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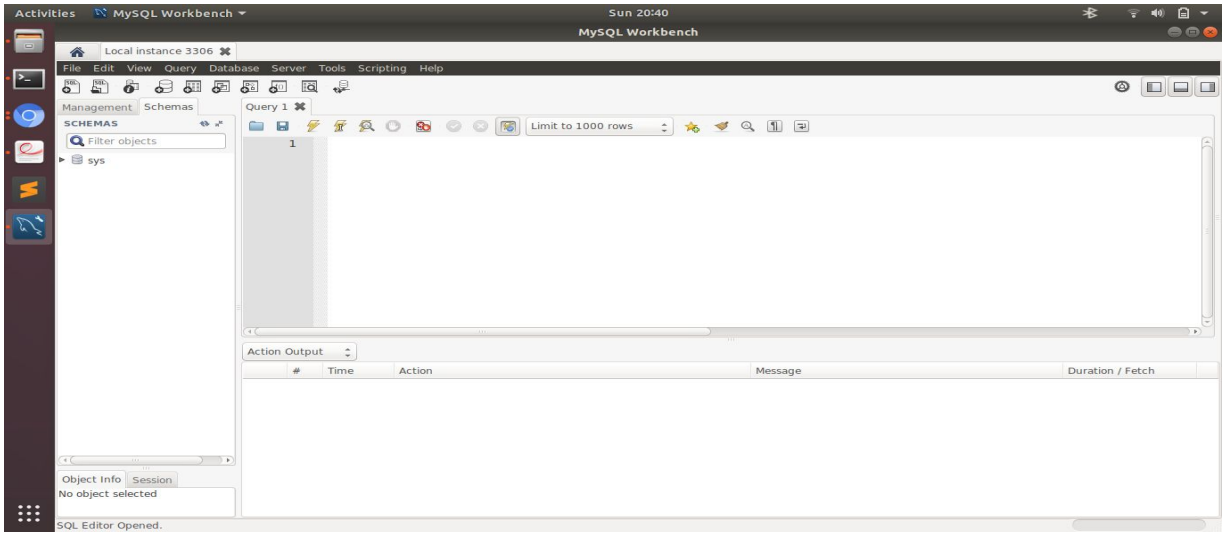
Part I : **Connecting Client to server**.

1. My SQL server is installed.

```
shreyas@shreyas-Inspiron-15-3567:~/Documents/dataQueryModels/test_db-master$ mysql --version
mysql  Ver 8.0.13 for Linux on x86_64 (MySQL Community Server - GPL)
```

2. Connected SQL server to SQL Client.



Part II/PART III: **Command line console and executing commands.**

- First, the command mysql < employees.sql is executed.
- employees.sql script contains SQL queries to be executed .Initially it contains a DROP employees database if it already exists and CREATE a new database employees.
- After creating the database employees file contains DROP TABLE if exists and CREATE TABLE commands to create following tables in employees database:-
    - Employees
    - Department
    - Dept_manager
    - Dept_emp
    - Titles
    - salaries

- After creating tables in the database following views are created in the database:-
    1. View ***dept_emp_latest_date*** is created from table *dept_emp.*
    2. View ***current_dept_emp*** is created from table *dept_emp* and view *dept_emp_latest_date*.
- In the next step, data is loaded in the tables using .dump files of the respective tables. The dump files contain INSERT statements.

```
shreyas@shreyas-Inspiron-15-3567:~/Documents/dataQueryModels/test_db-master$ mysql <employees.sql -u root -p
Enter password:
INFO
CREATING DATABASE STRUCTURE
INFO
storage engine: InnoDB
INFO
LOADING departments
INFO
LOADING employees
INFO
LOADING dept_emp
INFO
LOADING dept_manager
INFO
LOADING titles
INFO
LOADING salaries
data_load_time_diff
00:03:49
```

- Post Insertion of data in the tables the installation is tested by running test_employees_md5.sql, the MD5 hash is generated for the records in the tables and compared with the expected values of the hashes of the respective tables.
  mysql -u root -p < test_employees_md5.sql
- Initially ***expected_values*** table is created. Then,an empty table ***found_values*** which is similar to ***expected_values*** table is created.
- In the next step, data is inserted into ***expected_values*** table. The data consists of the table names, number of records, expected md5 values of the records in the tables.

```
shreyas@shreyas-Inspiron-15-3567:~/Documents/dataQueryModels/test_db-master$ mysql -u root -p < test_employees_md5.sql
Enter password:
INFO
TESTING INSTALLATION
table_name      expected_records        expected_crc
departments     9       d1af5e170d2d1591d776d5638d71fc5f
dept_emp        331603  ccf6fe516f990bdaa49713fc478701b7
dept_manager    24      8720e2f0853ac9096b689c14664f847e
employees       300024  4ec56ab5ba37218d187cf6ab09ce1aa1
salaries        2844047 fd220654e95aea1b169624ffe3fca934
titles  443308  bfa016c472df68e70a03facafa1bc0a8
table_name      found_records           found_crc
departments     9       d1af5e170d2d1591d776d5638d71fc5f
dept_emp        331603  ccf6fe516f990bdaa49713fc478701b7
dept_manager    24      8720e2f0853ac9096b689c14664f847e
employees       300024  4ec56ab5ba37218d187cf6ab09ce1aa1
salaries        2844047 fd220654e95aea1b169624ffe3fca934
titles  443308  bfa016c472df68e70a03facafa1bc0a8
table_name      records_match   crc_match
departments     OK      ok
dept_emp        OK      ok
dept_manager    OK      ok
employees       OK      ok
salaries        OK      ok
titles  OK      ok
computation_time
00:00:13
summary result
CRC     OK
count   OK
```

- After inserting the table names in ***expected_values*** table, a new table ***tchecksum*** table is created with ENGINE=blackhole and MD5 hash of the records of all the tables is generated and inserted in the table.
- The MD5 hash of the records of the table generated in the step above, number of records and table name is inserted in ***found_values*** table.
- After that the number of records and md5 hashes of the ***expected_values*** table and ***found_values*** are compared for the respective tables and the output table with “ok” or “not ok” is printed as a result.

- In the next step, fail count of the number of records in expected_values and found_values which are not matching is stored in the following variables:
    - crc_fail :- Count of number of non-matching MD5 hashes in expected_values and found_values table for table_name column.
    - count_fail:- Count of number of non-matching number of records in expected_values and found_values table for table_name column
- After that, tables ***expected_values*** and ***found_values*** are dropped.
- In the next step, result is printed as “OK” or “FAIL”, depending on whether crc_fail and count_fail variables are zero or non-zero.