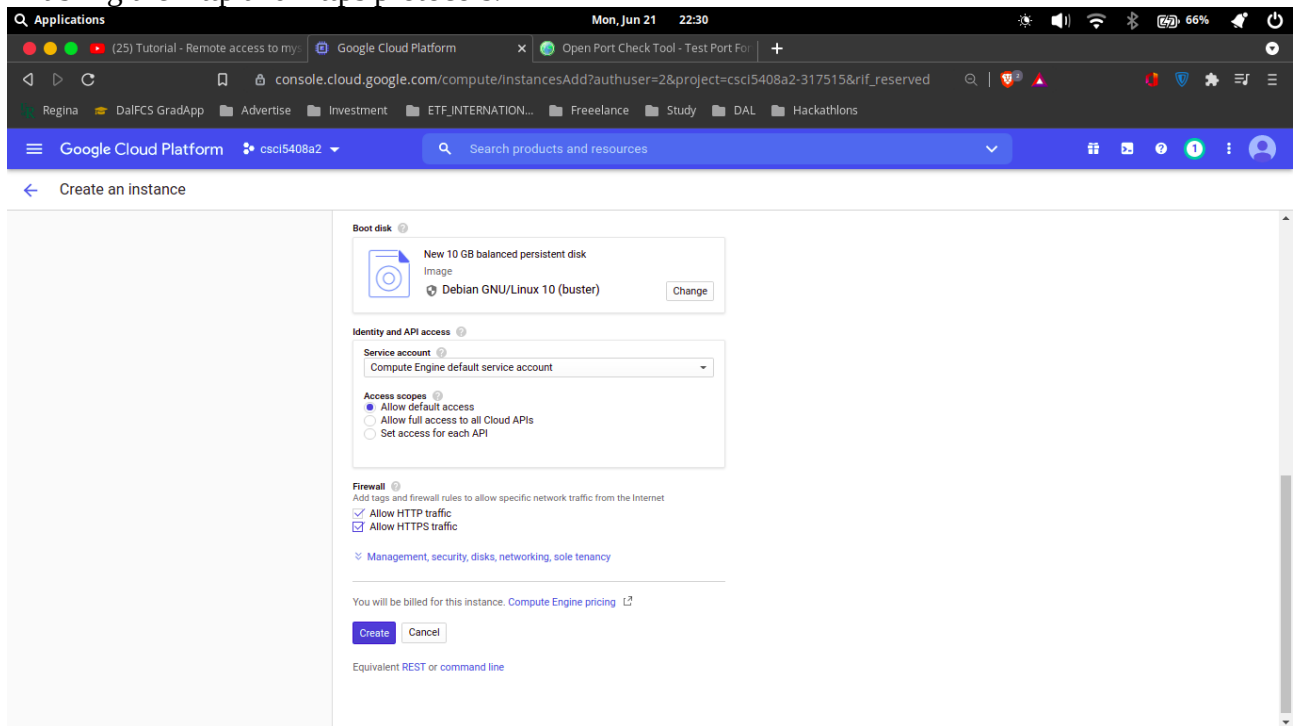
amd64 focal image built on 2021-06-10, gVNIC is required to support higher network bandwidths for distributed workloads on VMs that have attached GPUs. This flag indicates that the gVNIC driver is installed in on image - it does not add the NIC; this is done during instance creation. Both flags must be set for gVNIC to work successfully.

Boot disk type
SSD persistent disk

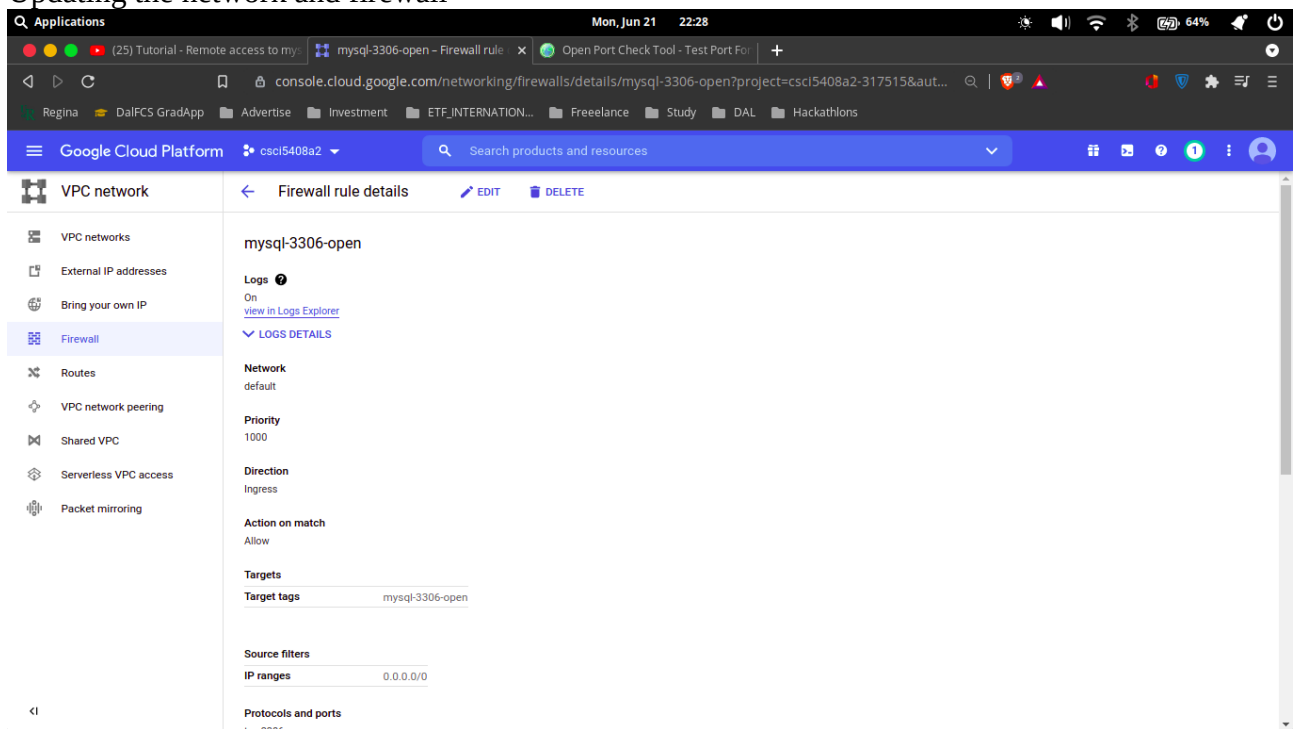
Size (GB)
10

[Select](#) [Cancel](#)

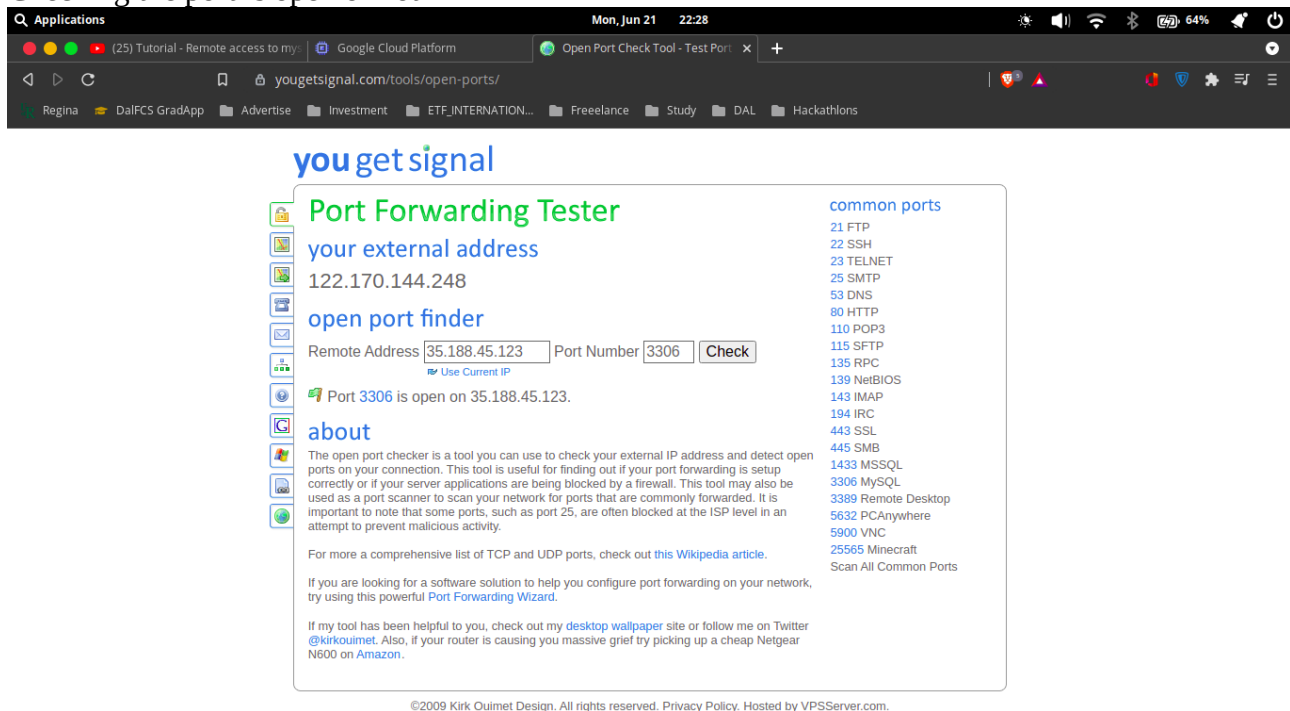
Enabling the Http and Https protocols:



Updating the network and firewall



Checking the port is open or not



yougetsignal

Port Forwarding Tester

your external address
122.170.144.248

open port finder

Remote Address Port Number

Port 3306 is open on 35.188.45.123.

about

The open port checker is a tool you can use to check your external IP address and detect open ports on your connection. This tool is useful for finding out if your port forwarding is setup correctly or if your server applications are being blocked by a firewall. This tool may also be used as a port scanner to scan your network for ports that are commonly forwarded. It is important to note that some ports, such as port 25, are often blocked at the ISP level in an attempt to prevent malicious activity.

For more a comprehensive list of TCP and UDP ports, check out [this Wikipedia article](#).

If you are looking for a software solution to help you configure port forwarding on your network, try using this powerful [Port Forwarding Wizard](#).

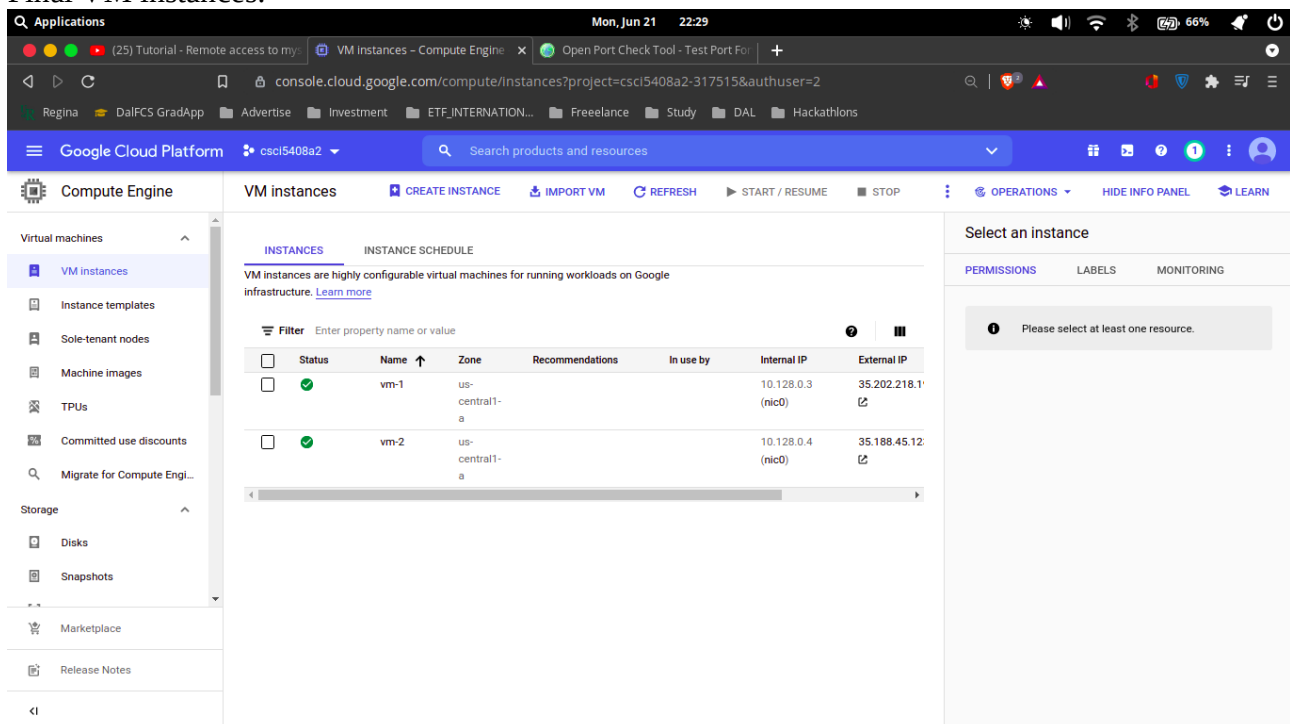
If my tool has been helpful to you, check out my [desktop wallpaper](#) site or follow me on Twitter [@kirkouimet](#). Also, if your router is causing you massive grief try picking up a cheap Netgear N600 on [Amazon](#).

common ports

- 21 FTP
- 22 SSH
- 23 TELNET
- 25 SMTP
- 53 DNS
- 80 HTTP
- 110 POP3
- 115 SFTP
- 135 RPC
- 139 NetBIOS
- 143 IMAP
- 194 IRC
- 443 SSL
- 445 SMB
- 1433 MSSQL
- 3306 MySQL
- 3389 Remote Desktop
- 5632 PCAnywhere
- 5900 VNC
- 25565 Minecraft
- Scan All Common Ports

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Final VM instances:



Google Cloud Platform

Compute Engine

VM instances

INSTANCES INSTANCE SCHEDULE

VM instances are highly configurable virtual machines for running workloads on Google infrastructure. [Learn more](#)

Filter Enter property name or value

| Status | Name | Zone | Recommendations | In use by | Internal IP | External IP |
|--------|------|---------------|-----------------|-----------|-------------------|--------------|
| ✓ | vm-1 | us-central1-a | | | 10.128.0.3 (nic0) | 35.202.218.1 |
| ✓ | vm-2 | us-central1-a | | | 10.128.0.4 (nic0) | 35.188.45.12 |

Select an instance

PERMISSIONS LABELS MONITORING

Please select at least one resource.

SSH Shell

```
root@vm-2: /home/can_dhruvdoshi - Brave
ssh.cloud.google.com/projects/csc15408a2-317515/zones/us-central1-a/instances/vm-2?useAdminProxy=true&auth...
The programs included with the Ubuntu system are free software;
the exact distribution terms for each program are described in the
individual files in /usr/share/doc/*/copyright.
Ubuntu comes with ABSOLUTELY NO WARRANTY, to the extent permitted by
applicable law.
can_dhruvdoshi@vm-2:~$ sudo su
root@vm-2:/home/can_dhruvdoshi# mysql --version
The program 'mysql' can be found in the following packages:
 * mysql-client-core-5.7
 * mariadb-client-core-10.0
Try: apt install <selected package>
root@vm-2:/home/can_dhruvdoshi# sudo apt-get -y install mysql-server
Reading package lists... Done
Building dependency tree
Reading state information... Done
The following package was automatically installed and is no longer required:
  grub-pc-bin
Use 'sudo apt autoremove' to remove it.
The following additional packages will be installed:
  libaio1 libcgi-fast-perl libcgi-pm-perl libencode-locale-perl libfcgi-perl libhtml-parser-perl
  libhtml-tagset-perl libhtml-template-perl libhttp-date-perl libhttp-message-perl libio-html-perl
  liblwp-mediatypes-perl libtimedate-perl liburi-perl mysql-client-5.7 mysql-client-core-5.7 mysql-common
  mysql-server-5.7 mysql-server-core-5.7
Suggested packages:
  libdata-dump-perl libipc-sharedcache-perl libwww-perl mailx tinyc
The following NEW packages will be installed:
  libaio1 libcgi-fast-perl libcgi-pm-perl libencode-locale-perl libfcgi-perl libhtml-parser-perl
  libhtml-tagset-perl libhtml-template-perl libhttp-date-perl libhttp-message-perl libio-html-perl
  liblwp-mediatypes-perl libtimedate-perl liburi-perl mysql-client-5.7 mysql-client-core-5.7 mysql-common
  mysql-server mysql-server-5.7 mysql-server-core-5.7
0 upgraded, 20 newly installed, 0 to remove and 0 not upgraded.
Need to get 18.0 MB of archives.
After this operation, 158 MB of additional disk space will be used.
Get:1 http://us-central1.gce.archive.ubuntu.com/ubuntu xenial-updates/main amd64 mysql-common all 5.7.33-0ubuntu0.1
6.04.1 [14.8 kB]
ObjectGet:2 http://us-central1.gce.archive.ubuntu.com/ubuntu xenial/main amd64 libaio1 amd64 0.3.110-2 [6,356 B]
No objGet:3 http://us-central1.gce.archive.ubuntu.com/ubuntu xenial-updates/main amd64 mysql-client-core-5.7 amd64 5.7.33
-0ubuntu0.16.04.1 [6,254 kB]
Get:4 http://us-central1.gce.archive.ubuntu.com/ubuntu xenial-updates/main amd64 mysql-client-5.7 amd64 5.7.33-0ubu
Duration / Fetch
SQL Editor Opened.
```

```
root@vm-2: /home/can_dhruvdoshi - Brave
ssh.cloud.google.com/projects/csc15408a2-317515/zones/us-central1-a/instances/vm-2?useAdminProxy=true&auth...
The programs included with the Ubuntu system are free software;
the exact distribution terms for each program are described in the
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root@vm-2:/home/can_dhruvdoshi# mysql --version
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  liblwp-mediatypes-perl libtimedate-perl liburi-perl mysql-client-5.7 mysql-client-core-5.7 mysql-common
  mysql-server mysql-server-5.7 mysql-server-core-5.7
0 upgraded, 20 newly installed, 0 to remove and 0 not upgraded.
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Get:1 http://us-central1.gce.archive.ubuntu.com/ubuntu xenial-updates/main amd64 mysql-common all 5.7.33-0ubuntu0.1
6.04.1 [14.8 kB]
ObjectGet:2 http://us-central1.gce.archive.ubuntu.com/ubuntu xenial/main amd64 libaio1 amd64 0.3.110-2 [6,356 B]
No objGet:3 http://us-central1.gce.archive.ubuntu.com/ubuntu xenial-updates/main amd64 mysql-client-core-5.7 amd64 5.7.33
-0ubuntu0.16.04.1 [6,254 kB]
Get:4 http://us-central1.gce.archive.ubuntu.com/ubuntu xenial-updates/main amd64 mysql-client-5.7 amd64 5.7.33-0ubu
Duration / Fetch
SQL Editor Opened.
```

```
Applications Mon, Jun 21 22:27
root@vm-2: /home/can_dhruvdoshi - Brave
ssh.cloud.google.com/projects/csci5408a2-317515/zones/us-central1-a/instances/vm-2?useAdminProxy=true&auth...
File applicable law.
can_dhruvdoshi@vm-2:~$ sudo su
root@vm-2:/home/can_dhruvdoshi# mysql --version
The program 'mysql' can be found in the following packages:
 * mysql-client-core-5.7
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  liblwp-mediatypes-perl libtimedate-perl liburi-perl mysql-client-5.7 mysql-client-core-5.7 mysql-common
  mysql-server mysql-server-core-5.7
Suggested packages:
  libdata-dump-perl libipc-sharedcache-perl libwww-perl mailx tinycat
The following NEW packages will be installed:
  libaio1 libbcgi-fast-perl libbcgi-pm-perl libencode-locale-perl libfcgi-perl libhtml-parser-perl
  libhtml-tagset-perl libhtml-template-perl libhttp-date-perl libhttp-message-perl libio-html-perl
  liblwp-mediatypes-perl libtimedate-perl liburi-perl mysql-client-5.7 mysql-client-core-5.7 mysql-common
  mysql-server mysql-server-core-5.7
0 upgraded, 20 newly installed, 0 to remove and 0 not upgraded.
Need to get 18.0 MB of archives.
After this operation, 158 MB of additional disk space will be used.
Get:1 http://us-central1.gce.archive.ubuntu.com/ubuntu xenial-updates/main amd64 mysql-common all 5.7.33-0ubuntu0.1
6.04.1 [14.8 kB]
Get:2 http://us-central1.gce.archive.ubuntu.com/ubuntu xenial/main amd64 libaio1 amd64 0.3.110-2 [6,356 B]
Get:3 http://us-central1.gce.archive.ubuntu.com/ubuntu xenial-updates/main amd64 mysql-client-core-5.7 amd64 5.7.33
-0ubuntu0.16.04.1 [6,254 kB]
Get:4 http://us-central1.gce.archive.ubuntu.com/ubuntu xenial-updates/main amd64 mysql-client-5.7 amd64 5.7.33-0ubu
ntu0.16.04.1 [1,430 kB]
Get:5 http://us-central1.gce.archive.ubuntu.com/ubuntu xenial-updates/main amd64 mysql-server-core-5.7 amd64 5.7.33
-0ubuntu0.16.04.1 [7,215 kB]
Get:6 http://us-central1.gce.archive.ubuntu.com/ubuntu xenial-updates/main amd64 mysql-server-5.7 amd64 5.7.33-0ubu
ntu0.16.04.1 [2,423 kB]
Get:7 http://us-central1.gce.archive.ubuntu.com/ubuntu xenial/main amd64 libhtml-tagset-perl all 3.20-2 [13.5 kB]
Get:8 http://us-central1.gce.archive.ubuntu.com/ubuntu xenial/main amd64 liburi-perl all 1.71-1 [76.9 kB]
SQL Editor Opened.
```

```
Applications Mon, Jun 21 22:27
root@vm-2: /home/can_dhruvdoshi - Brave
ssh.cloud.google.com/projects/csci5408a2-317515/zones/us-central1-a/instances/vm-2?useAdminProxy=true&auth...
File Setting up libencode-locale-perl (1.05-1) ...
Setting up libhtml-template-perl (2.95-2) ...
Setting up libtimedate-perl (2.3000-2) ...
Setting up libhttp-date-perl (6.02-1) ...
Setting up libio-html-perl (1.001-1) ...
Setting up liblwp-mediatypes-perl (6.02-1) ...
Setting up libhttp-message-perl (6.11-1) ...
Setting up mysql-server (5.7.33-0ubuntu0.16.04.1) ...
Processing triggers for libc-bin (2.23-0ubuntu11.2) ...
Processing triggers for ureadahead (0.100.0-19.1) ...
Processing triggers for systemd (229-4ubuntu21.31) ...
root@vm-2:/home/can_dhruvdoshi# nano /etc/mysql/mysql.conf.d/mysqld.cnf
root@vm-2:/home/can_dhruvdoshi# service mysql restart
root@vm-2:/home/can_dhruvdoshi# mysql -u root -p
Enter password:
Welcome to the MySQL monitor.  Commands end with ; or \g.
Your MySQL connection id is 3
Server version: 5.7.33-0ubuntu0.16.04.1 (Ubuntu)

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Oracle is a registered trademark of Oracle Corporation and/or its
affiliates. Other names may be trademarks of their respective
owners.

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

mysql> ^C
mysql> create user 'remote'@'%' identified by 'remote';
Query OK, 0 rows affected (0.00 sec)

mysql> grant all privileges on *.* to 'remote'@'%' with grant options;
ERROR 1064 (42000): You have an error in your SQL syntax; check the manual that corresponds to your MySQL server ve
rsion for the right syntax to use near 'options' at line 1
mysql> grant all privileges on *.* to 'remote'@'%' with grant option;
Query OK, 0 rows affected (0.00 sec)

mysql> flush privileges;
Query OK, 0 rows affected (0.00 sec)

mysql> \q
Bye
root@vm-2:/home/can_dhruvdoshi#
SQL Editor Opened.
```

```
Applications Mon, Jun 21 22:27
root@vm-2:/home/can_dhruvdoshi - Brave
ssh.cloud.google.com/projects/csci5408a2-317515/zones/us-central1-a/instances/vm-2?useAdminProxy=true&auth...
File [Setting up libencode-locale-perl (1.05-1) ...
Setting up libhtml-template-perl (2.96-2) ...
Setting up libtime-date-perl (2.3000-2) ...
Setting up libhttp-date-perl (6.02-1) ...
MANA: Setting up libio-html-perl (1.001-1) ...
Setting up liblwp-mediatypes-perl (6.02-1) ...
Setting up libhttp-message-perl (6.11-1) ...
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Processing triggers for ureadahead (0.100.0-19.1) ...
Processing triggers for systemd (229-4ubuntu21.31) ...
root@vm-2:/home/can_dhruvdoshi# nano /etc/mysql/mysql.conf.d/mysqld.cnf
root@vm-2:/home/can_dhruvdoshi# service mysql restart
root@vm-2:/home/can_dhruvdoshi# mysql -u root -p
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mysql> grant all privileges on *.* to 'remote'@'%' with grant option;
Query OK, 0 rows affected (0.00 sec)

mysql> flush privileges;
Query OK, 0 rows affected (0.00 sec)

Object
mysql> \q
No ob: Bye
root@vm-2:/home/can_dhruvdoshi#
```

```
Applications Mon, Jun 21 22:27
root@vm-2:/home/can_dhruvdoshi - Brave
ssh.cloud.google.com/projects/csci5408a2-317515/zones/us-central1-a/instances/vm-2?useAdminProxy=true&auth...
File [Setting up libencode-locale-perl (1.05-1) ...
Setting up libhtml-template-perl (2.95-2) ...
Setting up libtime-date-perl (2.3000-2) ...
Setting up libhttp-date-perl (6.02-1) ...
MANA: Setting up libio-html-perl (1.001-1) ...
Setting up liblwp-mediatypes-perl (6.02-1) ...
Setting up libhttp-message-perl (6.11-1) ...
Setting up mysql-server (5.7.33-0ubuntu0.16.04.1) ...
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Processing triggers for ureadahead (0.100.0-19.1) ...
Processing triggers for systemd (229-4ubuntu21.31) ...
root@vm-2:/home/can_dhruvdoshi# nano /etc/mysql/mysql.conf.d/mysqld.cnf
root@vm-2:/home/can_dhruvdoshi# service mysql restart
root@vm-2:/home/can_dhruvdoshi# mysql -u root -p
Enter password:
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Query OK, 0 rows affected (0.00 sec)

mysql> flush privileges;
Query OK, 0 rows affected (0.00 sec)

Object
mysql> \q
No ob: Bye
root@vm-2:/home/can_dhruvdoshi#
```

```
Applications Mon, Jun 21 22:27 root@vm-2: /home/can_dhruvdoshi - Brave
ssh.cloud.google.com/projects/cscd5408a2-317515/zones/us-central1-a/instances/vm-2?useAdminProxy=true&auth...
File ESetting up libencode-locale-perl (1.05-1) ...
Setting up libhtml-template-perl (2.95-2) ...
Setting up libtimedate-perl (2.3000-2) ...
Setting up libhttp-date-perl (6.02-1) ...
MANASetting up libio-html-perl (1.001-1) ...
Setting up liblwp-mediatypes-perl (6.02-1) ...
Setting up libhttp-message-perl (6.11-1) ...
Setting up mysql-server (5.7.33-0ubuntu0.16.04.1) ...
Processing triggers for libc-bin (2.23-0ubuntu11.2) ...
Processing triggers for ureadahead (0.100.0-19.1) ...
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root@vm-2:/home/can_dhruvdoshi# nano /etc/mysql/mysql.conf.d/mysqld.cnf
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mysql> flush privileges;
Query OK, 0 rows affected (0.00 sec)

Object
mysql> \q
No obj
Bye
root@vm-2:/home/can_dhruvdoshi#
```

```
Applications Mon, Jun 21 22:27 root@vm-2: /home/can_dhruvdoshi - Brave
ssh.cloud.google.com/projects/cscd5408a2-317515/zones/us-central1-a/instances/vm-2?useAdminProxy=true&auth...
File ESetting up libencode-locale-perl (1.05-1) ...
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Setting up libtimedate-perl (2.3000-2) ...
Setting up libhttp-date-perl (6.02-1) ...
MANASetting up libio-html-perl (1.001-1) ...
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owners.

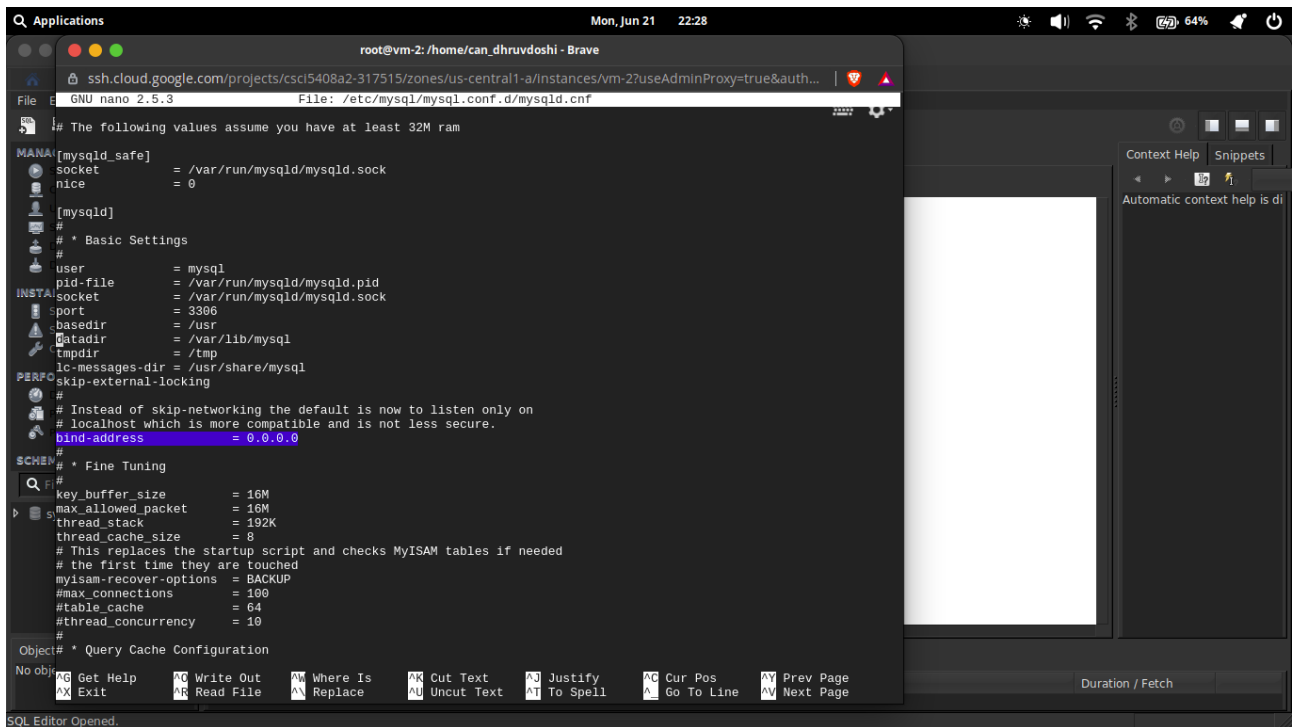
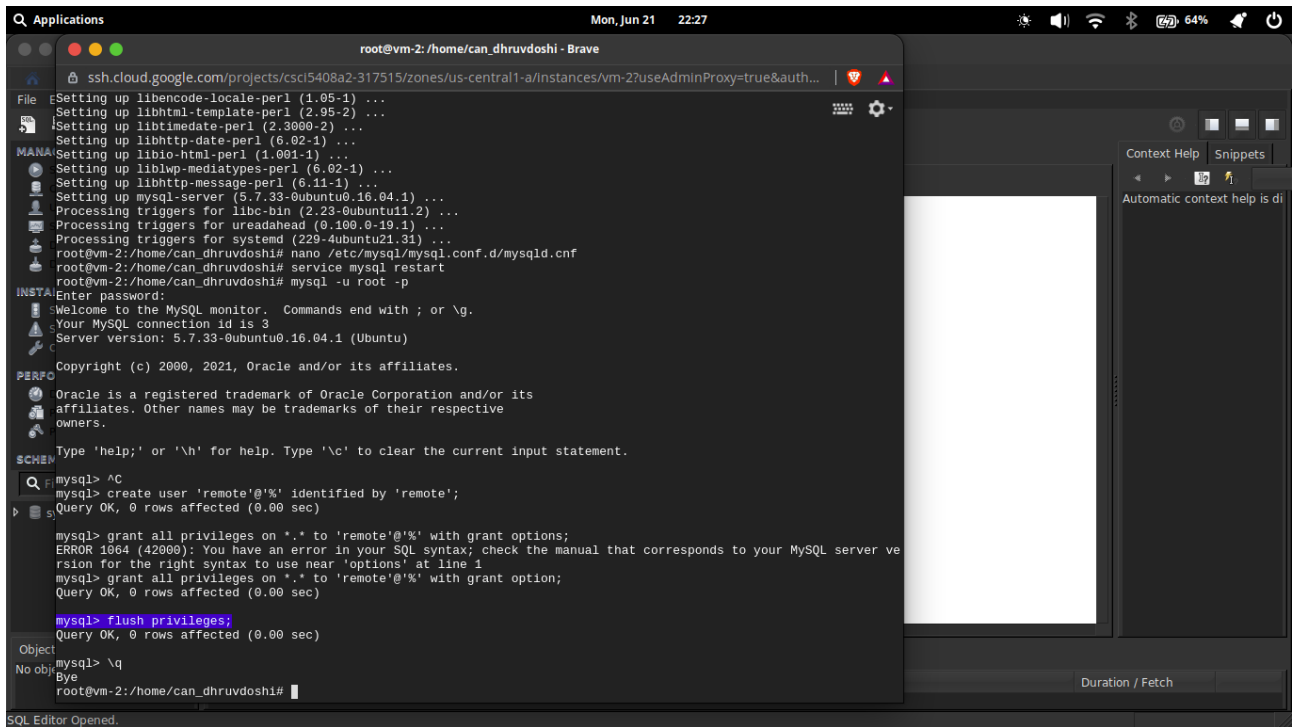
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mysql> create user 'remote'@'%' identified by 'remote';
Query OK, 0 rows affected (0.00 sec)

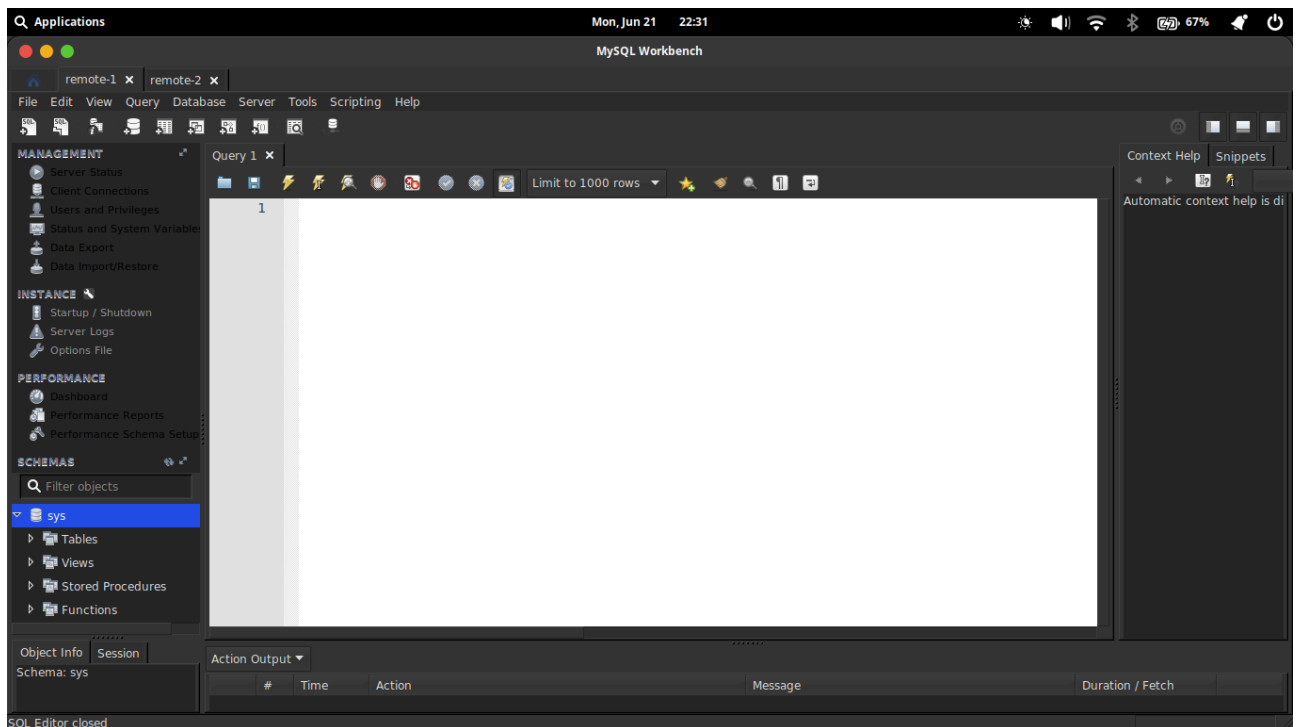
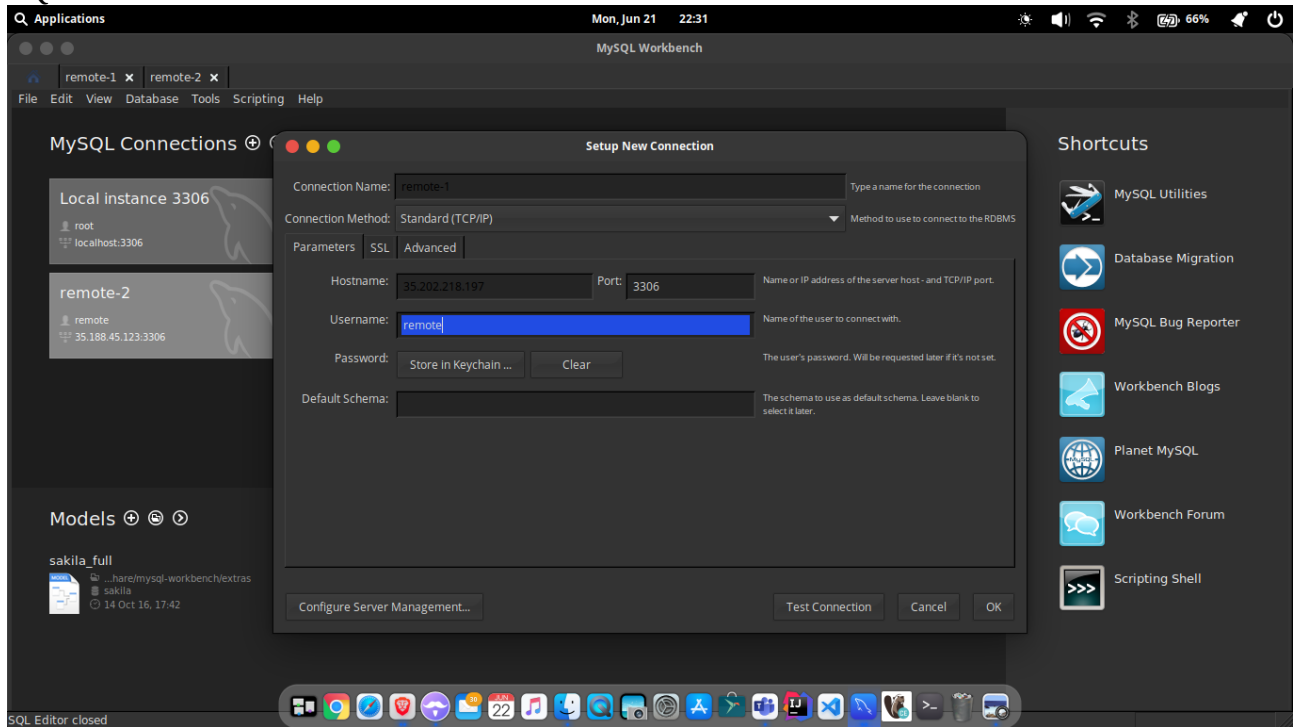
mysql> grant all privileges on *.* to 'remote'@'%' with grant options;
ERROR 1064 (42000): You have an error in your SQL syntax; check the manual that corresponds to your MySQL server ve
rsion for the right syntax to use near 'options' at line 1
mysql> grant all privileges on *.* to 'remote'@'%' with grant option;
Query OK, 0 rows affected (0.00 sec)

mysql> flush privileges;
Query OK, 0 rows affected (0.00 sec)

Object
mysql> \q
No obj
Bye
root@vm-2:/home/can_dhruvdoshi#
```

SQL Workbench



Applications Mon, Jun 21 22:48 MySQL Workbench

remote-1 x remote-2 x

File Edit View Query Database Server Tools Scripting Help

MANAGEMENT

- Server Status
- Client Connections
- Users and Privileges
- Status and System Variables
- Data Export
- Data Import/Restore

INSTANCE

- Startup / Shutdown
- Server Logs
- Options File

PERFORMANCE

- Dashboard
- Performance Reports
- Performance Schema Setup

SCHEMAS

Filter objects

Assignment_db

- Tables
- Views
- Stored Procedures
- Functions

Object Info Session

No object selected

Query 1 x SQL File 1* x

Don't Limit

```

1 CREATE TABLE customerdb(
2     customer_id          VARCHAR(32)
3     ,customer_unique_id  VARCHAR(32)
4     ,customer_zip_code_prefix INTEGER
5     ,customer_city       VARCHAR(32)
6     ,customer_state      VARCHAR(2)
7 );
8 INSERT INTO customerdb(customer_id,customer_unique_id,customer_zip_code_prefix,customer_city,c
9 INSERT INTO customerdb(customer_id,customer_unique_id,customer_zip_code_prefix,customer_city,c
10 INSERT INTO customerdb(customer_id,customer_unique_id,customer_zip_code_prefix,customer_city,c
11 INSERT INTO customerdb(customer_id,customer_unique_id,customer_zip_code_prefix,customer_city,c
12 INSERT INTO customerdb(customer_id,customer_unique_id,customer_zip_code_prefix,customer_city,c
13 INSERT INTO customerdb(customer_id,customer_unique_id,customer_zip_code_prefix,customer_city,c
14 INSERT INTO customerdb(customer_id,customer_unique_id,customer_zip_code_prefix,customer_city,c

```

Action Output

| # | Time | Action | Message | Duration / Fetch |
|--------|----------|---|----------------------|------------------|
| ✓ 1650 | 22:48:00 | INSERT INTO customerdb(customer_id,customer_unique_id,cu... | 1 row(s) affected | 0.290 sec |
| ✓ 1651 | 22:48:00 | INSERT INTO customerdb(customer_id,customer_unique_id,cu... | 1 row(s) affected | 0.289 sec |
| ✓ 1652 | 22:48:01 | INSERT INTO customerdb(customer_id,customer_unique_id,cu... | 1 row(s) affected | 0.289 sec |
| ✓ 1653 | 22:48:01 | INSERT INTO customerdb(customer_id,customer_unique_id,cu... | 1 row(s) affected | 0.289 sec |
| ✗ 1654 | 22:48:01 | INTERRUPT | OK - Query cancelled | 0.278 sec |
| ✓ 1655 | 22:48:01 | INSERT INTO customerdb(customer_id,customer_unique_id,cu... | 1 row(s) affected | 0.281 sec |
| ✓ 1656 | 22:48:01 | INSERT INTO customerdb(customer_id,customer_unique_id,cu... | 1 row(s) affected | 0.279 sec |

Query Cancelled

Applications Mon, Jun 21 22:49 MySQL Workbench

remote-1 x remote-2 x

File Edit View Query Database Server Tools Scripting Help

MANAGEMENT

- Server Status
- Client Connections
- Users and Privileges
- Status and System Variables
- Data Export
- Data Import/Restore

INSTANCE

- Startup / Shutdown
- Server Logs
- Options File

PERFORMANCE

- Dashboard
- Performance Reports
- Performance Schema Setup

SCHEMAS

Filter objects

Assignment_db

- Tables
- customerdb
- Views
- Stored Procedures

Object Info Session

No object selected

Query 1 x SQL File 1* x

Don't Limit

```

1 CREATE TABLE geolocation(
2     geolocation_zip_code_prefix INTEGER
3     ,geolocation_lat          VARCHAR(17)
4     ,geolocation_lng          VARCHAR(17)
5     ,geolocation_city         VARCHAR(9)
6     ,geolocation_state        VARCHAR(2)
7 );
8 INSERT INTO geolocation(geolocation_zip_code_prefix,geolocation_lat,geolocation_lng,geolocatio
9 INSERT INTO geolocation(geolocation_zip_code_prefix,geolocation_lat,geolocation_lng,geolocatio
10 INSERT INTO geolocation(geolocation_zip_code_prefix,geolocation_lat,geolocation_lng,geolocatio
11 INSERT INTO geolocation(geolocation_zip_code_prefix,geolocation_lat,geolocation_lng,geolocatio
12 INSERT INTO geolocation(geolocation_zip_code_prefix,geolocation_lat,geolocation_lng,geolocatio
13 INSERT INTO geolocation(geolocation_zip_code_prefix,geolocation_lat,geolocation_lng,geolocatio
14 INSERT INTO geolocation(geolocation_zip_code_prefix,geolocation lat,geolocation_lng,geolocatio

```

Action Output

| # | Time | Action | Message | Duration / Fetch |
|--------|----------|--|---|------------------|
| ✓ 1650 | 22:48:01 | INSERT INTO customerdb(customer_id,customer_unique_id,cu... | 1 row(s) affected | 0.279 sec |
| 5 1657 | 22:48:02 | INSERT INTO customerdb(customer_id,customer_unique_id,cu... | Running... | ? |
| ✗ 1658 | 22:48:02 | INSERT INTO customerdb(customer_id,customer_unique_id,cu... | Error: Query execution has been stopped, the connec... | |
| ✓ 1659 | 22:48:21 | CREATE TABLE mytable(geolocation_zip_code_prefix INTEG... | 0 row(s) affected | 0.303 sec |
| ✓ 1660 | 22:48:21 | INSERT INTO mytable(geolocation_zip_code_prefix,geolocation... | 1 row(s) affected | 0.292 sec |
| ✓ 1661 | 22:48:21 | INSERT INTO mytable(geolocation_zip_code_prefix,geolocation... | 1 row(s) affected | 0.287 sec |
| ✗ 1662 | 22:48:22 | INSERT INTO mytable(geolocation_zip_code_prefix,geolocation... | Error Code: 1062. Duplicate entry '1046' for key 'PRIM... | 0.298 sec |
| ✓ 1663 | 22:49:12 | DROP TABLE `Assignment_db`.`mytable` | 0 row(s) affected | 0.298 sec |

Query Completed

Applications Mon, Jun 21 22:53 MySQL Workbench

remote-1 x remote-2 x

File Edit View Query Database Server Tools Scripting Help

MANAGEMENT

- Server Status
- Client Connections
- Users and Privileges
- Status and System Variable
- Data Export
- Data Import/Restore

INSTANCE

- Startup / Shutdown
- Server Logs
- Options File

PERFORMANCE

- Dashboard
- Performance Reports
- Performance Schema Setup

SCHEMAS

Filter objects

Assignment-remote-2

- Tables
- Views
- Stored Procedures
- Functions

Object Info Session

Schema: Assignment-remote-2

Query 1

```
1 CREATE TABLE order_listdb(
2   order_id          VARCHAR(32)
3   ,order_item_id    INTEGER
4   ,product_id       VARCHAR(32)
5   ,seller_id        VARCHAR(32)
6   ,shipping_limit_date VARCHAR(19)
7   ,price            NUMERIC(7,2)
8   ,freight_value    NUMERIC(6,2)
9 );
10 INSERT INTO order_listdb(order_id,order_item_id,product_id,seller_id,shipping_limit_date,price
11 INSERT INTO order_listdb(order_id,order_item_id,product_id,seller_id,shipping_limit_date,price
12 INSERT INTO order_listdb(order_id,order_item_id,product_id,seller_id,shipping_limit_date,price
13 INSERT INTO order_listdb(order_id,order_item_id,product_id,seller_id,shipping_limit_date,price
14 INSERT INTO order_listdb(order_id,order_item_id,product_id,seller_id,shipping_limit_date,price
15 INSERT INTO order_listdb(order_id,order_item_id,product_id,seller_id,shipping_limit_date,price
```

Context Help Snippets

Automatic context help is di

Action Output

| # | Time | Action | Message | Duration / Fetch |
|---|----------|--|-------------------|------------------|
| 1 | 22:52:57 | CREATE TABLE order_listdb(order_id VARCHAR(32) ... | 0 row(s) affected | 0.336 sec |
| 2 | 22:52:57 | INSERT INTO order_listdb(order_id,order_item_id,product_id,se... | 1 row(s) affected | 0.344 sec |
| 3 | 22:52:57 | INSERT INTO order_listdb(order_id,order_item_id,product_id,se... | 1 row(s) affected | 0.363 sec |
| 4 | 22:52:58 | INSERT INTO order_listdb(order_id,order_item_id,product_id,se... | 1 row(s) affected | 0.339 sec |
| 5 | 22:52:58 | INSERT INTO order_listdb(order_id,order_item_id,product_id,se... | 1 row(s) affected | 0.306 sec |
| 6 | 22:52:58 | INSERT INTO order_listdb(order_id,order_item_id,product_id,se... | 1 row(s) affected | 0.364 sec |
| 7 | 22:52:59 | INSERT INTO order_listdb(order_id,order_item_id,product_id,se... | 1 row(s) affected | 0.322 sec |

Executing Query...

Applications Mon, Jun 21 22:53 MySQL Workbench

remote-1 x remote-2 x

File Edit View Query Database Server Tools Scripting Help

MANAGEMENT

- Server Status
- Client Connections
- Users and Privileges
- Status and System Variable
- Data Export
- Data Import/Restore

INSTANCE

- Startup / Shutdown
- Server Logs
- Options File

PERFORMANCE

- Dashboard
- Performance Reports
- Performance Schema Setup

SCHEMAS

Filter objects

Assignment-remote-2

- Tables
- Views
- Stored Procedures
- Functions

Object Info Session

Schema: Assignment-remote-2

Query 1

```
1 CREATE TABLE order_listdb(
2   order_id          VARCHAR(32)
3   ,order_item_id    INTEGER
4   ,product_id       VARCHAR(32)
5   ,seller_id        VARCHAR(32)
6   ,shipping_limit_date VARCHAR(19)
7   ,price            NUMERIC(7,2)
8   ,freight_value    NUMERIC(6,2)
9 );
10 INSERT INTO order_listdb(order_id,order_item_id,product_id,seller_id,shipping_limit_date,price
11 INSERT INTO order_listdb(order_id,order_item_id,product_id,seller_id,shipping_limit_date,price
12 INSERT INTO order_listdb(order_id,order_item_id,product_id,seller_id,shipping_limit_date,price
13 INSERT INTO order_listdb(order_id,order_item_id,product_id,seller_id,shipping_limit_date,price
14 INSERT INTO order_listdb(order_id,order_item_id,product_id,seller_id,shipping_limit_date,price
15 INSERT INTO order_listdb(order_id,order_item_id,product_id,seller_id,shipping_limit_date,price
```

Context Help Snippets

Automatic context help is di

Action Output

| # | Time | Action | Message | Duration / Fetch |
|---|----------|--|-------------------|------------------|
| 1 | 22:52:57 | CREATE TABLE order_listdb(order_id VARCHAR(32) ... | 0 row(s) affected | 0.336 sec |
| 2 | 22:52:57 | INSERT INTO order_listdb(order_id,order_item_id,product_id,se... | 1 row(s) affected | 0.344 sec |
| 3 | 22:52:57 | INSERT INTO order_listdb(order_id,order_item_id,product_id,se... | 1 row(s) affected | 0.363 sec |
| 4 | 22:52:58 | INSERT INTO order_listdb(order_id,order_item_id,product_id,se... | 1 row(s) affected | 0.339 sec |
| 5 | 22:52:58 | INSERT INTO order_listdb(order_id,order_item_id,product_id,se... | 1 row(s) affected | 0.306 sec |
| 6 | 22:52:58 | INSERT INTO order_listdb(order_id,order_item_id,product_id,se... | 1 row(s) affected | 0.364 sec |
| 7 | 22:52:59 | INSERT INTO order_listdb(order_id,order_item_id,product_id,se... | 1 row(s) affected | 0.322 sec |

Executing Query...

Applications Mon, Jun 21 23:13 MySQL Workbench

remote-1 x remote-2 x

File Edit View Query Database Server Tools Scripting Help

MANAGEMENT

- Server Status
- Client Connections
- Users and Privileges
- Status and System Variables
- Data Export
- Data Import/Restore

INSTANCE

- Startup / Shutdown
- Server Logs
- Options File

PERFORMANCE

- Dashboard
- Performance Reports
- Performance Schema Setup

SCHEMAS

Filter objects

Assignment-remote-2

- Tables
- Views
- Stored Procedures
- Functions

Object Info Session

Schema: Assignment-remote-2

Query 1 x SQL File 1* x SQL File 2* x SQL File 3* x

Limit to 1000 rows

```
1 CREATE TABLE ordersdataset_db(
2   order_id VARCHAR(32)
3   ,customer_id VARCHAR(32)
4   ,order_status VARCHAR(11)
5   ,order_purchase_timestamp VARCHAR(19)
6   ,order_approved_at VARCHAR(19)
7   ,order_delivered_carrier_date VARCHAR(19)
8   ,order_delivered_customer_date VARCHAR(19)
9   ,order_estimated_delivery_date VARCHAR(19)
10 );
11 INSERT INTO ordersdataset_db(order_id,customer_id,order_status,order_purchase_timestamp,order_
12 INSERT INTO ordersdataset_db(order_id,customer_id,order_status,order_purchase_timestamp,order_
13 INSERT INTO ordersdataset_db(order_id,customer_id,order_status,order_purchase_timestamp,order_
14 INSERT INTO ordersdataset_db(order_id,customer_id,order_status,order_purchase_timestamp,order_
15 INSERT INTO ordersdataset_db(order_id,customer_id,order_status,order_purchase_timestamp,order_
```

Context Help Snippets

Automatic context help is di

Action Output

| # | Time | Action | Message | Duration / Fetch |
|--------|----------|---|-------------------|------------------|
| ✓ 3741 | 23:13:44 | INSERT INTO order_paymentdb(order_id,payment_sequential,... | 1 row(s) affected | 0.300 sec |
| ✓ 3742 | 23:13:44 | INSERT INTO order_paymentdb(order_id,payment_sequential,... | 1 row(s) affected | 0.299 sec |
| ✓ 3743 | 23:13:44 | INSERT INTO order_paymentdb(order_id,payment_sequential,... | 1 row(s) affected | 0.300 sec |
| ✓ 3744 | 23:13:45 | INSERT INTO order_paymentdb(order_id,payment_sequential,... | 1 row(s) affected | 0.300 sec |
| ✓ 3745 | 23:13:45 | INSERT INTO order_paymentdb(order_id,payment_sequential,... | 1 row(s) affected | 0.300 sec |
| ✓ 3746 | 23:13:45 | INSERT INTO order_paymentdb(order_id,payment_sequential,... | 1 row(s) affected | 0.298 sec |
| 5 3747 | 23:13:45 | INSERT INTO order_paymentdb(order_id,payment_sequential,... | Running... | ? |

Added new script editor

VM1

In this instance there are two tables which does not have any primary key or constraints. However there are no data conflicts which could be found as it is in the highest normal form with no data duplications. Here I have updated the constraints with new primary key in one table and a composite primary key in geological data table.

VM2

In this part also there is also there is no requirement of cleaning of data as they are almost in the highest normal form possible. Continuing with there we could add some relationships between these all tables.

Taking a sceraio where we have a table for orders which would communicate with all other tables and then we could have a whole schema where there are relationships.

Here also we have added multiple primary keys across all of the tables. I used to work with reverse engineering and then make the suitable changes further on I used forward engineering to move those changes to the database table.

Here at the end of the work we have the whole systems which is interconnected.

Dump Files:

There are two initial dump files which had been created with the raw data after moving it into the sql from the csv provided files

There are another two dump files after the update.

REFERENCES:

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[2]K. Ouimet, "Open Port Check Tool - Test Port Forwarding on Your Router", *Yougetsignal.com*, 2021. [Online]. Available: <https://www.yougetsignal.com/tools/open-ports/>. [Accessed: 21- Jun- 2021]

[3]"Before you continue to YouTube", *Youtu.be*, 2021. [Online]. Available: https://youtu.be/8oF4ku_7vxM. [Accessed: 21- Jun- 2021]