Security

Security

- Security is the prevention of unauthorised access to the database or data contained within the database.

- Security could be enforced by
  - **Views** furnish only a certain amount of security
    - User can see data in a view
    - User can not access data not included in the view
  - **DBA** (database administrator) **determines/grants** the types of access
    - Group 1: update and retrieve anything in the database
    - Group 2: no update but retrieve anything
    - Group 3: update and retrieve only a portion of the database
    - Group 4: no update but retrieve only a portion of the database

- **Security Mechanism** – **Grant / Revoke**
  - Different types of privileges can be granted to different users
  - Privileges include: Select, insert, update, delete, …
  - Access can be revoked when necessary

Create Users

- Able to create users and give them specific access rights

- To see the list of users:
  SELECT user, host FROM mysql.user;

- To create a user:
  CREATE USER 'user1'@'localhost' IDENTIFIED BY 'mypass';

- Now, see users again
  SELECT user, host FROM mysql.user;

- To remove the user:
  DROP USER 'user1'@'localhost';

- Now, if you see users again you will see 'user1' has been removed!

user	host
root	127.0.0.1
root	::1
	localhost
pma	localhost
root	localhost

user	host
root	127.0.0.1
root	::1
	localhost
pma	localhost
root	localhost
user1	localhost

GRANT access

- **Syntax**

  GRANT <operation> ON <tablename> TO user

- For example:
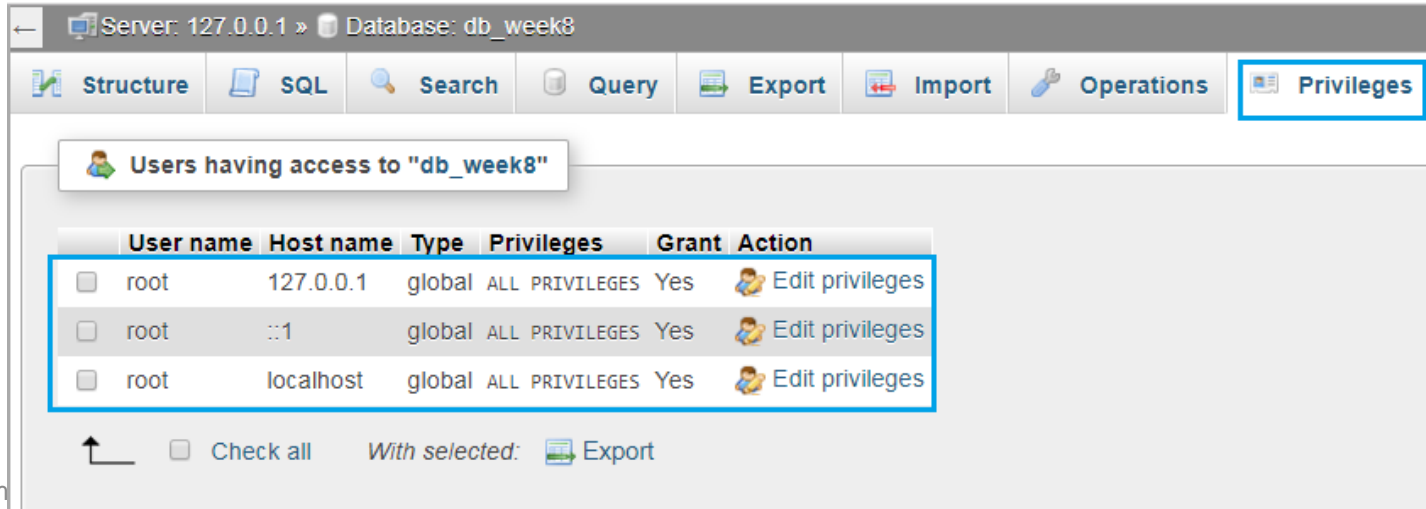
  GRANT ALL ON db_week8.* TO 'user1'@'localhost';   [We only use this as an example in the next slide!]
  GRANT SELECT ON Staff TO user2
  GRANT INSERT ON Staff TO user2
  GRANT DELETE ON Staff TO user3

- To see current users of a database, select database on your right hand side list and then click on **Privileges** tab, for example you see for **db_week8**:
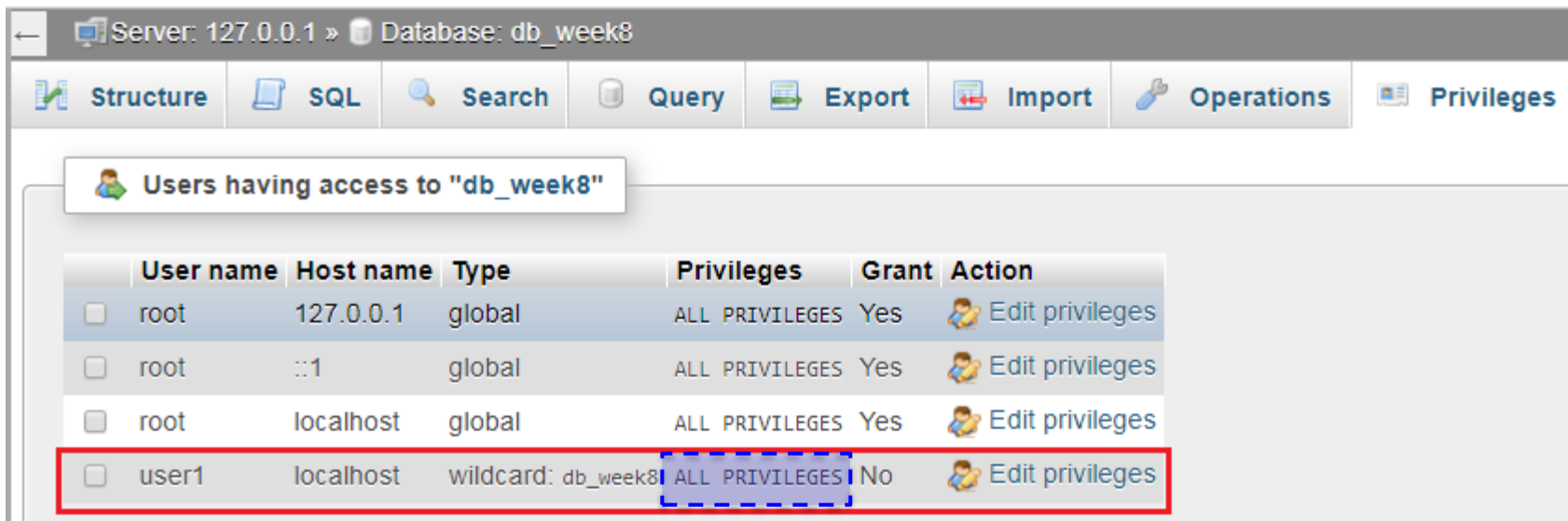
GRANT access

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- Now, execute
  GRANT ALL ON db_week8.* TO 'user1'@'localhost';

- To see updated users of **db_week8**, select **db_week8** on your right hand side list and then click on **Privileges** tab:

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REVOKE access

- **Syntax**

  REVOKE <operation> ON <tablename> FROM user

- For example:

  REVOKE INSERT ON db_week8.* FROM 'user1'@'localhost';   [We only use this as an example below!]
  REVOKE SELECT ON Staff FROM user2
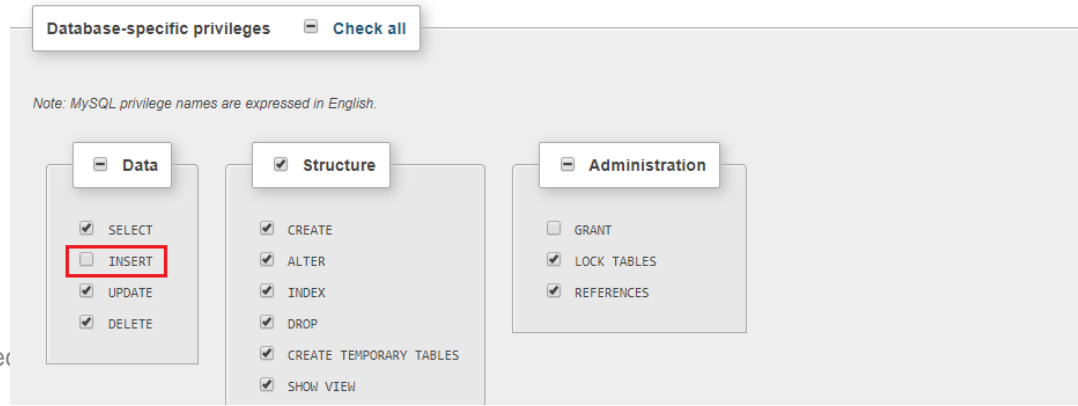 REVOKE DELETE ON Staff FROM user3

- After we execute

  REVOKE INSERT ON db_week8.* FROM 'user1'@'localhost';

  - Go to Privileges tab of db_week8, and then click on Edit Privileges

Thank you