

User Management in MySQL

- ❖ MySQL merupakan database server yang populer dan salah satu fiturnya adalah **user management**
- ❖ User management digunakan untuk melindungi database dari **unauthorized users**
- ❖ Tugas melindungi database adalah salah satu tugas seorang **database administrator**
- ❖ **Database administrators (DBAs)** bertugas mengorganisasi dan menyimpan database. Tugas tersebut dapat mencakup [capacity planning](#), [installation](#), [configuration](#), [database design](#), [migration](#), performance monitoring, [security](#), [troubleshooting](#), serta [backup](#) and [data recovery](#)

User Management in MySQL

- ❖ Pada database MySQL, Seorang database administrators menggunakan database 'mysql' untuk mengelola user

```
mysql> show databases;
+-----+
| Database |
+-----+
| information_schema |
| academic      |
| mysql         |
| pegawai      |
| performance_schema |
| test         |
+-----+
17 rows in set (0.00 sec)

mysql> _
```

Isi database
mysql

```
mysql> use mysql ;
Database changed
mysql> show tables
-> ;
+-----+
| Tables_in_mysql |
+-----+
| columns_priv |
| db           |
| func         |
| help_category |
| help_keyword |
| help_relation |
| help_topic   |
| host         |
| proc         |
| procs_priv  |
| tables_priv  |
| time_zone   |
| time_zone_leap_second |
| time_zone_name |
| time_zone_transition |
| time_zone_transition_type |
| user        |
+-----+
17 rows in set (0.01 sec)

mysql> _
```

Terdapat 5 tabel di database MySQL, yaitu : **user**, **db**, **host**, **tables_priv** and **columns_priv**

User Management in MySQL

GRANT TABLES : user table

Tabel ini berisi data user, koneksi dan 'user access privileges'.
Tingkat / level akses pada tabel ini bersifat 'Global'.

Struktur Tabel 'user' :

```
mysql> describe user  
-> ;
```

Field	Type	Null	Key	Default	Extra
Host	char(60)	NO	PRI		
User	char(16)	NO	PRI		
Password	char(16)	NO			
Select_priv	enum('N','Y')	NO		N	
Insert_priv	enum('N','Y')	NO		N	
Update_priv	enum('N','Y')	NO		N	
Delete_priv	enum('N','Y')	NO		N	
Create_priv	enum('N','Y')	NO		N	
Drop_priv	enum('N','Y')	NO		N	
Reload_priv	enum('N','Y')	NO		N	
Shutdown_priv	enum('N','Y')	NO		N	
Process_priv	enum('N','Y')	NO		N	
File_priv	enum('N','Y')	NO		N	
Grant_priv	enum('N','Y')	NO		N	
References_priv	enum('N','Y')	NO		N	
Index_priv	enum('N','Y')	NO		N	
Alter_priv	enum('N','Y')	NO		N	
Show_db_priv	enum('N','Y')	NO		N	
Super_priv	enum('N','Y')	NO		N	
Create_tmp_table_priv	enum('N','Y')	NO		N	
Lock_tables_priv	enum('N','Y')	NO		N	
Execute_priv	enum('N','Y')	NO		N	
Repl_slave_priv	enum('N','Y')	NO		N	
Repl_client_priv	enum('N','Y')	NO		N	
Create_view_priv	enum('N','Y')	NO		N	
Show_view_priv	enum('N','Y')	NO		N	
Create_routine_priv	enum('N','Y')	NO		N	
Alter_routine_priv	enum('N','Y')	NO		N	
Create_user_priv	enum('N','Y')	NO		N	
ssl_type	enum('','ANY','X509','SPECIFIED')	NO			
ssl_cipher	blob	NO			
x509_issuer	blob	NO			
x509_subject	blob	NO			
max_questions	int(11) unsigned	NO		0	
max_updates	int(11) unsigned	NO		0	
max_connections	int(11) unsigned	NO		0	
max_user_connections	int(11) unsigned	NO		0	

```
37 rows in set (0.05 sec)
```

```
mysql>
```

User Management in MySQL

GRANT TABLES :

db table

Tabel ini digunakan untuk mengelola hak akses user untuk 'database' tertentu.

Struktur Tabel 'db' :

```
mysql> desc db;
```

Field	Type	Null	Key	Default	Extra
Host	char(60)	NO	PRI		
Db	char(64)	NO	PRI		
User	char(16)	NO	PRI		
Select_priv	enum('N','Y')	NO		N	
Insert_priv	enum('N','Y')	NO		N	
Update_priv	enum('N','Y')	NO		N	
Delete_priv	enum('N','Y')	NO		N	
Create_priv	enum('N','Y')	NO		N	
Drop_priv	enum('N','Y')	NO		N	
Grant_priv	enum('N','Y')	NO		N	
References_priv	enum('N','Y')	NO		N	
Index_priv	enum('N','Y')	NO		N	
Alter_priv	enum('N','Y')	NO		N	
Create_tmp_table_priv	enum('N','Y')	NO		N	
Lock_tables_priv	enum('N','Y')	NO		N	
Create_view_priv	enum('N','Y')	NO		N	
Show_view_priv	enum('N','Y')	NO		N	
Create_routine_priv	enum('N','Y')	NO		N	
Alter_routine_priv	enum('N','Y')	NO		N	
Execute_priv	enum('N','Y')	NO		N	
Event_priv	enum('N','Y')	NO		N	
Trigger_priv	enum('N','Y')	NO		N	

```
22 rows in set (0.22 sec)  
mysql> _
```

User Management in MySQL

GRANT TABLES :

tables_priv table

Tabel ini digunakan untuk mengelola hak akses user untuk 'tabel' tertentu dari suatu database.

columns_priv table

Tabel ini digunakan untuk mengelola hak akses user untuk 'kolom / column' tertentu dari suatu tabel.

User Management in MySQL

User Privileges type :

Hak akses 'user' secara Normal

Mencakup hak akses pada tingkat 'database' atau 'column'.

1. ALTER
2. CREATE
3. DELETE
4. DROP
5. INDEX
6. INSERT
7. SELECT
8. UPDATE
9. REFERENCES

Hak akses 'Administrator'

Digunakan hanya oleh user 'root' atau user pada tingkat administrator.

1. FILE
2. PROCESS
3. RELOAD
4. SHUTDOWN
5. CREATE TEMPORARY TABLE
6. EXECUTE
7. LOCK TABLES
8. REPLICATION CLIENT
9. REPLICATION SLAVE
10. SHOW DATABASES
11. SUPER

Hak akses khusus

Dapat diaplikasikan untuk tiap user

1. ALL
2. USAGE

User Management in MySQL

User 'Anonymous' dan 'Root'

User 'Anonymous' adalah user tanpa identitas dan password. Dengan user ini, database mysql dapat diakses oleh semua user tanpa user name dan password. Oleh karena itu, user ini seharusnya dihapus untuk menjaga keamanan database.

```
mysql> select host,user,password from user;
+-----+-----+-----+
| host | user | password |
+-----+-----+-----+
| localhost | root |          |
| 127.0.0.1 | root |          |
| localhost |     |          |
+-----+-----+-----+
3 rows in set (0.00 sec)

mysql>
```

host terdiri dari :

- **Localhost** : Database MySQL database hanya dapat diakses oleh komputer server lokal
- 127.0.0.1 : IP default, database MySQL hanya dapat dibuka dengan menyertakan IP ini
- % : database ySQL dapat diakses dari komputer dari server yang berbeda

Root User

Anonymous User

User 'root' merupakan user dengan level tertinggi yang dapat menjalankan semua perintah di MySQL.

User 'root' terbentuk secara otomatis saat pertama kali meng-install MySQL Server.

User Management in MySQL

Mengubah password user 'root'

Password user 'root' harus diganti untuk menjaga keamanan database.

Perintah untuk mengubah password :

```
update user set password=password('.....')  
where user='root';
```

Lanjutkan dengan perintah :

```
flush privileges;
```

Contoh :

```
mysql> update user set password=password('ab11')  
-> where user='root'  
-> ;  
Query OK, 1 row affected (0.12 sec)  
Rows matched: 1 Changed: 1 Warnings: 0  
  
mysql> flush privileges  
-> ;  
Query OK, 0 rows affected (0.15 sec)  
  
mysql>
```

Perintah 'flush privileges' akan menginstruksikan server untuk membaca kembali tabel hak akses.

User Management in MySQL

Menambah User Baru

Menambah user baru dapat dilakukan seperti menambah record pada tabel

Insert into tname values (.....);

Contoh :

```
mysql> insert into user(host,user,password)
-> values ('localhost','john',password('john2017'));
Query OK, 1 row affected, 3 warnings (0.00 sec)

mysql> flush privileges;
Query OK, 0 rows affected (0.01 sec)

mysql> select host,user,password from user;
+-----+-----+-----+
| host      | user  | password                               |
+-----+-----+-----+
| localhost | root  |                                         |
| 127.0.0.1 | root  |                                         |
| localhost | john  | *399FCDBC2AED469A148CE9024D3755EB06981958 |
| localhost |      |                                         |
+-----+-----+-----+
4 rows in set (0.00 sec)

mysql>
```

user with name john does not have access privileges yet

```
mysql> select * from user where user='john' \G;
***** 1 row *****
Host: localhost
User: john
Password: *399FCDBC2AED469A148CE9024D3755EB06981958
Select_priv: N
Insert_priv: N
Update_priv: N
Delete_priv: N
Create_priv: N
Drop_priv: N
Reload_priv: N
Shutdown_priv: N
Process_priv: N
File_priv: N
Grant_priv: N
References_priv: N
Index_priv: N
Alter_priv: N
Show_db_priv: N
Super_priv: N
Create_tmp_table_priv: N
Lock_tables_priv: N
Execute_priv: N
Repl_slave_priv: N
Repl_client_priv: N
Create_view_priv: N
Show_view_priv: N
Create_routine_priv: N
Alter_routine_priv: N
Create_user_priv: N
Event_priv: N
Trigger_priv: N
Create_tablespace_priv: N
ssl_type:
ssl_cipher:
x509_issuer:
x509_subject:
max_questions: 0
max_updates: 0
max_connections: 0
max_user_connections: 0
plugin:
authentication_string: NULL
password_expired: N
1 row in set (0.00 sec)

ERROR:
No query specified

mysql>
```

login ke Server MySQL server dengan user 'john'

```
C:\wamp\bin\mysql\mysql5.6.17\bin>mysql -u john -h localhost -p
Enter password: *****
Welcome to the MySQL monitor. Commands end with ; or \g.
Your MySQL connection id is 38
Server version: 5.6.17 MySQL Community Server (GPL)

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

mysql> show databases;
+-----+
| Database |
+-----+
| information_schema |
| test      |
+-----+
2 rows in set (0.13 sec)

mysql>
```

no database can be accessed by 'john', because this user does not have access privileges

User Management in MySQL

Granting Hak Akses (access privileges)

Syntax :

GRANT Access_type [(column_name)],..... **ON** db_name.tb_name **TO** User_name [**IDENTIFIED BY** "password"] [**WITH GRANT** access_choise]

Contoh :

```
mysql> grant insert,select,update on *.* to john@localhost;
Query OK, 0 rows affected (0.02 sec)

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

Tipe akses : insert, select, update diberikan pada user 'john'.
Tipe akses ini diaplikasikan untuk semua database (global).
Oleh karena itu, perubahan perubahan hak akses dapat dilihat di tabel 'user'.

login ke server MySQL menggunakan user 'john'

```
C:\wamp\bin\mysql\mysql5.6.17\bin>mysql -u john -h localhost -p
Enter password: *****
Welcome to the MySQL monitor.  Commands end with ; or \g.
Your MySQL connection id is 40
Server version: 5.6.17 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 |
| academic |
| mysql |
| pegawai |
| performance_schema |
| test |
+-----+
6 rows in set (0.02 sec)

mysql>
```

all databases and tables in the MySQL server can be accessed by 'john' with access privileges : insert, select, update

```
mysql> select * from user where user='john' \G;
***** 1. row *****
Host: localhost
User: john
Password: *39*FCDBC2AED469A148CE9024D3755EB06981958
Select_priv: Y
Insert_priv: Y
Update_priv: Y
Delete_priv: N
Create_priv: N
Drop_priv: N
Reload_priv: N
Shutdown_priv: N
Process_priv: N
File_priv: N
Grant_priv: N
References_priv: N
Index_priv: N
Alter_priv: N
Show_db_priv: N
Super_priv: N
Create_tmp_table_priv: N
Lock_tables_priv: N
Execute_priv: N
Repl_slave_priv: N
Repl_client_priv: N
Create_view_priv: N
Show_view_priv: N
Create_routine_priv: N
Alter_routine_priv: N
Create_user_priv: N
Event_priv: N
Trigger_priv: N
Create_tablespace_priv: N
ssl_type:
ssl_cipher:
x509_issuer:
x509_subject:
max_questions: 0
max_updates: 0
max_connections: 0
max_user_connections: 0
plugin:
authentication_string: NULL
password_expired: N
1 row in set (0.01 sec)
```

change of access privileges

User Management in MySQL

Granting Hak Akses (access privileges)

'Grant' dapat juga digunakan untuk membuat user baru secara langsung (tanpa perintah 'insert')

contoh1

```
mysql> grant all privileges on *.* to smith@localhost identified by 'smith123';
Query OK, 0 rows affected (0.00 sec)

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

mysql> select host,user,password from user;
+-----+-----+-----+
| host      | user      | password      |
+-----+-----+-----+
| localhost | root      |               |
| 127.0.0.1 | root      |               |
| localhost | john      | *399FCDBC2AED469A148CE9024D3755EB06981958 |
| localhost | smith     | *8E5A357584BAB2584C1F59B229782D2020F351CC |
+-----+-----+-----+
5 rows in set (0.00 sec)

mysql>
```

```
mysql> select * from user where user='smith' \G;
***** 1. row *****
Host: localhost
User: smith
Password: *8E5A357584BAB2584C1F59B229782D2020F351CC
Select_priv: Y
Insert_priv: Y
Update_priv: Y
Delete_priv: Y
Create_priv: Y
Drop_priv: Y
Reload_priv: Y
Shutdown_priv: Y
Process_priv: Y
File_priv: Y
Grant_priv: N
References_priv: Y
Index_priv: Y
Alter_priv: Y
Show_db_priv: Y
Super_priv: Y
Create_tmp_table_priv: Y
Lock_tables_priv: Y
Execute_priv: Y
Repl_slave_priv: Y
Repl_client_priv: Y
Create_view_priv: Y
Show_view_priv: Y
Create_routine_priv: Y
Alter_routine_priv: Y
Create_user_priv: Y
Event_priv: Y
Trigger_priv: Y
Create_tablespace_priv: Y
ssl_type:
ssl_cipher:
x509_issuer:
x509_subject:
max_questions: 0
max_updates: 0
max_connections: 0
max_user_connections: 0
plugin: mysql_native_password
authentication_string:
password_expired: N
1 row in set (0.02 sec)

ERROR:
No query specified
mysql>
```

```
mysql> select * from user where user='smith' \G;
***** 1. row *****
Host: localhost
User: smith
Password: *8E5A357584BAB2584C1F59B229782D2020F351CC
Select_priv: Y
Insert_priv: Y
Update_priv: Y
Delete_priv: Y
Create_priv: Y
Drop_priv: Y
Reload_priv: Y
Shutdown_priv: Y
Process_priv: Y
File_priv: Y
Grant_priv: Y
References_priv: Y
Index_priv: Y
Alter_priv: Y
Show_db_priv: Y
Super_priv: Y
Create_tmp_table_priv: Y
Lock_tables_priv: Y
Execute_priv: Y
Repl_slave_priv: Y
Repl_client_priv: Y
Create_view_priv: Y
Show_view_priv: Y
Create_routine_priv: Y
Alter_routine_priv: Y
Create_user_priv: Y
Event_priv: Y
Trigger_priv: Y
Create_tablespace_priv: Y
ssl_type:
ssl_cipher:
x509_issuer:
x509_subject:
max_questions: 0
max_updates: 0
max_connections: 0
max_user_connections: 0
plugin: mysql_native_password
authentication_string:
password_expired: N
1 row in set (0.00 sec)

ERROR:
No query specified
mysql>
```

contoh2

```
mysql> grant all privileges on *.* to smith@localhost identified by 'smith123'
-> with grant option;
Query OK, 0 rows affected (0.00 sec)

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

mysql>
```

by adding this option, access privileges 'grant_priv' become 'y'

User Management in MySQL

Granting Hak Akses (access privileges)

contoh3

```
mysql> grant usage on *.* to adam@localhost identified by 'adam321';
Query OK, 0 rows affected (0.05 sec)

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

mysql> select host,user,password from user;
+-----+-----+-----+
| host      | user  | password                                |
+-----+-----+-----+
| localhost | root  |                                          |
| 127.0.0.1 | root  |                                          |
| localhost | john  | *399FCDBC2AED469A148CE9024D3755EB06761958 |
| localhost | smith | *8E5A357584BAB2584C1F59B229782D2020F351CC |
| localhost | adam  | *A2A424DE39C5E30401E6FA79AF78059B2126BF01 |
+-----+-----+-----+
6 rows in set (0.00 sec)

mysql>
```

User 'adam' dapat login ke server MySQL dan mengakses semua databases, tetapi tidak memiliki hak akses.

login ke server MySQL dari localhost user dapat dilakukan dengan berbagai cara :

mysql -u username -h localhost -p password
atau

mysql -u username -h 127.0.0.1 -p password

atau

mysql -u username -p password

login ke server MySQL menggunakan user 'adam'

```
C:\wamp\bin\mysql\mysql5.6.17\bin>mysql -u adam -h localhost -p
Enter password: *****
Welcome to the MySQL monitor.  Commands end with ; or \g.
Your MySQL connection id is 41
Server version: 5.6.17 MySQL Community Server (GPL)

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

mysql> show databases;
+-----+
| Database |
+-----+
| information_schema |
| test      |
+-----+
2 rows in set (0.00 sec)

mysql>
```

User Management in MySQL

Granting Hak Akses (access privileges)

Membuat user baru dengan tipe host '%' (remote host)

contoh4

```
mysql> grant select,insert,update on *.* to black@'%' identified by 'black111';
Query OK, 0 rows affected (0.02 sec)

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

mysql> select host,user,password from user;
+-----+-----+-----+
| host      | user  | password                                     |
+-----+-----+-----+
| localhost | root  |                                             |
| 127.0.0.1 | root  |                                             |
| localhost | john  | *399FCDBC2AED469A148CE9024D3755EB06981958 |
| localhost | smith | *8E5A357584B0B2584C1F59B229782D2020F351CC |
| localhost | adam  | *A2A424DE39C5E30401E6FA290E2905982120B01 |
| %         | black | *714F84667FB78E3C37CE9157B82F014B89C57A51 |
+-----+-----+-----+
7 rows in set (0.00 sec)

mysql>
```

Remote host

login ke server MySQL dari remote host (%) harus menyertakan IP address nya

```
C:\wamp\bin\mysql\mysql5.6.17\bin>mysql -u black -h 192.168.43.254 -p
Enter password: *****
Welcome to the MySQL monitor.  Commands end with ; or \g.
Your MySQL connection id is 42
Server version: 5.6.17 MySQL Community Server (GPL)

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

mysql> show databases;
+-----+
| Database |
+-----+
| information_schema |
| academic |
| mysql |
| pegawai |
| performance_schema |
| test |
+-----+
6 rows in set (0.03 sec)

mysql> _
```

User Management in MySQL

Menghapus Hak Akses (access privileges)

Syntax :

REVOKE access_type **ON** dbname.tbname **FROM** user_name

contoh

```
mysql> revoke insert,select,update on *.* from john@localhost;
Query OK, 0 rows affected (0.00 sec)

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

mysql>
```

Menghapus tipe hak akses : insert, select and update pada user 'john' (tipe host : localhost)

```
mysql> select * from user where user='john' \G;
***** 1. row *****
Host: localhost
User: john
Password: *309FCDBC2AED469A148CE9024D3755EB06981958
Select_priv: N
Insert_priv: N
Update_priv: N
Delete_priv: N
Create_priv: N
Drop_priv: N
Reload_priv: N
Shutdown_priv: N
Process_priv: N
File_priv: N
Grant_priv: N
References_priv: N
Index_priv: N
Alter_priv: N
Show_db_priv: N
Super_priv: N
Create_tmp_table_priv: N
Lock_tables_priv: N
Execute_priv: N
Repl_slave_priv: N
Repl_client_priv: N
Create_view_priv: N
Show_view_priv: N
Create_routine_priv: N
Alter_routine_priv: N
Create_user_priv: N
Event_priv: N
Trigger_priv: N
Create_tablespace_priv: N
ssl_type:
ssl_cipher:
x509_issuer:
x509_subject:
max_questions: 0
max_updates: 0
max_connections: 0
max_user_connections: 0
plugin:
authentication_string: NULL
password_expired: N
1 row in set (0.00 sec)

ERROR:
No query specified

mysql>
```

change of access privileges

User Management in MySQL

Hak Akses (access privileges) level database

Memberikan hak akses hanya pada database tertentu

```
mysql> grant insert,select on academic.* to john@localhost;
Query OK, 0 rows affected (0.00 sec)

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

mysql> _
```

Tipe akses : select, insert diberikan pada database 'academic'.

Untuk mengecek perubahan hak akses dapat dilihat di tabel 'db' (bukan tabel 'user')

```
mysql> select * from db where user='john' \G;
**** 1. row ****
Host: localhost
Db: academic
User: john
Select_priv: Y
Insert_priv: Y
Update_priv: N
Delete_priv: N
Create_priv: N
Drop_priv: N
Grant_priv: N
References_priv: N
Index_priv: N
Alter_priv: N
Create_tmp_table_priv: N
Lock_tables_priv: N
Create_view_priv: N
Show_view_priv: N
Create_routine_priv: N
Alter_routine_priv: N
Execute_priv: N
Event_priv: N
Trigger_priv: N
1 row in set (0.07 sec)

ERROR:
No query specified

mysql>
```

login ke server MySQL menggunakan user 'john'

```
C:\wamp\bin\mysql\mysql5.6.17\bin>mysql -u john -p
Enter password: *****
Welcome to the MySQL monitor.  Commands end with ; or \g.
Your MySQL connection id is 45
Server version: 5.6.17 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 |
| academic |
| test |
+-----+
3 rows in set (0.00 sec)

mysql> _
```

Hanya database 'academic' yang dapat di akses oleh user 'john'

User Management in MySQL

Hak Akses (access privileges) level database

login ke server MySQL menggunakan user 'john'

```
C:\wamp\bin\mysql\mysql5.6.17\bin>mysql -u john -p
Enter password: *****
Welcome to the MySQL monitor.  Commands end with ; or \g.
Your MySQL connection id is 45
Server version: 5.6.17 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 |
| academic |
| test |
+-----+
3 rows in set (0.00 sec)

mysql>
```

Semua tabel pada database 'academic' dapat diakses oleh user 'john'

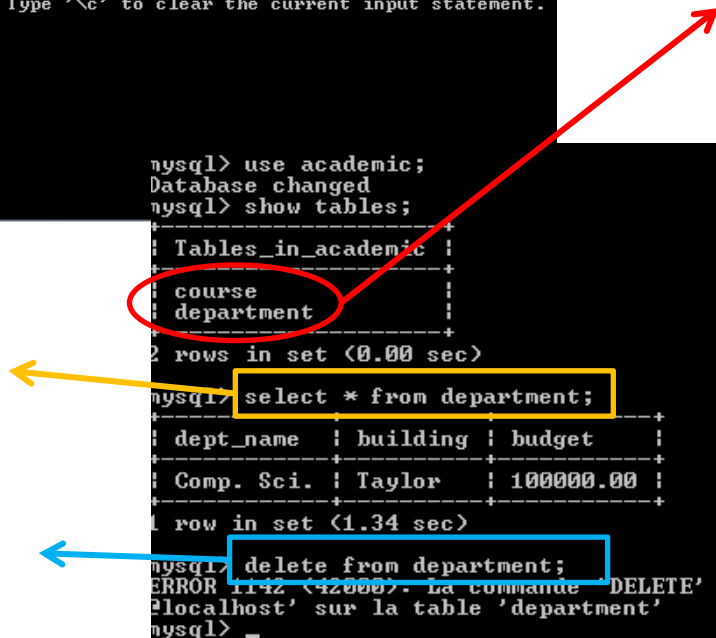
```
mysql> use academic;
Database changed
mysql> show tables;
+-----+
| Tables_in_academic |
+-----+
| course |
| department |
+-----+
2 rows in set (0.00 sec)

mysql> select * from department;
+-----+-----+-----+
| dept_name | building | budget |
+-----+-----+-----+
| Comp. Sci. | Taylor | 100000.00 |
+-----+-----+-----+
1 row in set (1.34 sec)

mysql> delete from department;
ERROR 1142 (42000): La commande 'DELETE' est interdite à l'utilisateur: 'john'@'localhost' sur la table 'department'
mysql>
```

this operation can be accessed by user 'john'

this operation cannot be accessed by user 'john'



User Management in MySQL

Hak Akses (access privileges) level tabel

Memberikan hak akses hanya pada tabel tertentu

contoh

```
mysql> grant insert,select on academic.department to john@localhost;
Query OK, 0 rows affected (0.22 sec)

mysql> flush privileges;
Query OK, 0 rows affected (0.05 sec)
```

```
mysql> select * from tables_priv where user='john' \G;
***** 1. row *****
Host: localhost
Db: academic
User: john
Table_name: department
Grantor: root@localhost
Timestamp: 0000-00-00 00:00:00
Table_priv: Select,Insert
Column_priv:
1 row in set (0.06 sec)

ERROR:
No query specified

mysql>
```

Tipe akses : select, insert hanya diberikan pada tabel 'department' di database 'academic'.

Untuk mengecek perubahan hak akses dapat dilihat di tabel 'tables_priv' (bukan tabel 'user' atau 'db')

login ke server MySQL menggunakan user 'john'

```
C:\wamp\bin\mysql\mysql5.6.17\bin>mysql -u john -p
Enter password: *****
Welcome to the MySQL monitor.  Commands end with ; or \g.
Your MySQL connection id is 46
Server version: 5.6.17 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 |
| academic |
| test |
+-----+
3 rows in set (0.00 sec)

mysql> use academic
Database changed
mysql> show tables;
+-----+
| Tables_in_academic |
+-----+
| department |
+-----+
1 row in set (0.00 sec)

mysql>
```

Hanya database 'academic' yang dapat diakses oleh user 'john'

User Management in MySQL

Hak Akses (access privileges) level column

Memberikan hak akses pada kolom-kolom tertentu

contoh

```
mysql> grant insert(budget),select(dept_name,building)
-> on academic.department to john@localhost;
Query OK, 0 rows affected (0.17 sec)

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

Tipe akses : insert diberikan hanya untuk kolom 'budget'
Pada tabel 'department', select hanya diberikan untuk kolom
'dept_name' dan 'building' pada tabel 'department'.
Untuk mengecek perubahan hak akses dapat dilihat pada tabel
'columns_priv' (bukan tabel 'user' atau 'db' atau 'user')

```
mysql> select * from columns_priv where user='john' \G;
***** 1. row *****
Host: localhost
Db: academic
User: john
Table_name: department
Column_name: dept_name
Timestamp: 0000-00-00 00:00:00
Column_priv: Select
***** 2. row *****
Host: localhost
Db: academic
User: john
Table_name: department
Column_name: budget
Timestamp: 0000-00-00 00:00:00
Column_priv: Insert
***** 3. row *****
Host: localhost
Db: academic
User: john
Table_name: department
Column_name: building
Timestamp: 0000-00-00 00:00:00
Column_priv: Select
3 rows in set (0.00 sec)

ERROR:
No query specified
mysql>
```

login ke server MySQL menggunakan user 'john'

```
C:\wamp\bin\mysql\mysql5.6.17\bin>mysql -u john -p
Enter password: *****
Welcome to the MySQL monitor. Commands end with ; or \g.
Your MySQL connection id is 46
Server version: 5.6.17 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 |
| academic |
| test |
+-----+
3 rows in set (0.00 sec)

mysql> use academic;
Database changed
mysql> show tables;
+-----+
| Tables_in_academic |
+-----+
| department |
+-----+
1 row in set (0.00 sec)

mysql>
```

```
mysql> desc department;
+-----+-----+-----+-----+-----+-----+
| Field | Type | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+-----+
| dept_name | varchar(20) | NO | PRI | NULL | |
| building | varchar(15) | YES | | NULL | |
| budget | decimal(12,2) | YES | | NULL | |
+-----+-----+-----+-----+-----+-----+
3 rows in set (0.03 sec)

mysql> select dept_name,building from department;
+-----+-----+
| dept_name | building |
+-----+-----+
| Comp. Sci. | Taylor |
+-----+-----+
1 row in set (0.00 sec)

mysql> select * from department;
ERROR 1142 (42000): La commande 'SELECT' est interdite à l'utilisateur: 'john'@'localhost' sur la table 'department'
mysql>
```

this operation can be accessed by user 'john'