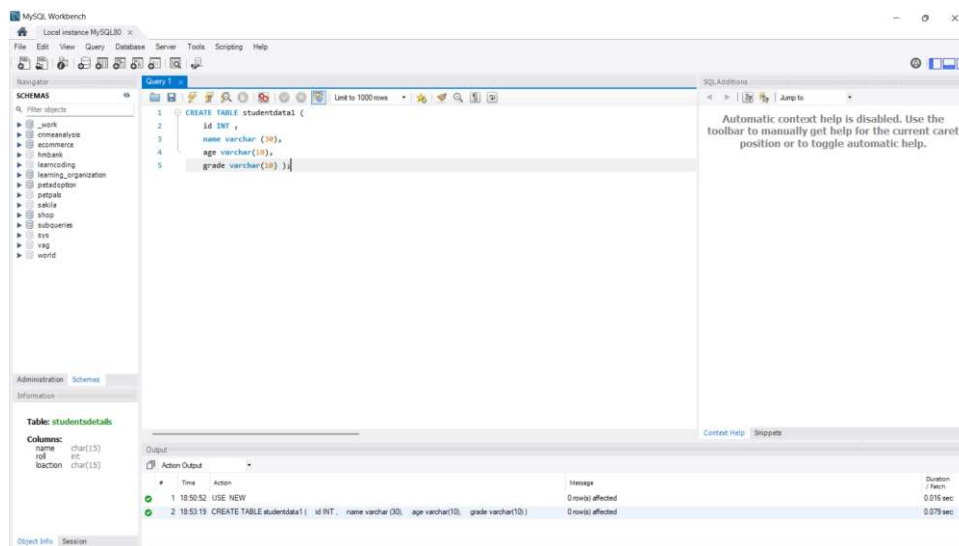


NAME –Jayant Jhunja

# DATA CLEANING AND TRANSFORMATION

Data cleaning and transformation in MYSQL refer to the process of preparing and refining raw data within a database to make it suitable for analysis, reporting, or other downstream processes. This process involves handling missing or incorrect data, converting data types, aggregating data, and applying various transformations to enhance the quality and usefulness of the data.

HANDS ON --



MySQL Workbench

Local instance MySQL80

File Edit View Query Database Server Tools Scripting Help

Navigator

SCHEMAS

Filter objects

- work
- criminalanalysis
- ecommerce
- hmbank
- learncoding
- learning\_organization
- petadoption
- petpals
- salvia
- shop
- subqueries
- sys
- vag
- world

Administration Schemas

Information

Table: studentdetails

Columns:

- name char(15)
- roll int
- location char(15)

Object Info Session

Query 1

```

6
7 * insert into studentdata(id,name,age,grade) values(null,'stella','20','A+');
8 (*,appu,'20','A+');
9 (*,bob,'21','C');
10 (*,sunny,'21,null);
11 (*,null,'21','C');
12
13 * select *from studentdata;

```

Result Grid

| id | name   | age | grade |
|----|--------|-----|-------|
| 1  | stella | 20  | A+    |
| 1  | appu   | 20  | A+    |
| 5  | bob    | 21  | C     |
| 6  | sunny  | 21  |       |
| 7  |        | 21  | C     |

SQL Actions

Automatic context help is disabled. Use the toolbar to manually get help for the current caret position or to toggle automatic help.

Output

| # | Time     | Action   | Message  | Duration / Fetch      |
|---|----------|--|--|-----------------------|
| 1 | 18.55.52 | USE NEW  | 0 rows affected                                      | 0.016 sec             |
| 2 | 18.55.53 | CREATE TABLE studentdata1 ( id INT , name varchar(30), age varchar(10), grade varchar(10))   | 0 rows affected                                      | 0.075 sec             |
| 3 | 18.54.46 | insert into studentdata1(id,name,age,grade) values(null,'stella','20','A+'), (1,'appu','20','A+'), (5,'bob','21','C'), (6,'sunny','21',''), (7,'null','21','C'); | 5 rows affected Records: 5 Duplicates: 0 Warnings: 0 | 0.021 sec             |
| 4 | 18.55.08 | select *from studentdata1 LIMIT 0, 1000  | 5 rows returned                                      | 0.000 sec / 0.000 sec |

MySQL Workbench

Local instance MySQL80

File Edit View Query Database Server Tools Scripting Help

Navigator

SCHEMAS

Filter objects

- work
- criminalanalysis
- ecommerce
- hmbank
- learncoding
- learning\_organization
- petadoption
- petpals
- salvia
- shop
- subqueries
- sys
- vag
- world

Administration Schemas

Information

Table: studentdetails

Columns:

- name char(15)
- roll int
- location char(15)

Object Info Session

Query 1

```

16 * select name,count(name) as Actual_count from studentdata
17 group by name
18 having count(name)>1;
19 * with cte as
20 (select name,
21 row_number() over (partition by name order by name desc) as row_no
22 from studentdata) select *from cte;
23

```

Result Grid

| name   | row_no |
|--------|--------|
| stella | 1      |
| appu   | 1      |
| bob    | 1      |
| stella | 1      |
| sunny  | 1      |

SQL Actions

Automatic context help is disabled. Use the toolbar to manually get help for the current caret position or to toggle automatic help.

Output

| # | Time     | Action  | Message         | Duration / Fetch      |
|---|----------|---|-----------------|-----------------------|
| 1 | 18.56.34 | select name,count(name) as Actual_count from studentdata1 group by name having count(name)>1 LIMIT 0, 1000    | 0 rows returned | 0.000 sec / 0.000 sec |
| 2 | 18.56.34 | with cte as (select name, ROW_NUMBER() over (partition by name order by name desc) as row_no from student...) | 5 rows returned | 0.000 sec / 0.000 sec |

MySQL Workbench

Local instance MySQL80

File Edit View Query Database Server Tools Scripting Help

Navigator

SCHEMAS

Filter objects

- work
- criminalanalysis
- ecommerce
- hmbank
- learncoding
- learning\_organization
- petadoption
- petpals
- salvia
- shop
- subqueries
- sys
- vag
- world

Administration Schemas

Information

Table: studentdetails

Columns:

- name char(15)
- roll int
- location char(15)

Object Info Session

Query 1

```

31 * select *from studentdata;
32
33 /*Deleting the data where student name is null*/
34 * select * from studentdata
35 where name is null;
36
37 * delete from studentdata
38 where name is null;

```

Result Grid

| id | name | age | grade |
|----|------|-----|-------|
| 7  |      | 21  | C     |

SQL Actions

Automatic context help is disabled. Use the toolbar to manually get help for the current caret position or to toggle automatic help.

Output

| # | Time     | Action   | Message         | Duration / Fetch      |
|---|----------|--|-----------------|-----------------------|
| 1 | 18.03.05 | select *from studentdata1 where name is null LIMIT 0, 1000 | 1 rows returned | 0.000 sec / 0.000 sec |

MySQL Workbench

Local instance MySQL80

File Edit View Query Database Server Tools Scripting Help

Navigator

SCHEMAS

- work
- criminalanalysis
- ecommerce
- humbank
- learncoding
- learning\_organization
- petadoption
- petpals
- salvia
- shop
- subqueries
- sys
- vag
- world

Administration Schemas

Information

Table: studentdetails

Columns:

- name char(15)
- roll int
- location char(15)

Object Info Session

Query 1

```

17 group by name
18 having count(name)>1;
19 with cte as
20 (
21 select name,
22 ROW_NUMBER() over (partition by name order by name desc) as row_no
23 from studentdata1)
24 select *from cte;
25
26 /*Deleting the duplicated rows from temporary result set*/
27 delete from cte
28 where row_no>1;
29
30 /*STEP-2 ----> removing the null values over here*/
31 select *from studentdata1;
32
33 /*Selecting the data where student name is null*/
34 select * from studentdata1
35 where name is null;
36
37 delete from studentdata1
38 where name is null;
39
40

```

SQLAdditions

Automatic context help is disabled. Use the toolbar to manually get help for the current caret position or to toggle automatic help.

Output

| # | Time     | Action  | Message           | Duration / Fetch      |
|---|----------|---|-------------------|-----------------------|
| 1 | 19.03.05 | select from studentdata1 where name is null LIMIT 0, 1000 | 1 row(s) returned | 0.000 sec / 0.000 sec |
| 2 | 19.03.19 | delete from studentdata1 where name is null               | 1 row(s) affected | 0.000 sec             |

MySQL Workbench

Local instance MySQL80

File Edit View Query Database Server Tools Scripting Help

Navigator

SCHEMAS

- work
- criminalanalysis
- ecommerce
- humbank
- learncoding
- learning\_organization
- petadoption
- petpals
- salvia
- shop
- subqueries
- sys
- vag
- world

Administration Schemas

Information

Table: studentdetails

Columns:

- name char(15)
- roll int
- location char(15)

Object Info Session

Query 2

```

39 /*updating the null values where id and grade column is null*/
40
41 select *from studentdata1 where id is null;
42
43 update studentdata1 set id=?
44 where id is null;
45
46 select *from studentdata1;
47

```

Result Grid

| id | name   | age | grade |
|----|--------|-----|-------|
| 7  | stella | 20  | A+    |
| 1  | apuu   | 20  | A+    |
| 5  | bob    | 21  | C     |
| 16 | sureny | 21  | none  |

studentdata1 134 studentdata1 135

Output

| # | Time     | Action  | Message  | Duration / Fetch      |
|---|----------|---|--|-----------------------|
| 2 | 19.03.19 | delete from studentdata1 where name is null             | 1 row(s) affected  | 0.000 sec             |
| 3 | 19.03.50 | select from studentdata1 where id is null LIMIT 0, 1000 | 1 row(s) returned  | 0.000 sec / 0.000 sec |
| 4 | 19.03.50 | update studentdata1 set id=? where id is null           | 1 row(s) affected Rows matched: 1 Changed: 1 Warnings: 0 | 0.016 sec             |
| 5 | 19.03.50 | select from studentdata1 LIMIT 0, 1000                  | 4 row(s) returned  | 0.000 sec / 0.000 sec |

MySQL Workbench

Local instance MySQL80

File Edit View Query Database Server Tools Scripting Help

Navigator

SCHEMAS

- work
- criminalanalysis
- ecommerce
- humbank
- learncoding
- learning\_organization
- petadoption
- petpals
- salvia
- shop
- subqueries
- sys
- vag
- world

Administration Schemas

Information

Table: studentdetails

Columns:

- name char(15)
- roll int
- location char(15)

Object Info Session

Query 3

```

38 /*STEP-2 ----> removing the null values over here*/
39 select *from studentdata1;
40
41 /*Selecting the data where student name is null*/
42 select * from studentdata1
43 where name is null;
44
45 delete from studentdata1
46 where name is null;
47
48 /*updating the null values where id and grade column is null*/
49
50 select *from studentdata1 where id is null;
51
52 update studentdata1 set id=?
53 where id is null;
54
55 select *from studentdata1;
56
57 /*How we need to update the value of grade also*/
58
59 update studentdata1 set grade=?
60 where grade is null;
61

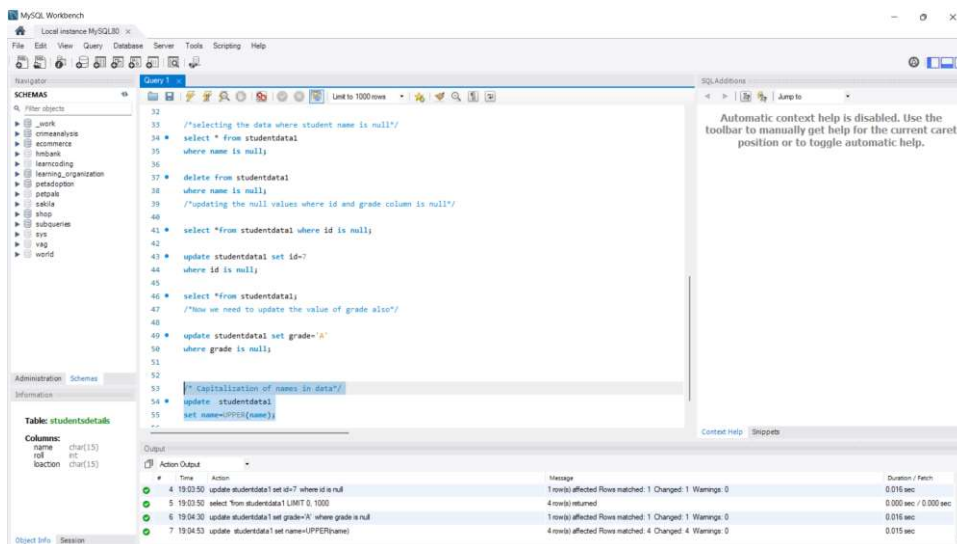
```

SQLAdditions

Automatic context help is disabled. Use the toolbar to manually get help for the current caret position or to toggle automatic help.

Output

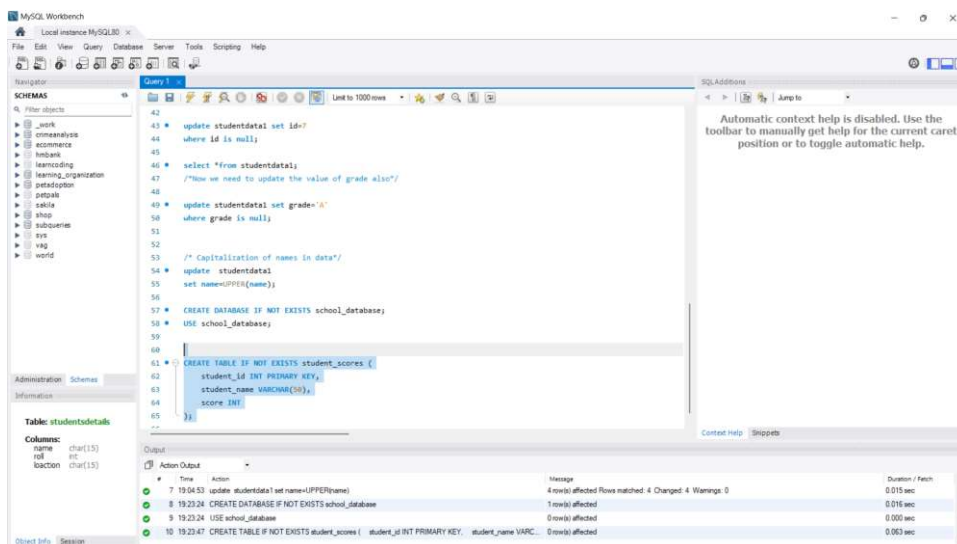
| # | Time     | Action  | Message  | Duration / Fetch      |
|---|----------|---|--|-----------------------|
| 3 | 19.03.50 | select from studentdata1 where id is null LIMIT 0, 1000 | 1 row(s) returned  | 0.000 sec / 0.000 sec |
| 4 | 19.03.50 | update studentdata1 set id=? where id is null           | 1 row(s) affected Rows matched: 1 Changed: 1 Warnings: 0 | 0.016 sec             |
| 5 | 19.03.50 | select from studentdata1 LIMIT 0, 1000                  | 4 row(s) returned  | 0.000 sec / 0.000 sec |
| 6 | 19.04.30 | update studentdata1 set grade=? where grade is null     | 1 row(s) affected Rows matched: 1 Changed: 1 Warnings: 0 | 0.016 sec             |

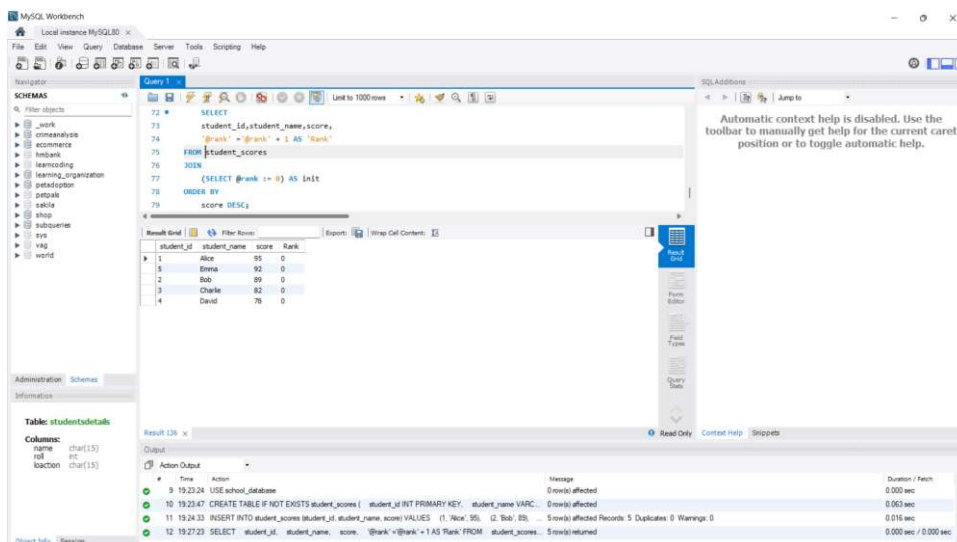
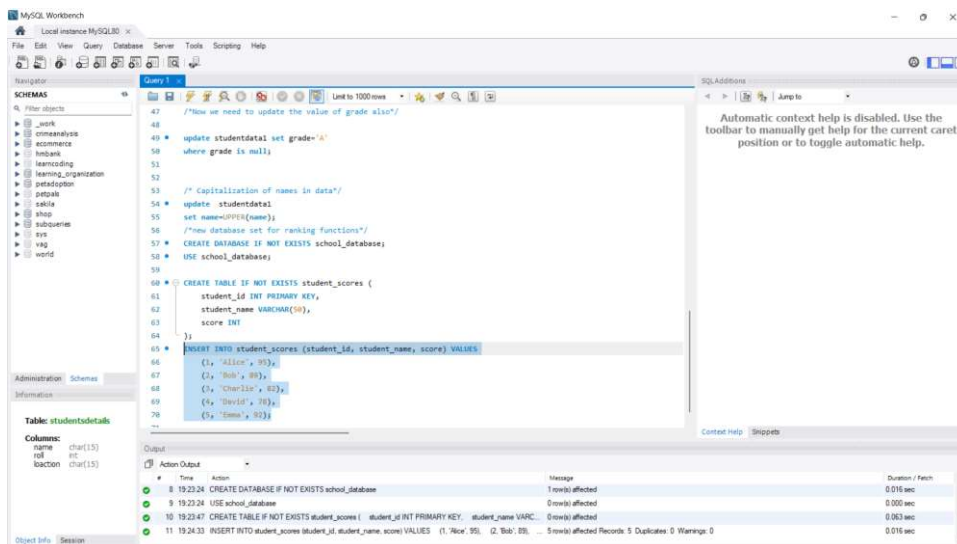


# RANKING FUNCTIONS

In MySQL, ranking functions are used to assign a rank or position to each row within the result set based on specified criteria. These functions are particularly useful when you want to order the result set and assign a rank to each row based on some specific conditions, such as sorting by a column or a combination of columns.

## HANDS ON--





# STORED PROCEDURE

A stored procedure in MySQL is a set of SQL statements that can be stored in the database and executed later. It is a precompiled collection of one or more SQL statements that can be reused and called as a single unit from an application, other stored procedures, or directly from the MySQL command-line interface.

HERE ARE BENIFITS OF STORED PROCEDURE-

- \*Code Reusability: Procedures can be called from various parts of an application, promoting code reuse.
- \*Modularity: Procedures allow for modular code organization and maintenance.
- \*Security: Permissions can be granted on the procedure level, providing a level of security.

