

DATABASE SQL



Pesantren PeTIK II YBM PLN

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Pertemuan Ke-15





Materi

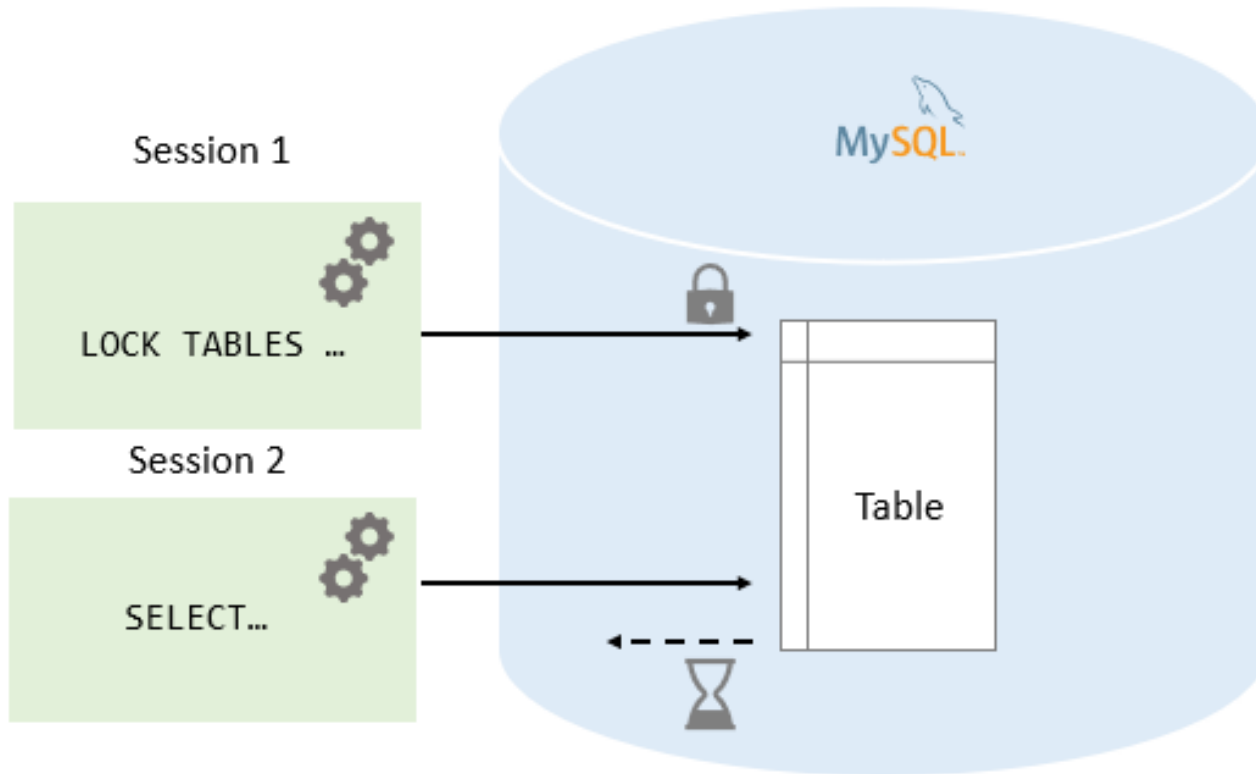
1. Pengantar Database
2. Pemodelan Data
3. Model Relasional Database
4. Normalisasi Database
5. Pengantar SQL
6. Perintah SQL SELECT 1
7. Perintah SQL SELECT 2
9. Fungsi Aggregate dan Grouping Data
10. Sub Query & SQL Join Table
11. View dan Analisa Query
12. Store Procedure dan Function
13. Trigger dan Transaction
14. Manajemen User
- 15. Backup dan Restore**



15. Backup dan Restore



Lock Table



Lock Table adalah mekanisme mengunci table, yang dapat digunakan membatasi sesi klien atau klien lain mengakses table selama periode tertentu.

<https://www.mysqltutorial.org/mysql-table-locking/>



LOCK TABLES (a)

- ❑ Berkenaan dengan penguncian sebuah table
- ❑ Contoh Kasus :

Sebuah database dapat digunakan oleh beberapa aplikasi, misalnya untuk internal aplikasi desktop sedangkan untuk eksternal berbasis web. Terkadang kedua aplikasi mengakses tabel secara bersamaan maka akan mungkin terjadi kesalahan data, contohnya klasik adalah tentang stok barang, aplikasi desktop sedang melakukan penambahan stok pada tabel produk, dan aplikasi web sedang melakukan penghitungan stok ketika proses penambahan belum selesai





LOCK TABLES (b)

- ❑ Pada kasus stok barang (produk) ini bisa dihindari dengan menerapkan LOCK TABLES
- ❑ LOCK TABLES melakukan penguncian tabel ketika proses sedang berlangsung, kemudian akan membebaskan table (UNLOCK TABLES) ketika proses telah berakhir
- ❑ LOCK TABLES telah disupport oleh MySQL versi 5
- ❑ Ada dua jenis LOCK TABLES
 1. READ LOCK TABLES
 2. WRITE LOCK TABLES





READ LOCK TABLES

- ❑ Penguncian table sehingga table hanya bisa dilakukan proses baca saja yang diterapkan pada semua session
- ❑ Jika terjadi manipulasi tabel seperti INSERT, UPDATE dan DELETE, truncate status nya akan selalu waiting hingga proses UNLOCK TABLES dilakukan
- ❑ Contoh :

```
mysql> LOCK TABLE produk READ;
```

```
mysql> update produk set stok=stok + 10 where id=1;
```

```
ERROR 1099 (HY000): Table 'produk' was locked with a READ lock and  
can't be updated
```





Contoh READ LOCK TABLES

- Contoh LOCK table produk dalam session yang sama :

```
mysql> LOCK TABLE produk READ;
```

```
mysql> update produk set stok=stok + 10 where id=1;
```

```
ERROR 1099 (HY000): Table 'produk' was locked with a READ lock and can't  
be updated
```

- Jika dilakukan pada session lain maka perintah akan dieksekusi ketika sudah dijalankan UNLOCK TABLES;

```
mysql> update produk set stok=stok + 10 where id=1;
```

Proses diatas masih menunggu proses UNLOCK TABLES





WRITE LOCK TABLES

- ❑ Penguncian table sehingga table hanya bisa dilakukan proses SELECT,INSERT,UPDATE,DELETE pada session sendiri saja
- ❑ Jika terjadi manipulasi tabel seperti INSERT. UPDATE dan DELETE, truncate pada session lain status nya akan selalu waiting hingga proses UNLOCK TABLES dilakukan
- ❑ Session lain hanya bisa melakukan proses read atau SELECT saja





Contoh WRITE LOCK TABLES

- Contoh LOCK table produk dalam session yang sama :

```
mysql> LOCK TABLE produk WRITE;
```

```
mysql> update produk set stok=stok + 10 where id=1;
```

Query update sukses dijalankan

- Jika dilakukan pada session lain maka perintah akan dieksekusi ketika sudah dijalankan UNLOCK TABLES;

```
mysql> update produk set stok=stok + 10 where id=1;
```

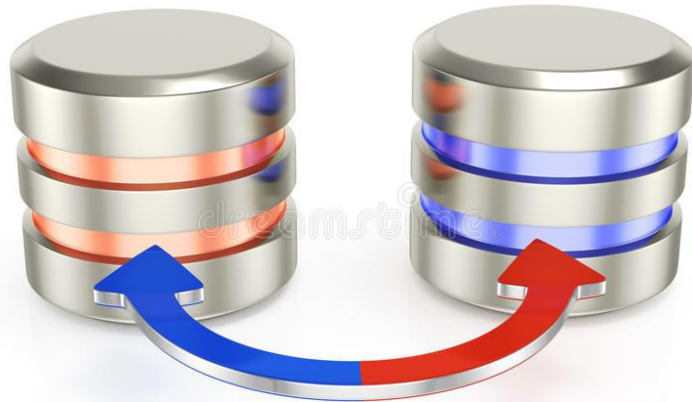
Proses diatas masih menunggu proses UNLOCK TABLES



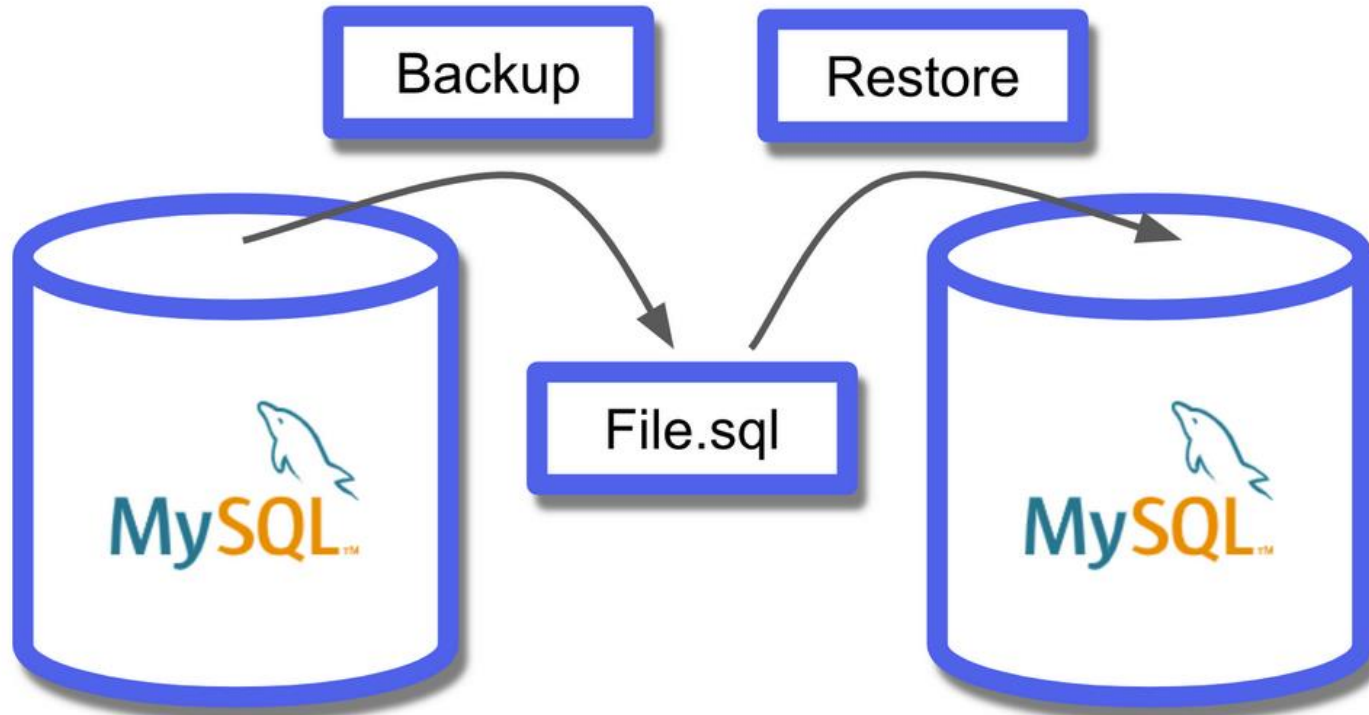


Backup & Restore

- Backup dan Restore database adalah praktik untuk membuat salinan berkala data pada sistem database ke perangkat sekunder yang terpisah dan kemudian menggunakan salinan tersebut untuk memulihkan data ke sebuah sistem database lain.



Backup dan Restore



<https://vocon-it.com/2018/11/27/mysql-backup-restore-on-openshift/>

Backup MySQL :: mysqldump (1)

- Perintah **mysqldump** untuk backup database ke format file SQL

By default, **mysqldump** writes information as SQL statements to the standard output. You can save the output in a file:

```
1 shell> mysqldump [arguments] > file_name
```

To dump all databases, invoke **mysqldump** with the --all-databases option:

```
1 shell> mysqldump --all-databases > dump.sql
```

To dump only specific databases, name them on the command line and use the --databases option:

```
1 shell> mysqldump --databases db1 db2 db3 > dump.sql
```

<https://dev.mysql.com/doc>

The --databases option causes all names on the command line to be treated as database names. Without this option, **mysqldump** treats the first name as a database name and those following as table names.



Backup MySQL :: mysqldump (2)

- Perintah **mysqldump** untuk backup database ke format file

To dump a single database, name it on the command line:

```
1 shell> mysqldump --databases test > dump.sql
```

In the single-database case, it is permissible to omit the --databases option:

```
1 shell> mysqldump test > dump.sql
```

To dump only specific tables from a database, name them on the command line following the database name:

```
1 shell> mysqldump test t1 t3 t7 > dump.sql
```

<https://dev.mysql.com/doc>



Latihan Backup Database

- Backup database dbpos

```
#mysqldump -u root -p dbpos > D:\dbpos_20210326.sql
```

- Backup database dbpos hanya skema table saja tanpa data

```
#mysqldump -u root -p --no-data dbpos > D:\dbpos_20210326.sql
```

- Backup database dbpos hanya data saja

```
#mysqldump -u root -p --no-create-info dbpos > D:\dbpos_20210326.sql
```

- Backup tabel jenis_produk, produk pada database dbpos

```
#mysqldump -u root -p dbpos jenis_produk produk > D:\dbpos.sql
```



Restore MySQL :: Reload File SQL Backup

If the file is a single-database dump not containing CREATE DATABASE and USE statements, create the database first (if necessary):

```
1 shell> mysqladmin create db1
```

Then specify the database name when you load the dump file:

```
1 shell> mysql db1 < dump.sql
```

Alternatively, from within **mysql**, create the database, select it as the default database, and load the dump file:

```
1 mysql> CREATE DATABASE IF NOT EXISTS db1;  
2 mysql> USE db1;  
3 mysql> source dump.sql
```

<https://dev.mysql.com/doc>



Latihan Restore Database

- Buat database baru dbpos2 sebagai backup database dbpos

```
#mysqladmin create dbpos2 -u root -p
```

- Restore file hasil backup ke dbpos2

```
#mysql -u root -p dbpos2 < D:\dbpos_20210326.sql
```

- Cara lain dalam prompt mysql

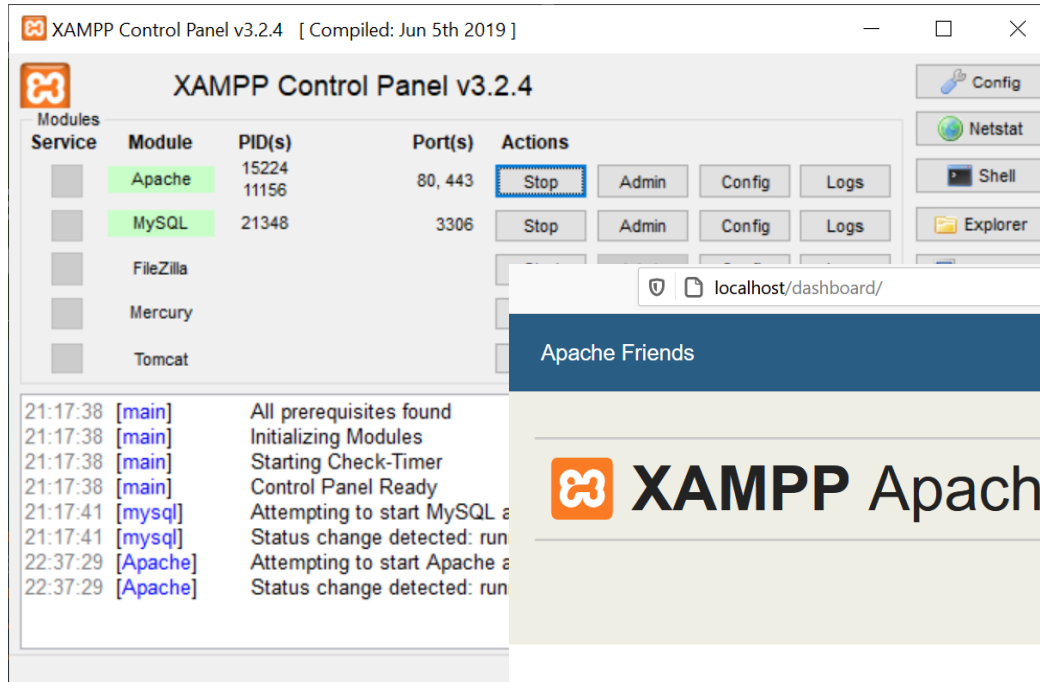
```
mysql> CREATE DATABASE IF NOT EXIST dbpos2;
```

```
mysql> USE dbpos2
```

```
mysql> source dbpos_20210326.sql
```

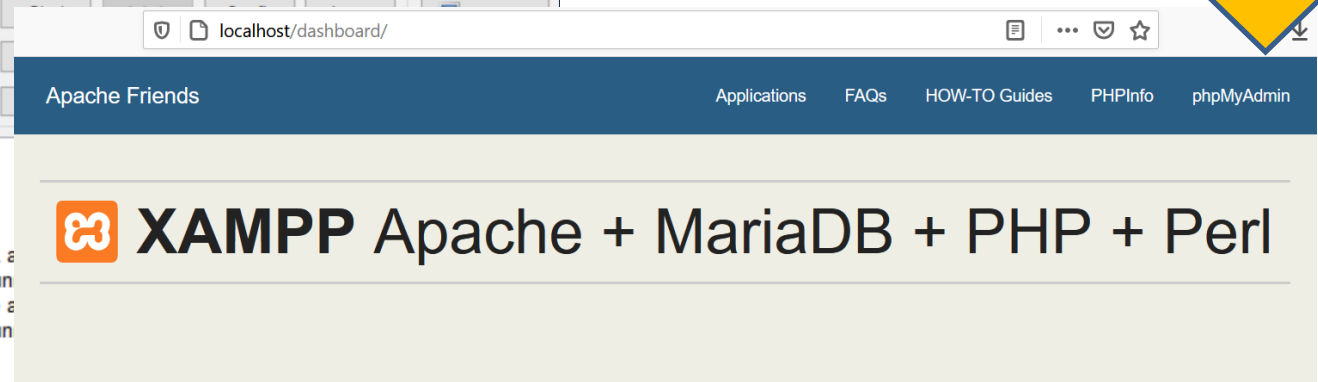


Backup & Restore :: phpMyAdmin (1)



Buka browser (Firefox/Chrome),
Arahkan URL ke <http://localhost/phpmyadmin/>

Click

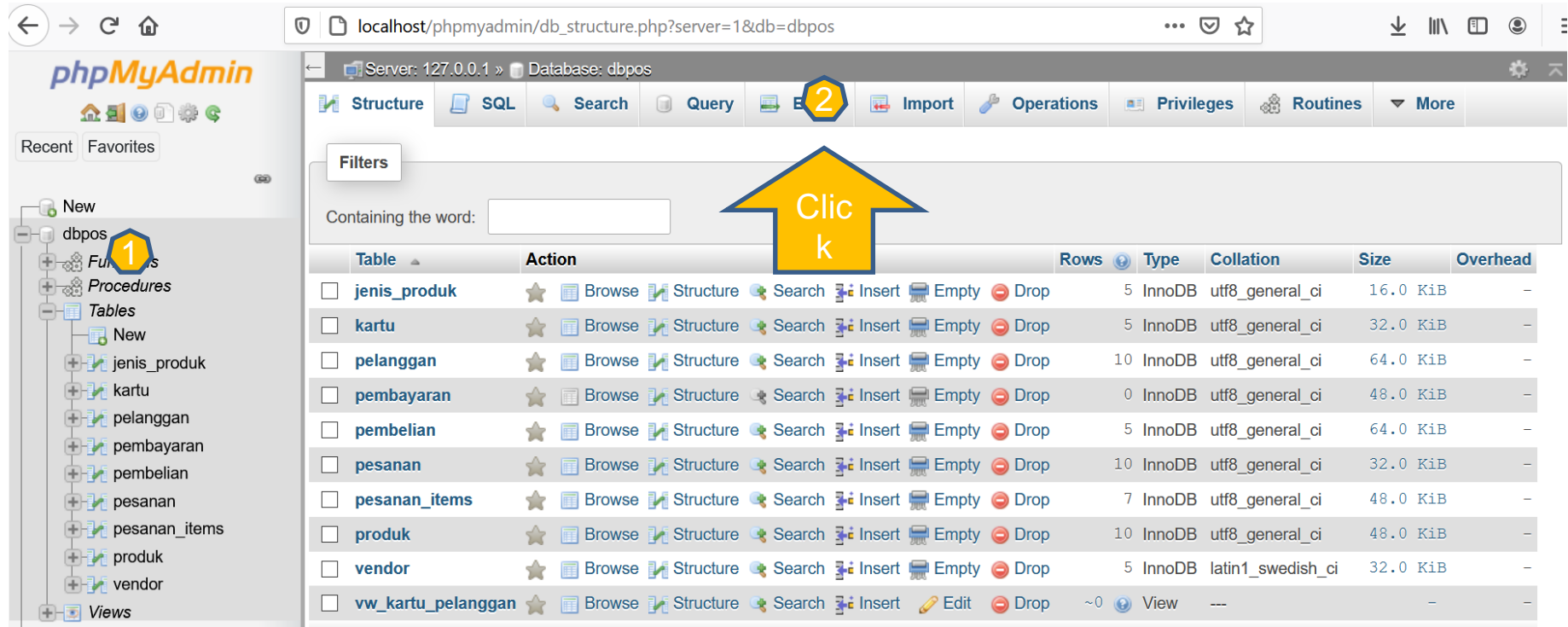


Welcome to XAMPP for Windows 7.4.15

You have successfully installed XAMPP on this system! Now you can start using Apache, MariaDB, PHP and other components. You can find more info in the [FAQs](#) section or check the [HOW-TO Guides](#) for getting started with PHP applications.

Backup & Restore :: phpMyAdmin (2)

- 1) pilih database yg akan dibackup, 2) click menu export



The screenshot shows the phpMyAdmin web interface. In the left sidebar, the 'dbpos' database is selected under the 'Tables' section, indicated by a yellow circle and the number '1'. In the top navigation bar, the 'Export' menu item is highlighted with a yellow circle and the number '2'. A large yellow arrow points to the 'Export' button with the text 'Click'.

Server: 127.0.0.1 » Database: dbpos

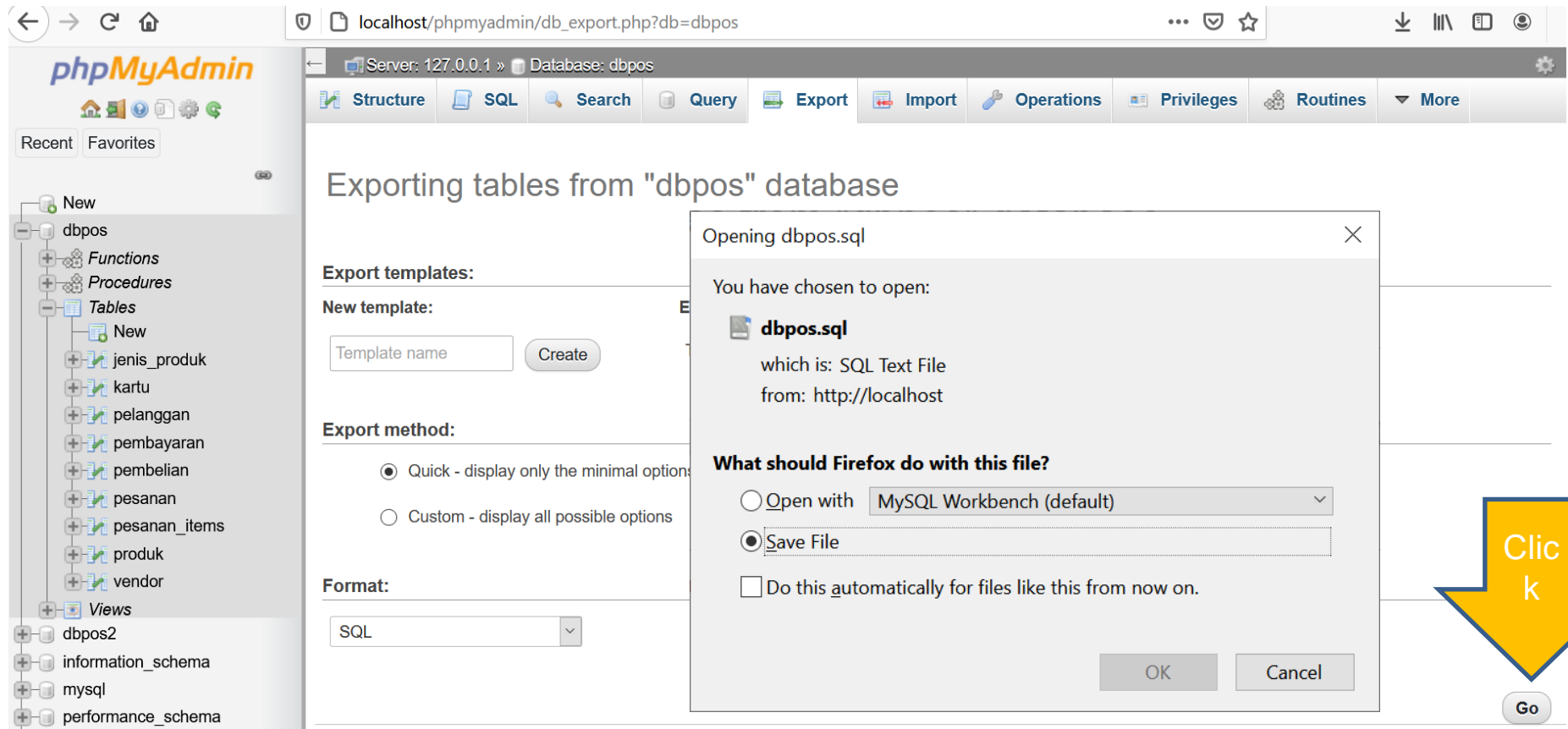
Structure SQL Search Query **Export** Import Operations Privileges Routines More

Filters

Containing the word:

Table	Action	Rows	Type	Collation	Size	Overhead
<input type="checkbox"/> jenis_produk	★ Browse Structure Search Insert Empty Drop	5	InnoDB	utf8_general_ci	16.0 KiB	-
<input type="checkbox"/> kartu	★ Browse Structure Search Insert Empty Drop	5	InnoDB	utf8_general_ci	32.0 KiB	-
<input type="checkbox"/> pelanggan	★ Browse Structure Search Insert Empty Drop	10	InnoDB	utf8_general_ci	64.0 KiB	-
<input type="checkbox"/> pembayaran	★ Browse Structure Search Insert Empty Drop	0	InnoDB	utf8_general_ci	48.0 KiB	-
<input type="checkbox"/> pembelian	★ Browse Structure Search Insert Empty Drop	5	InnoDB	utf8_general_ci	64.0 KiB	-
<input type="checkbox"/> pesanan	★ Browse Structure Search Insert Empty Drop	10	InnoDB	utf8_general_ci	32.0 KiB	-
<input type="checkbox"/> pesanan_items	★ Browse Structure Search Insert Empty Drop	7	InnoDB	utf8_general_ci	48.0 KiB	-
<input type="checkbox"/> produk	★ Browse Structure Search Insert Empty Drop	10	InnoDB	utf8_general_ci	48.0 KiB	-
<input type="checkbox"/> vendor	★ Browse Structure Search Insert Empty Drop	5	InnoDB	latin1_swedish_ci	32.0 KiB	-
<input type="checkbox"/> vw_kartu_pelanggan	★ Browse Structure Search Insert Edit Drop	~0	View	---	-	-

Backup & Restore :: phpMyAdmin (3)



The screenshot shows the phpMyAdmin interface in a web browser. The address bar indicates the URL is `localhost/phpmyadmin/db_export.php?db=dbpos`. The left sidebar shows the database structure, with 'dbpos' selected. The main panel displays the 'Exporting tables from "dbpos" database' screen. The 'Export templates' section has a 'New template' button. The 'Export method' section has two options: 'Quick - display only the minimal options' (selected) and 'Custom - display all possible options'. The 'Format' section has a dropdown menu set to 'SQL'. A modal dialog titled 'Opening dbpos.sql' is open, asking 'What should Firefox do with this file?'. The dialog shows 'dbpos.sql' which is a 'SQL Text File' from 'http://localhost'. The 'Save File' option is selected. A large yellow arrow points to the 'Click' button in the dialog.

Exporting tables from "dbpos" database

Export templates:

New template:

Template name Create

Export method:

☒ Quick - display only the minimal options

☐ Custom - display all possible options

Format:

SQL

Opening dbpos.sql

You have chosen to open:

dbpos.sql

which is: SQL Text File

from: http://localhost

What should Firefox do with this file?

☐ Open with MySQL Workbench (default)

☒ Save File

☐ Do this automatically for files like this from now on.

OK Cancel

Click

Backup & Restore :: phpMyAdmin (4)

- 1) buat database baru click new, 2) ketik nama databasenya, 3) create

The screenshot shows the phpMyAdmin web interface. The browser address bar indicates the URL is `localhost/phpmyadmin/server_databases.php?server=1`. The interface has a sidebar on the left with a 'New' button highlighted by a yellow hexagon with the number 1. The main area shows the 'Databases' tab. In the 'Create database' section, the database name 'dbpos3' is entered in the text field (marked with a yellow hexagon and the number 2), and the collation 'latin1_swedish_ci' is selected from the dropdown menu. The 'Create' button is marked with a yellow hexagon and the number 3. Below this, a table lists the existing databases on the server.

Database	Collation	Action
<input type="checkbox"/> dbpos	latin1_swedish_ci	Check privileges
<input type="checkbox"/> dbpos2	latin1_swedish_ci	Check privileges
<input type="checkbox"/> information_schema	utf8_general_ci	Check privileges
<input type="checkbox"/> mysql	latin1_swedish_ci	Check privileges
<input type="checkbox"/> performance_schema	utf8_general_ci	Check privileges
<input type="checkbox"/> phpmyadmin	utf8_bin	Check privileges
<input type="checkbox"/> test	latin1_swedish_ci	Check privileges

Total: 7

Backup & Restore :: phpMyAdmin (5)

- 1) pilih database target restore 2) export, 3) browse file sql hasil backup

The screenshot shows the phpMyAdmin interface for a local server. The left sidebar shows a list of databases, with 'dbpos3' selected (1). The main area shows the 'Import' tab (2) for the 'dbpos3' database. The 'File to import:' section has a 'Browse...' button (3). A 'File Upload' dialog is open, showing the 'Downloads' folder (3). The file 'dbpos' is selected (4). The 'Open' button is highlighted (5). A large yellow arrow points to the 'Go' button (6).

Tekan GO

✓ Import has been successfully finished, 59 queries executed. (dbpos.sql)

**TERIMA KASIH
ATAS SEGALA PERHATIAN
SEMOGA BERMANFAAT...**

