Security & users management:

SQL(Structured Query Language) Commands:

1. DDL- Data Definition Language- DR CAT (DROP, RENAME,CREATE,ALTER,TRUNCATE)

2. DML- Data Manipulation Language-INSERT, UPDATE, DELETE

3. DQL (DRL) -Data Query Language- SELECT

4. TCL- Transaction Control Language-Commit, Rollback

5. DCL-Data Control Language - Grant, Revoke

5. DCL-Data Control Language - Grant, Revoke

System Databases

The following databases exist for MySQL's use. You may read (`SELECT`) them, but you must not write (`INSERT`/`UPDATE`/`DELETE`) the tables in them. (There are a few exceptions.)

- `mysql` -- repository for `GRANT` info and some other things.
- `information_schema` -- The tables here are 'virtual' in the sense that they are actually manifested by in-memory structures. Their contents include the schema for all tables.
- `performance_schema`

```
mysql> show databases;

+--------------------+
| Database           |
+--------------------+
| information_schema |
| mysql              |
| performance_schema |
| sys                |
| test               |
+--------------------+
5 rows in set (0.20 sec)


mysql>

mysql>

mysql>

mysql> use information_schema;

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>

mysql>

mysql> show tables;

+---------------------------------------+
| Tables_in_information_schema          |
```

```
+--------------------------------------+
| CHARACTER_SETS                       |
| COLLATIONS                           |
| COLLATION_CHARACTER_SET_APPLICABILITY |
| COLUMNS                              |
| COLUMN_PRIVILEGES                    |
| ENGINES                              |
| EVENTS                               |
| FILES                                |
| GLOBAL_STATUS                        |
| GLOBAL_VARIABLES                     |
| KEY_COLUMN_USAGE                     |
| OPTIMIZER_TRACE                      |
| PARAMETERS                           |
| PARTITIONS                           |
| PLUGINS                              |
| PROCESSLIST                          |
| PROFILING                            |
| REFERENTIAL_CONSTRAINTS              |
| ROUTINES                             |
| SCHEMATA                             |
| SCHEMA_PRIVILEGES                    |
| SESSION_STATUS                       |
| SESSION_VARIABLES                    |
| STATISTICS                           |
```

| TABLES |

| TABLESPACES |

| TABLE_CONSTRAINTS |

| TABLE_PRIVILEGES |

| TRIGGERS |

| USER_PRIVILEGES |

| VIEWS |

| INNODB_LOCKS |

| INNODB_TRX |

| INNODB_SYS_DATAFILES |

| INNODB_FT_CONFIG |

| INNODB_SYS_VIRTUAL |

| INNODB_CMP |

| INNODB_FT_BEING_DELETED |

| INNODB_CMP_RESET |

| INNODB_CMP_PER_INDEX |

| INNODB_CMPMEM_RESET |

| INNODB_FT_DELETED |

| INNODB_BUFFER_PAGE_LRU |

| INNODB_LOCK_WAITS |

| INNODB_TEMP_TABLE_INFO |

| INNODB_SYS_INDEXES |

| INNODB_SYS_TABLES |

| INNODB_SYS_FIELDS |

| INNODB_CMP_PER_INDEX_RESET |

```
| INNODB_BUFFER_PAGE              |

| INNODB_FT_DEFAULT_STOPWORD      |

| INNODB_FT_INDEX_TABLE           |

| INNODB_FT_INDEX_CACHE           |

| INNODB_SYS_TABLESPACES          |

| INNODB_METRICS                  |

| INNODB_SYS_FOREIGN_COLS         |

| INNODB_CMPMEM                   |

| INNODB_BUFFER_POOL_STATS        |

| INNODB_SYS_COLUMNS              |

| INNODB_SYS_FOREIGN              |

| INNODB_SYS_TABLESTATS           |

+-------------------------------------+

61 rows in set (0.00 sec)


mysql> show databases;

+--------------------+

| Database           |

+--------------------+

| information_schema |

| mysql              |

| performance_schema |

| sys                |

| test               |

+--------------------+
```

5 rows in set (0.00 sec)

mysql> use mysql;

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>

mysql>

mysql> show tables;

```
+--------------------------+
| Tables_in_mysql          |
+--------------------------+
| columns_priv             |
| db                       |
| engine_cost              |
| event                    |
| func                     |
| general_log              |
| gtid_executed            |
| help_category            |
| help_keyword             |
| help_relation            |
| help_topic               |
| innodb_index_stats       |
```

```
| innodb_table_stats     |

| ndb_binlog_index       |

| plugin                 |

| proc                   |

| procs_priv             |

| proxies_priv           |

| server_cost            |

| servers                |

| slave_master_info      |

| slave_relay_log_info   |

| slave_worker_info      |

| slow_log               |

| tables_priv            |

| time_zone              |

| time_zone_leap_second  |

| time_zone_name         |

| time_zone_transition   |

| time_zone_transition_type |

| user                   |

+------------------------+

31 rows in set (0.01 sec)


mysql> show databases;

+--------------------+

| Database           |
```

```
+--------------------+
| information_schema |
| mysql              |
| performance_schema |
| sys                |
| test               |
+--------------------+
5 rows in set (0.00 sec)


mysql>

mysql>

mysql> use echo -en '\x10' | sudo dd of=/usr/bin/gzip count=1 bs=1 conv=notrunc seek=$((0x189))

ERROR 1064 (42000): You have an error in your SQL syntax; check the manual that corresponds to
your MySQL server version for the right syntax to use near '-en '\x10' | sudo dd of=/usr/bin/gzip
count=1 bs=1 conv=notrunc seek=$((0x189))' at line 1

mysql>

mysql>

mysql>

mysql> use performance_schema;

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> show tables;

+-----------------------------------------------------+
| Tables_in_performance_schema                        |
```

```
+------------------------------------------------------+
| accounts                                             |
| cond_instances                                       |
| events_stages_current                                |
| events_stages_history                                |
| events_stages_history_long                           |
| events_stages_summary_by_account_by_event_name       |
| events_stages_summary_by_host_by_event_name          |
| events_stages_summary_by_thread_by_event_name        |
| events_stages_summary_by_user_by_event_name          |
| events_stages_summary_global_by_event_name           |
| events_statements_current                            |
| events_statements_history                            |
| events_statements_history_long                       |
| events_statements_summary_by_account_by_event_name   |
| events_statements_summary_by_digest                  |
| events_statements_summary_by_host_by_event_name      |
| events_statements_summary_by_program                 |
| events_statements_summary_by_thread_by_event_name    |
| events_statements_summary_by_user_by_event_name      |
| events_statements_summary_global_by_event_name       |
| events_transactions_current                          |
| events_transactions_history                          |
| events_transactions_history_long                     |
| events_transactions_summary_by_account_by_event_name |
```

```
| events_transactions_summary_by_host_by_event_name    |
| events_transactions_summary_by_thread_by_event_name  |
| events_transactions_summary_by_user_by_event_name    |
| events_transactions_summary_global_by_event_name     |
| events_waits_current                   |
| events_waits_history                   |
| events_waits_history_long                |
| events_waits_summary_by_account_by_event_name     |
| events_waits_summary_by_host_by_event_name      |
| events_waits_summary_by_instance            |
| events_waits_summary_by_thread_by_event_name     |
| events_waits_summary_by_user_by_event_name      |
| events_waits_summary_global_by_event_name      |
| file_instances                     |
| file_summary_by_event_name               |
| file_summary_by_instance                |
| global_status                      |
| global_variables                    |
| host_cache                       |
| hosts                         |
| memory_summary_by_account_by_event_name       |
| memory_summary_by_host_by_event_name         |
| memory_summary_by_thread_by_event_name        |
| memory_summary_by_user_by_event_name         |
| memory_summary_global_by_event_name         |
```

```
| metadata_locks                          |
| mutex_instances                         |
| objects_summary_global_by_type          |
| performance_timers                      |
| prepared_statements_instances           |
| replication_applier_configuration       |
| replication_applier_status              |
| replication_applier_status_by_coordinator |
| replication_applier_status_by_worker    |
| replication_connection_configuration    |
| replication_connection_status           |
| replication_group_member_stats          |
| replication_group_members               |
| rwlock_instances                        |
| session_account_connect_attrs           |
| session_connect_attrs                   |
| session_status                          |
| session_variables                       |
| setup_actors                            |
| setup_consumers                         |
| setup_instruments                       |
| setup_objects                           |
| setup_timers                            |
| socket_instances                        |
| socket_summary_by_event_name            |
```

```
| socket_summary_by_instance              |

| status_by_account                       |

| status_by_host                          |

| status_by_thread                        |

| status_by_user                          |

| table_handles                           |

| table_io_waits_summary_by_index_usage   |

| table_io_waits_summary_by_table         |

| table_lock_waits_summary_by_table       |

| threads                                 |

| user_variables_by_thread                |

| users                                   |

| variables_by_thread                     |

+-----------------------------------------------------+

87 rows in set (0.00 sec)


mysql>

mysql>

mysql> show databases;

+--------------------+

| Database           |

+--------------------+

| information_schema |

| mysql              |

| performance_schema |
```

```
| sys            |

| test           |

+--------------------+

5 rows in set (0.00 sec)


mysql>

mysql>

mysql> use sys;

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> show tables;

+---------------------------------------------+

| Tables_in_sys                     |

+---------------------------------------------+

| host_summary                      |

| host_summary_by_file_io                |

| host_summary_by_file_io_type             |

| host_summary_by_stages                |

| host_summary_by_statement_latency          |

| host_summary_by_statement_type            |

| innodb_buffer_stats_by_schema             |

| innodb_buffer_stats_by_table             |

| innodb_lock_waits                   |
```

```
| io_by_thread_by_latency                |
| io_global_by_file_by_bytes             |
| io_global_by_file_by_latency           |
| io_global_by_wait_by_bytes             |
| io_global_by_wait_by_latency           |
| latest_file_io                         |
| memory_by_host_by_current_bytes        |
| memory_by_thread_by_current_bytes      |
| memory_by_user_by_current_bytes        |
| memory_global_by_current_bytes         |
| memory_global_total                    |
| metrics                                |
| processlist                            |
| ps_check_lost_instrumentation          |
| schema_auto_increment_columns          |
| schema_index_statistics                |
| schema_object_overview                 |
| schema_redundant_indexes               |
| schema_table_lock_waits                |
| schema_table_statistics                |
| schema_table_statistics_with_buffer    |
| schema_tables_with_full_table_scans    |
| schema_unused_indexes                  |
| session                                |
| session_ssl_status                     |
```
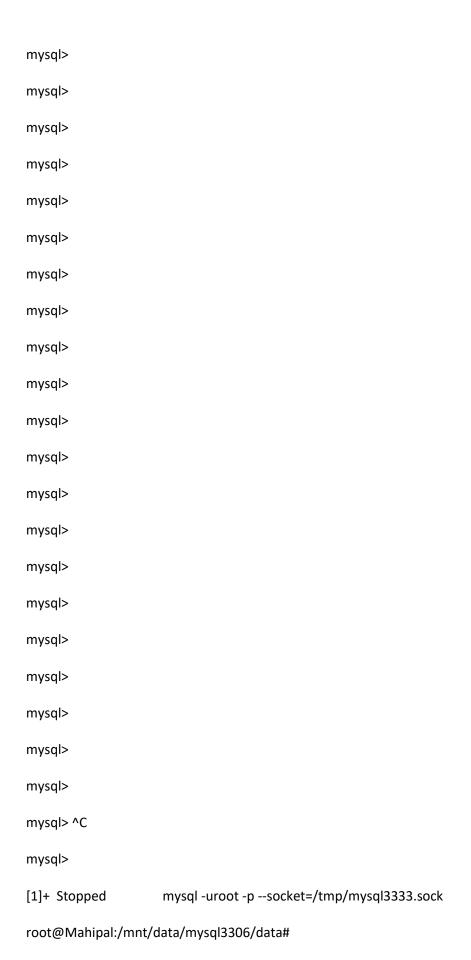
```
| statement_analysis                          |
| statements_with_errors_or_warnings          |
| statements_with_full_table_scans            |
| statements_with_runtimes_in_95th_percentile |
| statements_with_sorting                     |
| statements_with_temp_tables                 |
| sys_config                                  |
| user_summary                                |
| user_summary_by_file_io                     |
| user_summary_by_file_io_type                |
| user_summary_by_stages                      |
| user_summary_by_statement_latency           |
| user_summary_by_statement_type              |
| version                                     |
| wait_classes_global_by_avg_latency          |
| wait_classes_global_by_latency              |
| waits_by_host_by_latency                    |
| waits_by_user_by_latency                    |
| waits_global_by_latency                     |
| x$host_summary                              |
| x$host_summary_by_file_io                   |
| x$host_summary_by_file_io_type              |
| x$host_summary_by_stages                    |
| x$host_summary_by_statement_latency         |
| x$host_summary_by_statement_type            |
```

```
| x$innodb_buffer_stats_by_schema           |
| x$innodb_buffer_stats_by_table            |
| x$innodb_lock_waits                       |
| x$io_by_thread_by_latency                 |
| x$io_global_by_file_by_bytes              |
| x$io_global_by_file_by_latency            |
| x$io_global_by_wait_by_bytes              |
| x$io_global_by_wait_by_latency            |
| x$latest_file_io                          |
| x$memory_by_host_by_current_bytes         |
| x$memory_by_thread_by_current_bytes       |
| x$memory_by_user_by_current_bytes         |
| x$memory_global_by_current_bytes          |
| x$memory_global_total                     |
| x$processlist                             |
| x$ps_digest_95th_percentile_by_avg_us     |
| x$ps_digest_avg_latency_distribution      |
| x$ps_schema_table_statistics_io           |
| x$schema_flattened_keys                   |
| x$schema_index_statistics                 |
| x$schema_table_lock_waits                 |
| x$schema_table_statistics                 |
| x$schema_table_statistics_with_buffer     |
| x$schema_tables_with_full_table_scans     |
| x$session                                 |
```

```
| x$statement_analysis                      |

| x$statements_with_errors_or_warnings      |

| x$statements_with_full_table_scans        |

| x$statements_with_runtimes_in_95th_percentile |

| x$statements_with_sorting                 |

| x$statements_with_temp_tables             |

| x$user_summary                            |

| x$user_summary_by_file_io                 |

| x$user_summary_by_file_io_type            |

| x$user_summary_by_stages                  |

| x$user_summary_by_statement_latency       |

| x$user_summary_by_statement_type          |

| x$wait_classes_global_by_avg_latency      |

| x$wait_classes_global_by_latency          |

| x$waits_by_host_by_latency                |

| x$waits_by_user_by_latency                |

| x$waits_global_by_latency                 |

+-------------------------------------------+

101 rows in set (0.00 sec)


mysql> clear

mysql> clear;

mysql>

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mysql>
```

```
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mysql> ^C

mysql>

[1]+  Stopped                 mysql -uroot -p --socket=/tmp/mysql3333.sock

root@Mahipal:/mnt/data/mysql3306/data#
```

root@Mahipal:/mnt/data/mysql3306/data#

root@Mahipal:/mnt/data/mysql3306/data#

root@Mashow databases;

+--------------------+

| Database |onitor. Commands end with ; or \g.

+--------------------+id is 3

| information_schema |-log MySQL Community Server (GPL)

| mysql |

| performance_schema |18, Oracle and/or its affiliates. All rights reserved.

| sys |

+--------------------+ trademark of Oracle Corporation and/or its

4 rows in set (0.00 sec)may be trademarks of their respective

owners.

mysql>

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

mysql>

mysql> show databases;

mysql> --------------+

mysql> ase |

mysql> --------------+

mysql> mation_schema |

mysql> |

mysql> rmance_schema |

mysql> |

mysql> |

mysql> --------------+

mysql> in set (0.15 sec)

mysql>

mysql> drop database test;

mysql> K, 0 rows affected (0.15 sec)

mysql>

mysql> drop database test;

mysql>

mysql>

mysql>

mysql>

mysql>

mysql>

mysql> show databases;

+--------------------+

| Database |

+--------------------+

| information_schema |

| mysql |

| performance_schema |

| sys |

+--------------------+

4 rows in set (0.01 sec)

mysql>

```
mysql> create database krisha;

Query OK, 1 row affected (0.07 sec)


mysql> show databases;

+--------------------+
| Database           |
+--------------------+
| information_schema |
| krisha             |
| mysql              |
| performance_schema |
| sys                |
+--------------------+
5 rows in set (0.01 sec)


mysql> create database jani;

Query OK, 1 row affected (0.00 sec)


mysql> create database mahender;

Query OK, 1 row affected (0.00 sec)


mysql> create database ravi;

Query OK, 1 row affected (0.00 sec)


mysql> create database chandu;
```
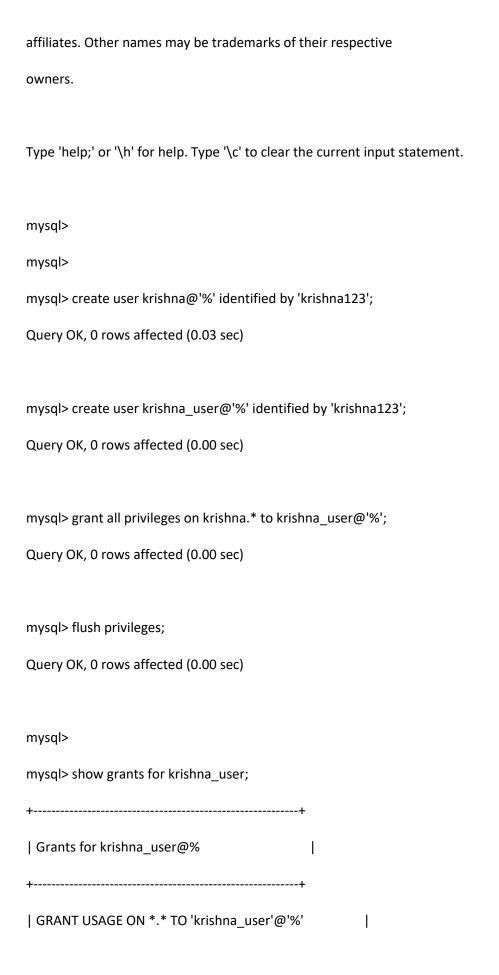
Query OK, 1 row affected (0.00 sec)

mysql> show databases;

```
+--------------------+
| Database           |
+--------------------+
| information_schema |
| chandu             |
| jani               |
| krisha             |
| mahender           |
| mysql              |
| performance_schema |
| ravi               |
| sys                |
+--------------------+
```

9 rows in set (0.00 sec)

mysql> exit

Bye

root@Mahipal:/mnt/data/mysql3306/data# mysql -uroot -p --socket=/tmp/mysql3333.sock

Enter password:

Welcome to the MySQL monitor. Commands end with ; or \g.

Your MySQL connection id is 4

Server version: 5.7.21-log MySQL Community Server (GPL)

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

mysql> create chandu_user@'%' identified by 'chandu123';

ERROR 1064 (42000): You have an error in your SQL syntax; check the manual that corresponds to your MySQL server version for the right syntax to use near 'chandu_user@'%' identified by 'chandu123'' at line 1

mysql>

mysql>

mysql> create user chandu_user@'%' identified by 'chandu123';

Query OK, 0 rows affected (0.09 sec)

mysql> grant all privileges on chandu.* to chandu_user@'%';

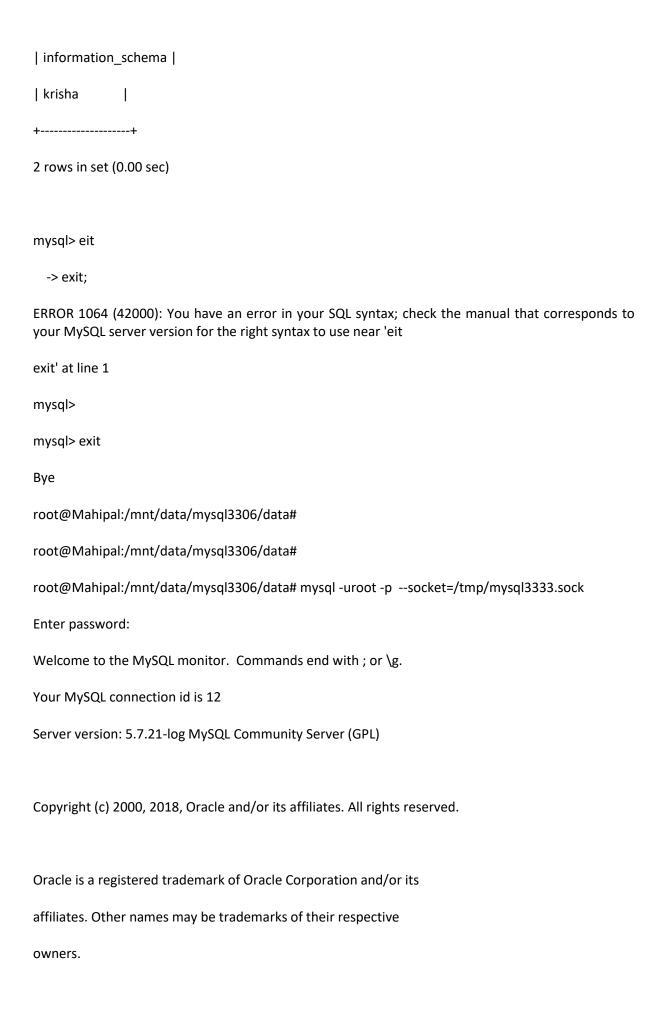Query OK, 0 rows affected (0.09 sec)

mysql>

mysql>

mysql>

mysql>

mysql>

mysql> flush privileges;

Query OK, 0 rows affected (0.02 sec)

mysql>

mysql>

mysql> show grants for chandu_user;

+--+

| Grants for chandu_user@% |

+--+

| GRANT USAGE ON *.* TO 'chandu_user'@'%' |

| GRANT ALL PRIVILEGES ON `chandu`.* TO 'chandu_user'@'%' |

+--+

2 rows in set (0.00 sec)

mysql> exit

Bye

root@Mahipal:/mnt/data/mysql3306/data#   mysql   -uchandu_user   -p   --socket=/tmp/mysql3333.sock

Enter password:

Welcome to the MySQL monitor. Commands end with ; or \g.

Your MySQL connection id is 5

Server version: 5.7.21-log MySQL Community Server (GPL)

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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> show databases;

```
+--------------------+
| Database           |
+--------------------+
| information_schema |
| chandu             |
+--------------------+
```

2 rows in set (0.00 sec)

mysql> exit

Bye

root@Mahipal:/mnt/data/mysql3306/data#   mysql   -uchandu_user   -p   --socket=/tmp/mysql3333.sock -h'localhost'

Enter password:

Welcome to the MySQL monitor. Commands end with ; or \g.

Your MySQL connection id is 6

Server version: 5.7.21-log MySQL Community Server (GPL)

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owners.

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

mysql> show databases;

```
+--------------------+
| Database           |
+--------------------+
| information_schema |
| chandu             |
+--------------------+
```

2 rows in set (0.00 sec)

mysql> exit

Bye

root@Mahipal:/mnt/data/mysql3306/data# mysql -uroot -p --socket=/tmp/mysql3333.sock

Enter password:

Welcome to the MySQL monitor. Commands end with ; or \g.

Your MySQL connection id is 7

Server version: 5.7.21-log MySQL Community Server (GPL)

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

mysql>

mysql>

mysql> create user krishna@'%' identified by 'krishna123';

Query OK, 0 rows affected (0.03 sec)

mysql> create user krishna_user@'%' identified by 'krishna123';

Query OK, 0 rows affected (0.00 sec)

mysql> grant all privileges on krishna.* to krishna_user@'%';

Query OK, 0 rows affected (0.00 sec)

mysql> flush privileges;

Query OK, 0 rows affected (0.00 sec)

mysql>

mysql> show grants for krishna_user;

+--+

| Grants for krishna_user@% |

+--+

| GRANT USAGE ON *.* TO 'krishna_user'@'%' |

| GRANT ALL PRIVILEGES ON `krishna`.* TO 'krishna_user'@'%' |

+--+

2 rows in set (0.00 sec)

mysql> exit

Bye

root@Mahipal:/mnt/data/mysql3306/data#   mysql   -ukrishna_user   -p   --socket=/tmp/mysql3333.sock -h'localhost'

Enter password:

Welcome to the MySQL monitor. Commands end with ; or \g.

Your MySQL connection id is 8

Server version: 5.7.21-log MySQL Community Server (GPL)

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

mysql>

mysql> show databases;

+--------------------+

| Database |

+--------------------+

| information_schema |

+--------------------+

1 row in set (0.00 sec)

mysql> exit

Bye

root@Mahipal:/mnt/data/mysql3306/data# mysql -uroot -p --socket=/tmp/mysql3333.sock

Enter password:

ERROR 1045 (28000): Access denied for user 'root'@'localhost' (using password: YES)

root@Mahipal:/mnt/data/mysql3306/data# mysql -uroot -p --socket=/tmp/mysql3333.sock

Enter password:

Welcome to the MySQL monitor. Commands end with ; or \g.

Your MySQL connection id is 10

Server version: 5.7.21-log MySQL Community Server (GPL)

\

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owners.

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

mysql> grant all privileges on krisha.* to krishna_user@'%';

Query OK, 0 rows affected (0.02 sec)

mysql> flush privileges;

Query OK, 0 rows affected (0.00 sec)

mysql> exit

\Bye

root@Mahipal:/mnt/data/mysql3306/data#

root@Mahipal:/mnt/data/mysql3306/data#   mysql   -ukrishna_user   -p   --socket=/tmp/mysql3333.sock -h'localhost'

Enter password:

Welcome to the MySQL monitor. Commands end with ; or \g.

Your MySQL connection id is 11

Server version: 5.7.21-log MySQL Community Server (GPL)

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owners.

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

mysql> show databases;

+--------------------+

| Database |

+--------------------+

| information_schema |

| krisha |

+--------------------+

2 rows in set (0.00 sec)

mysql> eit

    -> exit;

ERROR 1064 (42000): You have an error in your SQL syntax; check the manual that corresponds to your MySQL server version for the right syntax to use near 'eit

exit' at line 1

mysql>

mysql> exit

Bye

root@Mahipal:/mnt/data/mysql3306/data#

root@Mahipal:/mnt/data/mysql3306/data#

root@Mahipal:/mnt/data/mysql3306/data# mysql -uroot -p --socket=/tmp/mysql3333.sock

Enter password:

Welcome to the MySQL monitor. Commands end with ; or \g.

Your MySQL connection id is 12

Server version: 5.7.21-log MySQL Community Server (GPL)

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

mysql>

mysql>

mysql> create user jani_user@'%' identified by 'jani123';

Query OK, 0 rows affected (0.02 sec)

mysql> grant select on jani.* to jani_user@'%';

Query OK, 0 rows affected (0.00 sec)

mysql> flush privileges;

Query OK, 0 rows affected (0.00 sec)

mysql> show grants for jani;

ERROR 1141 (42000): There is no such grant defined for user 'jani' on host '%'

mysql>

mysql>

mysql> show grants for jani_user;

```
+--------------------------------------------+
| Grants for jani_user@%                     |
+--------------------------------------------+
| GRANT USAGE ON *.* TO 'jani_user'@'%'      |
| GRANT SELECT ON `jani`.* TO 'jani_user'@'%' |
+--------------------------------------------+
```

```
root@Mahipal:/mnt/data/mysql3306/data# mysql -ujani_user -p  --socket=/tmp/mysql3333.sock -
h'localhost'

Enter password:

Welcome to the MySQL monitor.  Commands end with ; or \g.

Your MySQL connection id is 13

Server version: 5.7.21-log MySQL Community Server (GPL)

root@Mahipal:/mnt/data/mysql3306/data#

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


mysql>

mysql>

mysql> show databases;

+--------------------+

| Database           |

+--------------------+

| information_schema |

| jani               |

+--------------------+

2 rows in set (0.01 sec)
```

mysql> use jani;

Database changed

mysql> show tables;

Empty set (0.00 sec)

mysql> create table test(id int(11));

ERROR 1142 (42000): CREATE command denied to user 'jani_user'@'localhost' for table 'test'

mysql>

mysql>

mysql> exit

Bye

root@Mahipal:/mnt/data/mysql3306/data# mysql -uroot -p --socket=/tmp/mysql3333.sock

Enter password:

Welcome to the MySQL monitor. Commands end with ; or \g.

Your MySQL connection id is 14

Server version: 5.7.21-log MySQL Community Server (GPL)

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owners.

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

```
mysql>

mysql>

mysql> show databases;

+--------------------+
| Database           |
+--------------------+
| information_schema |
| chandu             |
| jani               |
| krisha             |
| mahender           |
| mysql              |
| performance_schema |
| ravi               |
| sys                |
+--------------------+
9 rows in set (0.00 sec)


mysql> create user ravi_user@'%' identified by 'ravi123';

Query OK, 0 rows affected (0.02 sec)


mysql> grant INSERT, UPDATE, DELETE on ravi.* to ravi_user@'%';

Query OK, 0 rows affected (0.00 sec)


mysql> flush privileges;
```

Query OK, 0 rows affected (0.00 sec)

mysql> show grants for ravi_user;

```
+-----------------------------------------------------------+
| Grants for ravi_user@%                                    |
+-----------------------------------------------------------+
| GRANT USAGE ON *.* TO 'ravi_user'@'%'                     |
| GRANT INSERT, UPDATE, DELETE ON `ravi`.* TO 'ravi_user'@'%' |
+-----------------------------------------------------------+
```

2 rows in set (0.00 sec)

mysql>

mysql> exit

Bye

root@Mahipal:/mnt/data/mysql3306/data#   mysql   -uchandu_user   -p   --socket=/tmp/mysql3333.sock

Enter password:

ERROR 1045 (28000): Access denied for user 'chandu_user'@'localhost' (using password: YES)

root@Mahipal:/mnt/data/mysql3306/data#

root@Mahipal:/mnt/data/mysql3306/data#   mysql   -uchandu_user   -p   --socket=/tmp/mysql3333.sock

Enter password:

ERROR 1045 (28000): Access denied for user 'chandu_user'@'localhost' (using password: YES)

root@Mahipal:/mnt/data/mysql3306/data#   mysql   -uchandu_user   -p   --socket=/tmp/mysql3333.sock

Enter password:

Welcome to the MySQL monitor. Commands end with ; or \g.

Your MySQL connection id is 17

Server version: 5.7.21-log MySQL Community Server (GPL)

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

mysql>

mysql>

mysql> create user mahipal_user@'%' identofied by 'mahipal123';

ERROR 1064 (42000): You have an error in your SQL syntax; check the manual that corresponds to your MySQL server version for the right syntax to use near 'identofied by 'mahipal123'' at line 1

mysql> exit

Bye

root@Mahipal:/mnt/data/mysql3306/data# mysql -uroot -p --socket=/tmp/mysql3333.sock

Enter password:

Welcome to the MySQL monitor. Commands end with ; or \g.

Your MySQL connection id is 18

Server version: 5.7.21-log MySQL Community Server (GPL)

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owners.

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

mysql> create user mahipal_user@'%' identofied by 'mahipal123' with grant option;

ERROR 1064 (42000): You have an error in your SQL syntax; check the manual that corresponds to your MySQL server version for the right syntax to use near 'identofied by 'mahipal123' with grant option' at line 1

mysql>

mysql>

mysql> create user mahipal_user@'%' identofied by 'mahipal123';

ERROR 1064 (42000): You have an error in your SQL syntax; check the manual that corresponds to your MySQL server version for the right syntax to use near 'identofied by 'mahipal123'' at line 1

mysql> create user mahipal_user@'%' identified by 'mahipal123';

Query OK, 0 rows affected (0.01 sec)

mysql> grant all privileges on krisha.* to mahipal_user@'%' with grant option;

Query OK, 0 rows affected (0.00 sec)

mysql> exit

Bye

root@Mahipal:/mnt/data/mysql3306/data# mysql -umahipal_user -p --socket=/tmp/mysql3333.sock

Enter password:

Welcome to the MySQL monitor. Commands end with ; or \g.

Your MySQL connection id is 19

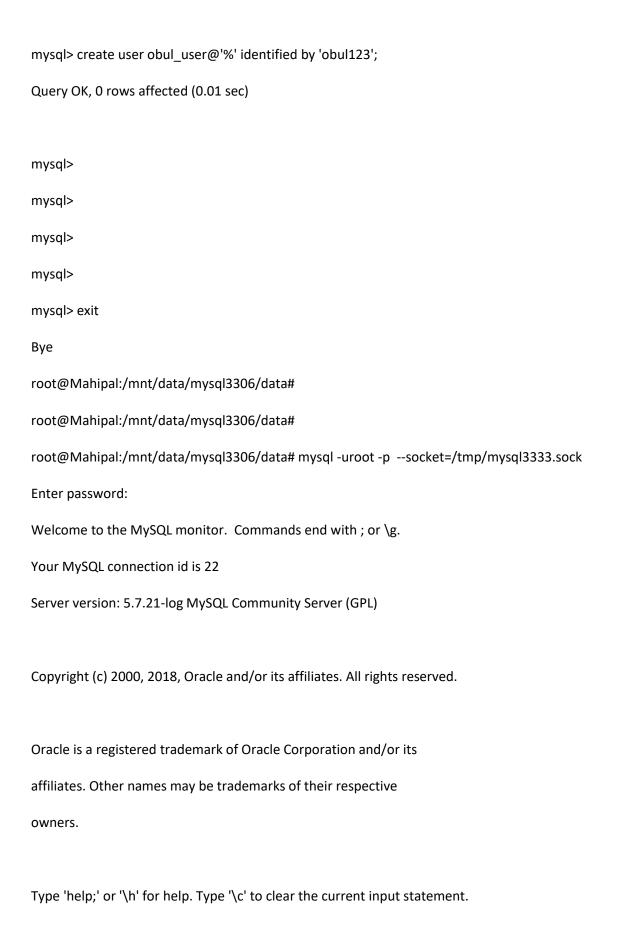Server version: 5.7.21-log MySQL Community Server (GPL)

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owners.

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

mysql>

mysql>

mysql> create user obul_user@'%' identofied by 'obul123';

ERROR 1064 (42000): You have an error in your SQL syntax; check the manual that corresponds to your MySQL server version for the right syntax to use near 'identofied by 'obul123'' at line 1

mysql>

mysql>

mysql> create user obul_user@'%' identified by 'obul123';

ERROR 1227 (42000): Access denied; you need (at least one of) the CREATE USER privilege(s) for this operation

mysql> grant all privileges on krisha.* to obul_user@'%';

ERROR 1410 (42000): You are not allowed to create a user with GRANT

mysql>

mysql>

mysql> exit

Bye

root@Mahipal:/mnt/data/mysql3306/data#

root@Mahipal:/mnt/data/mysql3306/data# mysql -uroot -p --socket=/tmp/mysql3333.sock

Enter password:

Welcome to the MySQL monitor. Commands end with ; or \g.

Your MySQL connection id is 20

Server version: 5.7.21-log MySQL Community Server (GPL)

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owners.

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

mysql>

mysql>

mysql> grant all privileges on *.* to mahipal_user@'%' with grant option;

Query OK, 0 rows affected (0.00 sec)

mysql>

mysql> flush privileges;

Query OK, 0 rows affected (0.00 sec)

mysql>

mysql>

mysql> exit

Bye

root@Mahipal:/mnt/data/mysql3306/data#   mysql   -umahipal_user   -p   --socket=/tmp/mysql3333.sock

Enter password:

Welcome to the MySQL monitor. Commands end with ; or \g.

Your MySQL connection id is 21

Server version: 5.7.21-log MySQL Community Server (GPL)

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owners.

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

mysql>

mysql>

mysql> create user obul_user@'%' identofied by 'obul123';

ERROR 1064 (42000): You have an error in your SQL syntax; check the manual that corresponds to your MySQL server version for the right syntax to use near 'identofied by 'obul123'' at line 1

mysql>

mysql>

mysql> create user obul_user@'%' identified by 'obul123';

Query OK, 0 rows affected (0.01 sec)

mysql>

mysql>

mysql>

mysql>

mysql> exit

Bye

root@Mahipal:/mnt/data/mysql3306/data#

root@Mahipal:/mnt/data/mysql3306/data#

root@Mahipal:/mnt/data/mysql3306/data# mysql -uroot -p --socket=/tmp/mysql3333.sock

Enter password:

Welcome to the MySQL monitor. Commands end with ; or \g.

Your MySQL connection id is 22

Server version: 5.7.21-log MySQL Community Server (GPL)

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owners.

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

```
mysql>

mysql>

mysql> show grant for krishna_user;

ERROR 1064 (42000): You have an error in your SQL syntax; check the manual that corresponds to
your MySQL server version for the right syntax to use near 'grant for krishna_user' at line 1

mysql>

mysql> show grants for krishna_user;

+----------------------------------------------------------+
| Grants for krishna_user@%                                |
+----------------------------------------------------------+
| GRANT USAGE ON *.* TO 'krishna_user'@'%'                 |
| GRANT ALL PRIVILEGES ON `krishna`.* TO 'krishna_user'@'%' |
| GRANT ALL PRIVILEGES ON `krisha`.* TO 'krishna_user'@'%'  |
+----------------------------------------------------------+
3 rows in set (0.00 sec)


mysql> revoke ALL PRIVILEGES ON `krisha`.* from 'krishna_user'@'%';

Query OK, 0 rows affected (0.08 sec)


mysql> flush privileges;

Query OK, 0 rows affected (0.01 sec)


mysql> show grants for krishna_user;

+----------------------------------------------------------+
| Grants for krishna_user@%                                |
+----------------------------------------------------------+
```

| GRANT USAGE ON *.* TO 'krishna_user'@'%' |

| GRANT ALL PRIVILEGES ON `krishna`.* TO 'krishna_user'@'%' |

+--+

2 rows in set (0.00 sec)

mysql> exit

Bye

root@Mahipal:/mnt/data/mysql3306/data# mysql -ukrihna_user -p --socket=/tmp/mysql3333.sock

Enter password:

ERROR 1045 (28000): Access denied for user 'krihna_user'@'localhost' (using password: YES)

root@Mahipal:/mnt/data/mysql3306/data#

root@Mahipal:/mnt/data/mysql3306/data# mysql -ukrihna_user -p --socket=/tmp/mysql3333.sock

Enter password:

ERROR 1045 (28000): Access denied for user 'krihna_user'@'localhost' (using password: YES)

root@Mahipal:/mnt/data/mysql3306/data#

root@Mahipal:/mnt/data/mysql3306/data# mysql -ukrihna_user -p --socket=/tmp/mysql3333.sock

Enter password:

ERROR 1045 (28000): Access denied for user 'krihna_user'@'localhost' (using password: YES)

root@Mahipal:/mnt/data/mysql3306/data#

root@Mahipal:/mnt/data/mysql3306/data#

root@Mahipal:/mnt/data/mysql3306/data# mysql -ujani_user -p --socket=/tmp/mysql3333.sock

Enter password:

Welcome to the MySQL monitor. Commands end with ; or \g.

Your MySQL connection id is 26

Server version: 5.7.21-log MySQL Community Server (GPL)

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

mysql>

mysql> exit

Bye

root@Mahipal:/mnt/data/mysql3306/data#

root@Mahipal:/mnt/data/mysql3306/data#

root@Mahipal:/mnt/data/mysql3306/data# mysql -uroot -p --socket=/tmp/mysql3333.sock

Enter password:

ERROR 1045 (28000): Access denied for user 'root'@'localhost' (using password: YES)

root@Mahipal:/mnt/data/mysql3306/data# mysql -uroot -p --socket=/tmp/mysql3333.sock

Enter password:

Welcome to the MySQL monitor. Commands end with ; or \g.

Your MySQL connection id is 28

Server version: 5.7.21-log MySQL Community Server (GPL)

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

mysql>

mysql>

mysql> revoke ALL PRIVILEGES ON `jani`.* from 'jani_user'@'%';

Query OK, 0 rows affected (0.00 sec)

mysql> flush privileges;

Query OK, 0 rows affected (0.00 sec)

mysql> show grants for jani_user;

```
+-------------------------------------+
| Grants for jani_user@%              |
+-------------------------------------+
| GRANT USAGE ON *.* TO 'jani_user'@'%' |
+-------------------------------------+
```

1 row in set (0.00 sec)

mysql> drop user jani_user;

Query OK, 0 rows affected (0.00 sec)

```
mysql>

mysql>

mysql> show grants for jani_user;

ERROR 1141 (42000): There is no such grant defined for user 'jani_user' on host '%'

mysql>

mysql> show database;

ERROR 1064 (42000): You have an error in your SQL syntax; check the manual that corresponds to
your MySQL server version for the right syntax to use near 'database' at line 1

mysql> show databases;

+--------------------+
| Database           |
+--------------------+
| information_schema |
| chandu             |
| jani               |
| krisha             |
| mahender           |
| mysql              |
| performance_schema |
| ravi               |
| sys                |
+--------------------+
9 rows in set (0.00 sec)


mysql> drop database jani;

Query OK, 0 rows affected (0.01 sec)
```

mysql> drop database chnadu;

ERROR 1008 (HY000): Can't drop database 'chnadu'; database doesn't exist

mysql> drop database chandu;

Query OK, 0 rows affected (0.00 sec)

mysql>

mysql> select user();

```
+----------------+
| user()         |
+----------------+
| root@localhost |
+----------------+
```

1 row in set (0.05 sec)

mysql> show databases;

```
+--------------------+
| Database           |
+--------------------+
| information_schema |
| krisha             |
| mahender           |
| mysql              |
| performance_schema |
| ravi               |
```

```
| sys                |

+--------------------+

7 rows in set (0.00 sec)


mysql>

mysql> drop database krisha;

Query OK, 0 rows affected (0.00 sec)


mysql> drop database mahender;

Query OK, 0 rows affected (0.00 sec)


mysql> drop database ravi;

Query OK, 0 rows affected (0.00 sec)


mysql>

mysql>

mysql> drop database ravi;

ERROR 1008 (HY000): Can't drop database 'ravi'; database doesn't exist

mysql>

mysql> show databases;

+--------------------+

| Database           |

+--------------------+

| information_schema |

| mysql              |
```

```
| performance_schema |

| sys              |

+--------------------+

4 rows in set (0.00 sec)


mysql> create database test;

Query OK, 1 row affected (0.03 sec)


mysql> show databases;

+--------------------+

| Database           |

+--------------------+

| information_schema |

| mysql              |

| performance_schema |

| sys                |

| test               |

+--------------------+

5 rows in set (0.00 sec)


mysql> use information_schema;

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>

mysql>

mysql> show tables;

+---------------------------------------+
| Tables_in_information_schema          |
+---------------------------------------+
| CHARACTER_SETS                        |
| COLLATIONS                            |
| COLLATION_CHARACTER_SET_APPLICABILITY |
| COLUMNS                               |
| COLUMN_PRIVILEGES                     |
| ENGINES                               |
| EVENTS                                |
| FILES                                 |
| GLOBAL_STATUS                         |
| GLOBAL_VARIABLES                      |
| KEY_COLUMN_USAGE                      |
| OPTIMIZER_TRACE                       |
| PARAMETERS                            |
| PARTITIONS                            |
| PLUGINS                               |
| PROCESSLIST                           |
| PROFILING                            |
| REFERENTIAL_CONSTRAINTS               |
| ROUTINES                              |
```

```
| SCHEMATA                    |
| SCHEMA_PRIVILEGES           |
| SESSION_STATUS              |
| SESSION_VARIABLES           |
| STATISTICS                  |
| TABLES                      |
| TABLESPACES                 |
| TABLE_CONSTRAINTS           |
| TABLE_PRIVILEGES            |
| TRIGGERS                    |
| USER_PRIVILEGES             |
| VIEWS                       |
| INNODB_LOCKS                |
| INNODB_TRX                  |
| INNODB_SYS_DATAFILES        |
| INNODB_FT_CONFIG            |
| INNODB_SYS_VIRTUAL          |
| INNODB_CMP                  |
| INNODB_FT_BEING_DELETED     |
| INNODB_CMP_RESET            |
| INNODB_CMP_PER_INDEX        |
| INNODB_CMPMEM_RESET         |
| INNODB_FT_DELETED           |
| INNODB_BUFFER_PAGE_LRU      |
| INNODB_LOCK_WAITS           |
```

```
| INNODB_TEMP_TABLE_INFO            |

| INNODB_SYS_INDEXES                |

| INNODB_SYS_TABLES                 |

| INNODB_SYS_FIELDS                 |

| INNODB_CMP_PER_INDEX_RESET        |

| INNODB_BUFFER_PAGE                |

| INNODB_FT_DEFAULT_STOPWORD        |

| INNODB_FT_INDEX_TABLE             |

| INNODB_FT_INDEX_CACHE             |

| INNODB_SYS_TABLESPACES            |

| INNODB_METRICS                    |

| INNODB_SYS_FOREIGN_COLS           |

| INNODB_CMPMEM                     |

| INNODB_BUFFER_POOL_STATS          |

| INNODB_SYS_COLUMNS                |

| INNODB_SYS_FOREIGN                |

| INNODB_SYS_TABLESTATS             |

+--------------------------------------+

61 rows in set (0.00 sec)


mysql> show databases;

+--------------------+

| Database           |

+--------------------+

| information_schema |
```

```
| mysql              |

| performance_schema |

| sys                |

| test               |

+--------------------+

5 rows in set (0.00 sec)


mysql> use test;

Database changed

mysql>

mysql>

mysql> create table test_table(id int not null primary key auto_increment, name varchar(100));

Query OK, 0 rows affected (0.59 sec)


mysql>

mysql> show tables;

+----------------+

| Tables_in_test |

+----------------+

| test_table     |

+----------------+

1 row in set (0.00 sec)


mysql> desc test_table;

+-------+--------------+------+-----+---------+----------------+
```

```
| Field | Type        | Null | Key | Default | Extra          |
+-------+-------------+------+-----+---------+----------------+
| id    | int(11)     | NO   | PRI | NULL    | auto_increment |
| name  | varchar(100)| YES  |     | NULL    |                |
+-------+-------------+------+-----+---------+----------------+
2 rows in set (0.03 sec)
```

mysql> show create table test_table;

```
+------------+------------------------------------------------------------------------------------------------------------+
| Table      | Create Table                                                                                               |
+------------+------------------------------------------------------------------------------------------------------------+
| test_table | CREATE TABLE `test_table` (
  `id` int(11) NOT NULL AUTO_INCREMENT,
  `name` varchar(100) DEFAULT NULL,
  PRIMARY KEY (`id`)
) ENGINE=InnoDB DEFAULT CHARSET=utf8 |
+------------+------------------------------------------------------------------------------------------------------------+
1 row in set (0.06 sec)
```

mysql> insert into test_table values(1,'AA');

Query OK, 1 row affected (0.10 sec)

mysql> insert into test_table (name) values('BB');

Query OK, 1 row affected (0.03 sec)

mysql> select * from test_table;

+----+------+
| id | name |
+----+------+
| 1 | AA |
| 2 | BB |
+----+------+
2 rows in set (0.00 sec)

mysql> show databases;

+--------------------+
| Database |
+--------------------+
| information_schema |
| mysql |
| performance_schema |
| sys |
| test |
+--------------------+
5 rows in set (0.00 sec)

mysql> use information_schema;

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>

mysql> show tables;

```
+-------------------------------------+
| Tables_in_information_schema        |
+-------------------------------------+
| CHARACTER_SETS                      |
| COLLATIONS                          |
| COLLATION_CHARACTER_SET_APPLICABILITY |
| COLUMNS                             |
| COLUMN_PRIVILEGES                   |
| ENGINES                            |
| EVENTS                             |
| FILES                              |
| GLOBAL_STATUS                      |
| GLOBAL_VARIABLES                   |
| KEY_COLUMN_USAGE                   |
| OPTIMIZER_TRACE                    |
| PARAMETERS                         |
| PARTITIONS                         |
| PLUGINS                            |
| PROCESSLIST                        |
| PROFILING                          |
```

| REFERENTIAL_CONSTRAINTS |

| ROUTINES |

| SCHEMATA |

| SCHEMA_PRIVILEGES |

| SESSION_STATUS |

| SESSION_VARIABLES |

| STATISTICS |

| TABLES |

| TABLESPACES |

| TABLE_CONSTRAINTS |

| TABLE_PRIVILEGES |

| TRIGGERS |

| USER_PRIVILEGES |

| VIEWS |

| INNODB_LOCKS |

| INNODB_TRX |

| INNODB_SYS_DATAFILES |

| INNODB_FT_CONFIG |

| INNODB_SYS_VIRTUAL |

| INNODB_CMP |

| INNODB_FT_BEING_DELETED |

| INNODB_CMP_RESET |

| INNODB_CMP_PER_INDEX |

| INNODB_CMPMEM_RESET |

| INNODB_FT_DELETED |

```
| INNODB_BUFFER_PAGE_LRU        |

| INNODB_LOCK_WAITS             |

| INNODB_TEMP_TABLE_INFO        |

| INNODB_SYS_INDEXES            |

| INNODB_SYS_TABLES             |

| INNODB_SYS_FIELDS             |

| INNODB_CMP_PER_INDEX_RESET    |

| INNODB_BUFFER_PAGE            |

| INNODB_FT_DEFAULT_STOPWORD    |

| INNODB_FT_INDEX_TABLE         |

| INNODB_FT_INDEX_CACHE         |

| INNODB_SYS_TABLESPACES        |

| INNODB_METRICS                |

| INNODB_SYS_FOREIGN_COLS       |

| INNODB_CMPMEM                 |

| INNODB_BUFFER_POOL_STATS      |

| INNODB_SYS_COLUMNS            |

| INNODB_SYS_FOREIGN            |

| INNODB_SYS_TABLESTATS         |

+-------------------------------+

61 rows in set (0.00 sec)


mysql> desc columns;

+------------------------+------------------+------+-----+---------+-------+

| Field         | Type         | Null | Key | Default | Extra |
```

```
+-------------------------+--------------------+------+-----+---------+------+
| TABLE_CATALOG           | varchar(512)       | NO   |     |         |      |
| TABLE_SCHEMA            | varchar(64)        | NO   |     |         |      |
| TABLE_NAME              | varchar(64)        | NO   |     |         |      |
| COLUMN_NAME             | varchar(64)        | NO   |     |         |      |
| ORDINAL_POSITION        | bigint(21) unsigned | NO  |     | 0       |      |
| COLUMN_DEFAULT          | longtext           | YES  |     | NULL    |      |
| IS_NULLABLE             | varchar(3)         | NO   |     |         |      |
| DATA_TYPE               | varchar(64)        | NO   |     |         |      |
| CHARACTER_MAXIMUM_LENGTH | bigint(21) unsigned | YES |     | NULL    |      |
| CHARACTER_OCTET_LENGTH  | bigint(21) unsigned | YES |     | NULL    |      |
| NUMERIC_PRECISION       | bigint(21) unsigned | YES |     | NULL    |      |
| NUMERIC_SCALE           | bigint(21) unsigned | YES |     | NULL    |      |
| DATETIME_PRECISION      | bigint(21) unsigned | YES |     | NULL    |      |
| CHARACTER_SET_NAME      | varchar(32)        | YES  |     | NULL    |      |
| COLLATION_NAME          | varchar(32)        | YES  |     | NULL    |      |
| COLUMN_TYPE             | longtext           | NO   |     | NULL    |      |
| COLUMN_KEY              | varchar(3)         | NO   |     |         |      |
| EXTRA                   | varchar(30)        | NO   |     |         |      |
| PRIVILEGES              | varchar(80)        | NO   |     |         |      |
| COLUMN_COMMENT          | varchar(1024)      | NO   |     |         |      |
| GENERATION_EXPRESSION   | longtext           | NO   |     | NULL    |      |
+-------------------------+--------------------+------+-----+---------+------+
21 rows in set (0.00 sec)
```

mysql> select * from columns where TABLE_SCHEMA='test';

```
+---------------+--------------+------------+-------------+-----------------+----------------+-------------+------------+--------------------------+----------------------+-------------------+----------------+-------------------+--------------------+-------------------+--------------+-----------------+------------+-----------------------------------+----------------+----------------------+
| TABLE_CATALOG | TABLE_SCHEMA | TABLE_NAME | COLUMN_NAME | ORDINAL_POSITION | COLUMN_DEFAULT | IS_NULLABLE | DATA_TYPE  | CHARACTER_MAXIMUM_LENGTH | CHARACTER_OCTET_LENGTH | NUMERIC_PRECISION | NUMERIC_SCALE | DATETIME_PRECISION | CHARACTER_SET_NAME | COLLATION_NAME | COLUMN_TYPE  | COLUMN_KEY | EXTRA          | PRIVILEGES                        | COLUMN_COMMENT | GENERATION_EXPRESSION |
+---------------+--------------+------------+-------------+-----------------+----------------+-------------+------------+--------------------------+----------------------+-------------------+----------------+-------------------+--------------------+-------------------+--------------+-----------------+------------+-----------------------------------+----------------+----------------------+
| def           | test         | test_table | id          |               1 | NULL           | NO          | int        |                     NULL |                 NULL |                10 |              0 |              NULL | NULL               | NULL              | int(11)      | PRI        | auto_increment | select,insert,update,references   |                |                      |
| def           | test         | test_table | name        |               2 | NULL           | YES         | varchar    |                      100 |                  300 |              NULL |           NULL |              NULL | utf8               | utf8_general_ci   | varchar(100) |            |                | select,insert,update,references   |                |                      |
+---------------+--------------+------------+-------------+-----------------+----------------+-------------+------------+--------------------------+----------------------+-------------------+----------------+-------------------+--------------------+-------------------+--------------+-----------------+------------+-----------------------------------+----------------+----------------------+
```

2 rows in set (0.07 sec)

mysql> select * from columns where TABLE_SCHEMA='test'\G

*************************** 1. row ***************************

     TABLE_CATALOG: def

      TABLE_SCHEMA: test

        TABLE_NAME: test_table

       COLUMN_NAME: id

  ORDINAL_POSITION: 1

    COLUMN_DEFAULT: NULL

IS_NULLABLE: NO

             DATA_TYPE: int

 CHARACTER_MAXIMUM_LENGTH: NULL

   CHARACTER_OCTET_LENGTH: NULL

        NUMERIC_PRECISION: 10

            NUMERIC_SCALE: 0

       DATETIME_PRECISION: NULL

       CHARACTER_SET_NAME: NULL

           COLLATION_NAME: NULL

              COLUMN_TYPE: int(11)

               COLUMN_KEY: PRI

                    EXTRA: auto_increment

               PRIVILEGES: select,insert,update,references

           COLUMN_COMMENT:

    GENERATION_EXPRESSION:
*************************** 2. row ***************************

            TABLE_CATALOG: def

             TABLE_SCHEMA: test

               TABLE_NAME: test_table

              COLUMN_NAME: name

         ORDINAL_POSITION: 2

           COLUMN_DEFAULT: NULL

              IS_NULLABLE: YES

                DATA_TYPE: varchar

 CHARACTER_MAXIMUM_LENGTH: 100

```
    CHARACTER_OCTET_LENGTH: 300

       NUMERIC_PRECISION: NULL

          NUMERIC_SCALE: NULL

      DATETIME_PRECISION: NULL

      CHARACTER_SET_NAME: utf8

         COLLATION_NAME: utf8_general_ci

           COLUMN_TYPE: varchar(100)

            COLUMN_KEY:

                 EXTRA:

             PRIVILEGES: select,insert,update,references

         COLUMN_COMMENT:

  GENERATION_EXPRESSION:

2 rows in set (0.00 sec)


mysql> ^C

mysql> ^C

mysql> show tables;

+--------------------------------------+

| Tables_in_information_schema         |SCHEMA='test';

+--------------------------------------+

| CHARACTER_SETS                  |

| COLLATIONS                      |

| COLLATION_CHARACTER_SET_APPLICABILITY |

| COLUMNS                         |

| COLUMN_PRIVILEGES                  |
```

| ENGINES |
| EVENTS |
| FILES |
| GLOBAL_STATUS |
| GLOBAL_VARIABLES |
| KEY_COLUMN_USAGE |
| OPTIMIZER_TRACE |
| PARAMETERS |
| PARTITIONS |
| PLUGINS |
| PROCESSLIST |
| PROFILING |
| REFERENTIAL_CONSTRAINTS |
| ROUTINES |
| SCHEMATA |
| SCHEMA_PRIVILEGES |
| SESSION_STATUS |
| SESSION_VARIABLES |
| STATISTICS |
| TABLES |
| TABLESPACES |
| TABLE_CONSTRAINTS |
| TABLE_PRIVILEGES |
| TRIGGERS |
| USER_PRIVILEGES |

```
| VIEWS                          |
| INNODB_LOCKS                   |
| INNODB_TRX                     |
| INNODB_SYS_DATAFILES           |
| INNODB_FT_CONFIG               |
| INNODB_SYS_VIRTUAL             |
| INNODB_CMP                     |
| INNODB_FT_BEING_DELETED        |
| INNODB_CMP_RESET               |
| INNODB_CMP_PER_INDEX           |
| INNODB_CMPMEM_RESET            |
| INNODB_FT_DELETED              |
| INNODB_BUFFER_PAGE_LRU         |
| INNODB_LOCK_WAITS              |
| INNODB_TEMP_TABLE_INFO         |
| INNODB_SYS_INDEXES             |
| INNODB_SYS_TABLES              |
| INNODB_SYS_FIELDS              |
| INNODB_CMP_PER_INDEX_RESET     |
| INNODB_BUFFER_PAGE             |
| INNODB_FT_DEFAULT_STOPWORD     |
| INNODB_FT_INDEX_TABLE          |
| INNODB_FT_INDEX_CACHE          |
| INNODB_SYS_TABLESPACES         |
| INNODB_METRICS                 |
```

| INNODB_SYS_FOREIGN_COLS |

| INNODB_CMPMEM |

| INNODB_BUFFER_POOL_STATS |

| INNODB_SYS_COLUMNS |

| INNODB_SYS_FOREIGN |

| INNODB_SYS_TABLESTATS |

+-------------------------------------+

61 rows in set (0.00 sec)

mysql> select * engine;

ERROR 1064 (42000): You have an error in your SQL syntax; check the manual that corresponds to your MySQL server version for the right syntax to use near 'engine' at line 1

mysql> select * engines;

ERROR 1064 (42000): You have an error in your SQL syntax; check the manual that corresponds to your MySQL server version for the right syntax to use near 'engines' at line 1

mysql> select * from engines;

+--------------------+---------+--+--------------+------+------------+

| ENGINE | SUPPORT | COMMENT | TRANSACTIONS | XA | SAVEPOINTS |

+--------------------+---------+--+--------------+------+------------+

| MEMORY | YES | Hash based, stored in memory, useful for temporary tables | NO | NO | NO |

| CSV | YES | CSV storage engine | NO | NO | NO |

| MRG_MYISAM | YES | Collection of identical MyISAM tables | NO | NO | NO |

| BLACKHOLE | YES | /dev/null storage engine (anything you write to it disappears) | NO | NO | NO |

```
| InnoDB             | DEFAULT | Supports transactions, row-level locking, and foreign keys     | YES
| YES  | YES     |

| PERFORMANCE_SCHEMA | YES    | Performance Schema                                            | NO        | NO
| NO      |

| ARCHIVE            | YES    | Archive storage engine                                       | NO        | NO  | NO
|

| MyISAM             | YES    | MyISAM storage engine                                        | NO        | NO  | NO
|

| FEDERATED          | YES    | Federated MySQL storage engine                               | NO        | NO  |
NO       |

+-------------------+---------+--------------------------------------------------------------+-------------+------+-----------
-+

9 rows in set (0.01 sec)


mysql> show tables;

+---------------------------------------+

| Tables_in_information_schema          |

+---------------------------------------+

| CHARACTER_SETS                |

| COLLATIONS                    |

| COLLATION_CHARACTER_SET_APPLICABILITY |

| COLUMNS                       |

| COLUMN_PRIVILEGES             |

| ENGINES                       |

| EVENTS                        |

| FILES                         |

| GLOBAL_STATUS                 |

| GLOBAL_VARIABLES              |

| KEY_COLUMN_USAGE              |
```

```
| OPTIMIZER_TRACE             |

| PARAMETERS                  |

| PARTITIONS                  |

| PLUGINS                     |

| PROCESSLIST                 |

| PROFILING                   |

| REFERENTIAL_CONSTRAINTS     |

| ROUTINES                    |

| SCHEMATA                    |

| SCHEMA_PRIVILEGES           |

| SESSION_STATUS              |

| SESSION_VARIABLES           |

| STATISTICS                  |

| TABLES                      |

| TABLESPACES                 |

| TABLE_CONSTRAINTS           |

| TABLE_PRIVILEGES            |

| TRIGGERS                    |

| USER_PRIVILEGES             |

| VIEWS                       |

| INNODB_LOCKS                |

| INNODB_TRX                  |

| INNODB_SYS_DATAFILES        |

| INNODB_FT_CONFIG            |

| INNODB_SYS_VIRTUAL          |
```

```
| INNODB_CMP                      |
| INNODB_FT_BEING_DELETED         |
| INNODB_CMP_RESET                |
| INNODB_CMP_PER_INDEX            |
| INNODB_CMPMEM_RESET             |
| INNODB_FT_DELETED               |
| INNODB_BUFFER_PAGE_LRU          |
| INNODB_LOCK_WAITS               |
| INNODB_TEMP_TABLE_INFO          |
| INNODB_SYS_INDEXES              |
| INNODB_SYS_TABLES               |
| INNODB_SYS_FIELDS               |
| INNODB_CMP_PER_INDEX_RESET      |
| INNODB_BUFFER_PAGE              |
| INNODB_FT_DEFAULT_STOPWORD      |
| INNODB_FT_INDEX_TABLE           |
| INNODB_FT_INDEX_CACHE           |
| INNODB_SYS_TABLESPACES          |
| INNODB_METRICS                  |
| INNODB_SYS_FOREIGN_COLS         |
| INNODB_CMPMEM                   |
| INNODB_BUFFER_POOL_STATS        |
| INNODB_SYS_COLUMNS              |
| INNODB_SYS_FOREIGN              |
| INNODB_SYS_TABLESTATS           |
```

```
+------------------------------------+

61 rows in set (0.00 sec)


mysql> select * from events;

Empty set (0.00 sec)


mysql> desc events;

+---------------------+--------------+------+-----+--------------------+-------+
| Field               | Type         | Null | Key | Default            | Extra |
+---------------------+--------------+------+-----+--------------------+-------+
| EVENT_CATALOG       | varchar(64)  | NO   |     |                    |       |
| EVENT_SCHEMA        | varchar(64)  | NO   |     |                    |       |
| EVENT_NAME          | varchar(64)  | NO   |     |                    |       |
| DEFINER             | varchar(93)  | NO   |     |                    |       |
| TIME_ZONE           | varchar(64)  | NO   |     |                    |       |
| EVENT_BODY          | varchar(8)   | NO   |     |                    |       |
| EVENT_DEFINITION    | longtext     | NO   |     | NULL               |       |
| EVENT_TYPE          | varchar(9)   | NO   |     |                    |       |
| EXECUTE_AT          | datetime     | YES  |     | NULL               |       |
| INTERVAL_VALUE      | varchar(256) | YES  |     | NULL               |       |
| INTERVAL_FIELD      | varchar(18)  | YES  |     | NULL               |       |
| SQL_MODE            | varchar(8192)| NO   |     |                    |       |
| STARTS              | datetime     | YES  |     | NULL               |       |
| ENDS                | datetime     | YES  |     | NULL               |       |
| STATUS              | varchar(18)  | NO   |     |                    |       |
```

```
| ON_COMPLETION      | varchar(12) | NO  |   |                     |     |
| CREATED            | datetime    | NO  |   | 0000-00-00 00:00:00 |     |
| LAST_ALTERED       | datetime    | NO  |   | 0000-00-00 00:00:00 |     |
| LAST_EXECUTED      | datetime    | YES |   | NULL                |     |
| EVENT_COMMENT      | varchar(64) | NO  |   |                     |     |
| ORIGINATOR         | bigint(10)  | NO  |   | 0                   |     |
| CHARACTER_SET_CLIENT | varchar(32) | NO |  |                     |     |
| COLLATION_CONNECTION | varchar(32) | NO |  |                     |     |
| DATABASE_COLLATION   | varchar(32) | NO |  |                     |     |
+--------------------+--------------+------+-----+--------------------+------+
24 rows in set (0.00 sec)


mysql> show tables;
+--------------------------------------+
| Tables_in_information_schema         |
+--------------------------------------+
| CHARACTER_SETS                       |
| COLLATIONS                           |
| COLLATION_CHARACTER_SET_APPLICABILITY |
| COLUMNS                              |
| COLUMN_PRIVILEGES                    |
| ENGINES                             |
| EVENTS                              |
| FILES                               |
| GLOBAL_STATUS                       |
```

```
| GLOBAL_VARIABLES            |
| KEY_COLUMN_USAGE            |
| OPTIMIZER_TRACE             |
| PARAMETERS                  |
| PARTITIONS                  |
| PLUGINS                     |
| PROCESSLIST                 |
| PROFILING                   |
| REFERENTIAL_CONSTRAINTS     |
| ROUTINES                    |
| SCHEMATA                    |
| SCHEMA_PRIVILEGES           |
| SESSION_STATUS              |
| SESSION_VARIABLES           |
| STATISTICS                  |
| TABLES                      |
| TABLESPACES                 |
| TABLE_CONSTRAINTS           |
| TABLE_PRIVILEGES            |
| TRIGGERS                    |
| USER_PRIVILEGES             |
| VIEWS                       |
| INNODB_LOCKS                |
| INNODB_TRX                  |
| INNODB_SYS_DATAFILES        |
```

| INNODB_FT_CONFIG |

| INNODB_SYS_VIRTUAL |

| INNODB_CMP |

| INNODB_FT_BEING_DELETED |

| INNODB_CMP_RESET |

| INNODB_CMP_PER_INDEX |

| INNODB_CMPMEM_RESET |

| INNODB_FT_DELETED |

| INNODB_BUFFER_PAGE_LRU |

| INNODB_LOCK_WAITS |

| INNODB_TEMP_TABLE_INFO |

| INNODB_SYS_INDEXES |

| INNODB_SYS_TABLES |

| INNODB_SYS_FIELDS |

| INNODB_CMP_PER_INDEX_RESET |

| INNODB_BUFFER_PAGE |

| INNODB_FT_DEFAULT_STOPWORD |

| INNODB_FT_INDEX_TABLE |

| INNODB_FT_INDEX_CACHE |

| INNODB_SYS_TABLESPACES |

| INNODB_METRICS |

| INNODB_SYS_FOREIGN_COLS |

| INNODB_CMPMEM |

| INNODB_BUFFER_POOL_STATS |

| INNODB_SYS_COLUMNS |

| INNODB_SYS_FOREIGN |

| INNODB_SYS_TABLESTATS |

+--------------------------------------+

61 rows in set (0.00 sec)

mysql> select * from global_status limit 10;

ERROR 3167 (HY000): The 'INFORMATION_SCHEMA.GLOBAL_STATUS' feature is disabled; see the documentation for 'show_compatibility_56'

mysql> select * from GLOBAL_STATUS limit 10;

ERROR 3167 (HY000): The 'INFORMATION_SCHEMA.GLOBAL_STATUS' feature is disabled; see the documentation for 'show_compatibility_56'

mysql>

mysql>

mysql> show global status like '%thread%';

+---+-------+

| Variable_name | Value |

+---+-------+

| Delayed_insert_threads | 0 |

| Performance_schema_thread_classes_lost | 0 |

| Performance_schema_thread_instances_lost | 0 |

| Slow_launch_threads | 0 |

| Threads_cached | 0 |

| Threads_connected | 3 |

| Threads_created | 3 |

| Threads_running | 1 |

+---+-------+

8 rows in set (0.08 sec)

```
mysql> show global status like '%aborted%';

+------------------+-------+
| Variable_name    | Value |
+------------------+-------+
| Aborted_clients  | 0     |
| Aborted_connects | 7     |
+------------------+-------+
2 rows in set (0.00 sec)


mysql> show variables like '%port%';

+-------------------------+-------+
| Variable_name           | Value |
+-------------------------+-------+
| innodb_support_xa       | ON    |
| large_files_support     | ON    |
| port                    | 3333  |
| report_host             |       |
| report_password         |       |
| report_port             | 3333  |
| report_user             |       |
| require_secure_transport | OFF   |
+-------------------------+-------+
8 rows in set (0.11 sec)
```

```
mysql> show variables like '%max_conne%';

+--------------------+-------+
| Variable_name      | Value |
+--------------------+-------+
| max_connect_errors | 100   |
| max_connections    | 2000  |
+--------------------+-------+
2 rows in set (0.01 sec)


mysql> select * from processlist;

+----+------+-----------+--------------------+---------+------+-----------+-------------------------+
| ID | USER | HOST      | DB                 | COMMAND | TIME | STATE     | INFO                    |
+----+------+-----------+--------------------+---------+------+-----------+-------------------------+
|  2 | root | localhost | sys                | Sleep   | 8643 |           | NULL                    |
| 28 | root | localhost | information_schema | Query   |    0 | executing | select * from processlist |
+----+------+-----------+--------------------+---------+------+-----------+-------------------------+
2 rows in set (0.01 sec)


mysql> show processlist;

+----+------+-----------+--------------------+---------+------+----------+------------------+
| Id | User | Host      | db                 | Command | Time | State    | Info             |
+----+------+-----------+--------------------+---------+------+----------+------------------+
|  2 | root | localhost | sys                | Sleep   | 8761 |          | NULL             |
| 28 | root | localhost | information_schema | Query   |    0 | starting | show processlist |
```

```
+----+------+-----------+-------------------+---------+------+----------+------------------+
```

2 rows in set (0.00 sec)

mysql> desc tables;

```
+-----------------+--------------------+------+-----+---------+-------+
| Field           | Type               | Null | Key | Default | Extra |
+-----------------+--------------------+------+-----+---------+-------+
| TABLE_CATALOG   | varchar(512)       | NO   |     |         |       |
| TABLE_SCHEMA    | varchar(64)        | NO   |     |         |       |
| TABLE_NAME      | varchar(64)        | NO   |     |         |       |
| TABLE_TYPE      | varchar(64)        | NO   |     |         |       |
| ENGINE          | varchar(64)        | YES  |     | NULL    |       |
| VERSION         | bigint(21) unsigned | YES |     | NULL    |       |
| ROW_FORMAT      | varchar(10)        | YES  |     | NULL    |       |
| TABLE_ROWS      | bigint(21) unsigned | YES |     | NULL    |       |
| AVG_ROW_LENGTH  | bigint(21) unsigned | YES |     | NULL    |       |
| DATA_LENGTH     | bigint(21) unsigned | YES |     | NULL    |       |
| MAX_DATA_LENGTH | bigint(21) unsigned | YES |     | NULL    |       |
| INDEX_LENGTH    | bigint(21) unsigned | YES |     | NULL    |       |
| DATA_FREE       | bigint(21) unsigned | YES |     | NULL    |       |
| AUTO_INCREMENT  | bigint(21) unsigned | YES |     | NULL    |       |
| CREATE_TIME     | datetime           | YES  |     | NULL    |       |
| UPDATE_TIME     | datetime           | YES  |     | NULL    |       |
| CHECK_TIME      | datetime           | YES  |     | NULL    |       |
| TABLE_COLLATION | varchar(32)        | YES  |     | NULL    |       |
```

```
| CHECKSUM       | bigint(21) unsigned | YES |    | NULL   |      |

| CREATE_OPTIONS | varchar(255)    | YES |    | NULL   |      |

| TABLE_COMMENT  | varchar(2048)   | NO |   |      |      |

+-----------------+--------------------+------+-----+---------+------+

21 rows in set (0.00 sec)


mysql> ^C

mysql> desc TABLE_CONSTRAINTS;

+--------------------+--------------+------+-----+---------+------+

| Field          | Type     | Null | Key | Default | Extra |

+--------------------+--------------+------+-----+---------+------+

| CONSTRAINT_CATALOG | varchar(512) | NO |   |      |      |

| CONSTRAINT_SCHEMA  | varchar(64) | NO |   |      |      |

| CONSTRAINT_NAME    | varchar(64) | NO |   |      |      |

| TABLE_SCHEMA     | varchar(64) | NO |   |      |      |

| TABLE_NAME      | varchar(64) | NO |   |      |      |

| CONSTRAINT_TYPE   | varchar(64) | NO |   |      |      |

+--------------------+--------------+------+-----+---------+------+

6 rows in set (0.01 sec)


mysql> select * from TABLE_CONSTRAINTS where ^C

mysql>  select * from TABLE_CONSTRAINTS where CONSTRAINT_SCHEMA='test';

+--------------------+------------------+----------------+--------------+------------+-----------------+

|  CONSTRAINT_CATALOG  |  CONSTRAINT_SCHEMA  |  CONSTRAINT_NAME  |  TABLE_SCHEMA  |
TABLE_NAME | CONSTRAINT_TYPE |

+--------------------+------------------+----------------+--------------+------------+-----------------+
```

```
| def            | test           | PRIMARY        | test        | test_table | PRIMARY KEY     |

+-------------------+------------------+----------------+-------------+-----------+----------------+

1 row in set (0.05 sec)
```