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Matkul : Keamanan Basis Data – Build Website Minggu ke 4

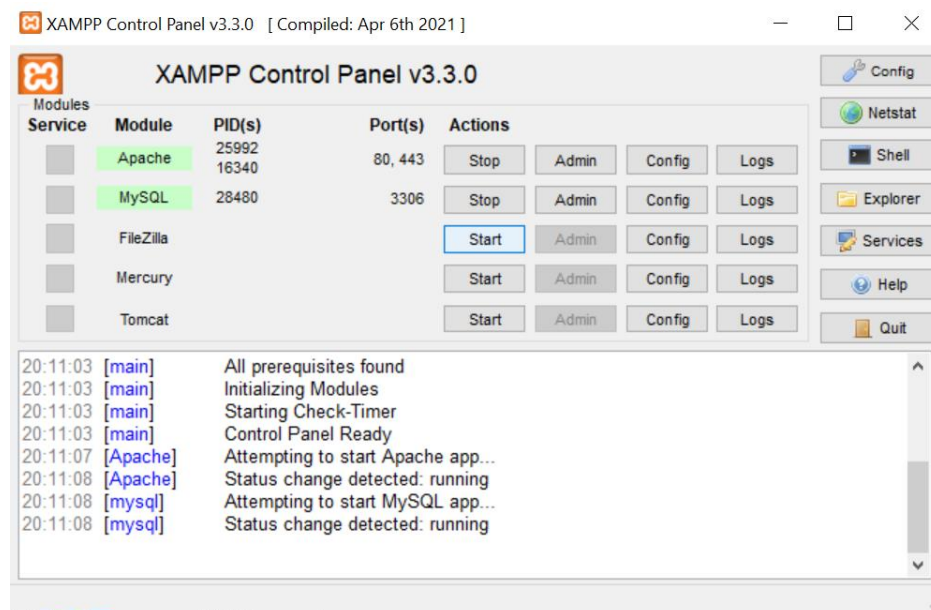
LAPORAN PRAKTIKUM WEEK 4

Tugas yang diberikan adalah :

1. Membuat website wordpress dengan databasenya (mysql)
2. Membuat website wordpress dengan database terpisah (3 website)
3. Jelaskan kegunaan antara union, select, wait dan -- .

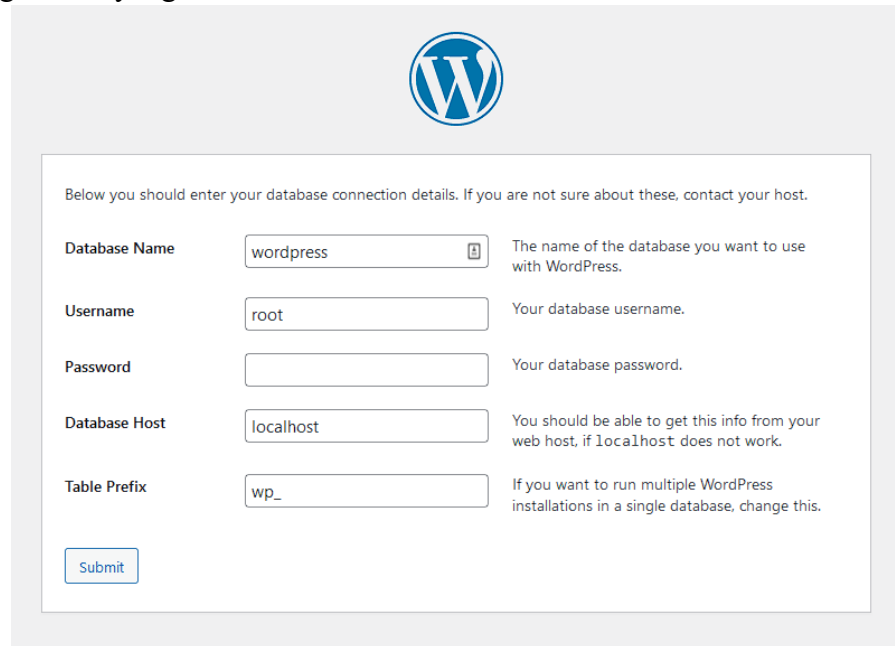
A. Membuat Website Wordpress dengan database Mysql

1. Download Aplikasi XAMPP lalu install seperti biasa lalu start pada Apache dan Mysql



2. Download Wordpress pada link : wordpress.org/download/. Lalu ekstrak dan copy file wordpress tadi ke folder C:/xampp/htdocs (tempat database web nanti)
3. Lalu instalasi wordpress melalui browser dengan url : localhost/wordpress
4. Jalankan instalasi seperti biasa dengan pilih Bahasa Inggris dan next
5. Selanjutnya buka tab baru di browser dan ketik url localhost/phpMyAdmin, Pada menu databases kita tambahkan baru dengan tombol Create lalu isi dengan nama **Wordpress**.

- Setelah create database Kembali lagi ke tab yang tadi, lalu isi form yang sesuai dengan data yang valid



Below you should enter your database connection details. If you are not sure about these, contact your host.

Database Name The name of the database you want to use with WordPress.

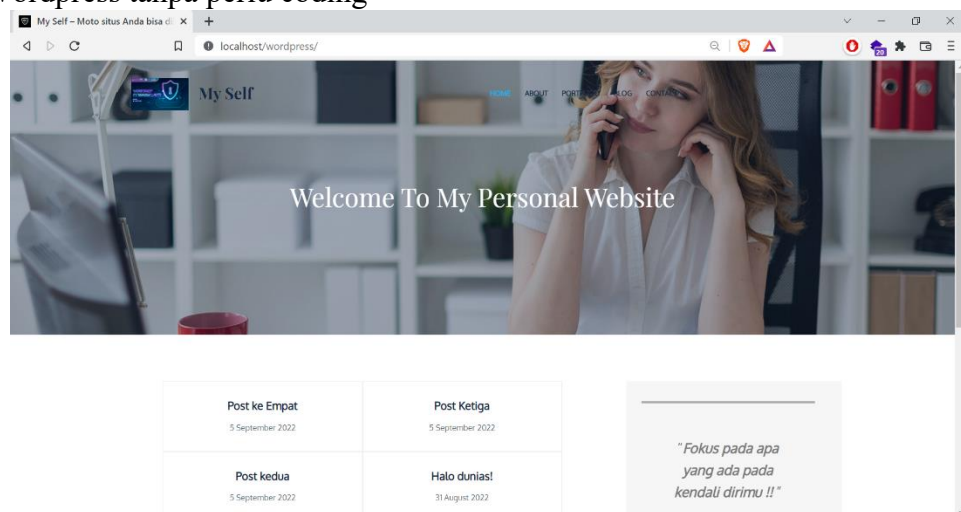
Username Your database username.

Password Your database password.

Database Host You should be able to get this info from your web host, if localhost does not work.

Table Prefix If you want to run multiple WordPress installations in a single database, change this.

- Lalu akan dialihkan ke halaman dashboard, dan sudah mulai bisa membuat website yang di inginkan.
- Berikut adalah contoh tampilan yang sudah diganti menggunakan Template Wordpress tanpa perlu coding



- Untuk website tersebut sebenarnya masih banyak lagi yang perlu untuk di perbaharui dan di edit supaya lebih responsive dan menarik.

B. Membuat Website 3 Wordpress terpisah dengan database Mysql

1. Siapkan aplikasi virtualbox atau vmware untuk menjalankan os virtual disini saya menggunakan Ubuntu Server, Buat terbagi 2 Mesin VM yaitu **Webserver** dan **Database Server**.
2. Setelah selesai install, pertama yang harus dilakukan adalah command *apt-get update* dan *apt-get upgrade* pada kedua machine

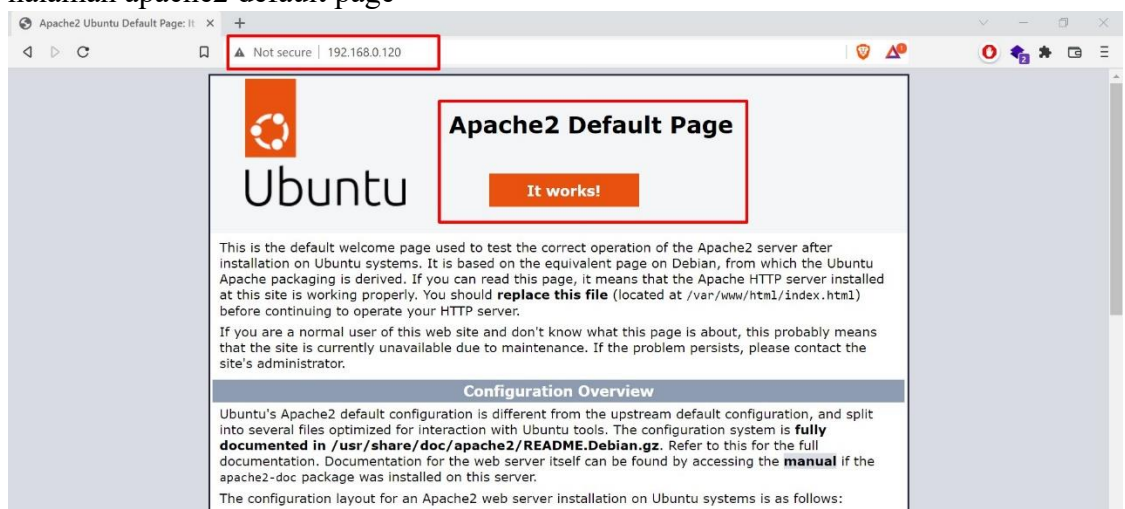
Step Untuk Machine Web Server

3. Jalankan Command *apt-get install apache2*, lalu pilih yes dan tunggu. Lalu untuk cek status ketik command *systemctl status apache2*

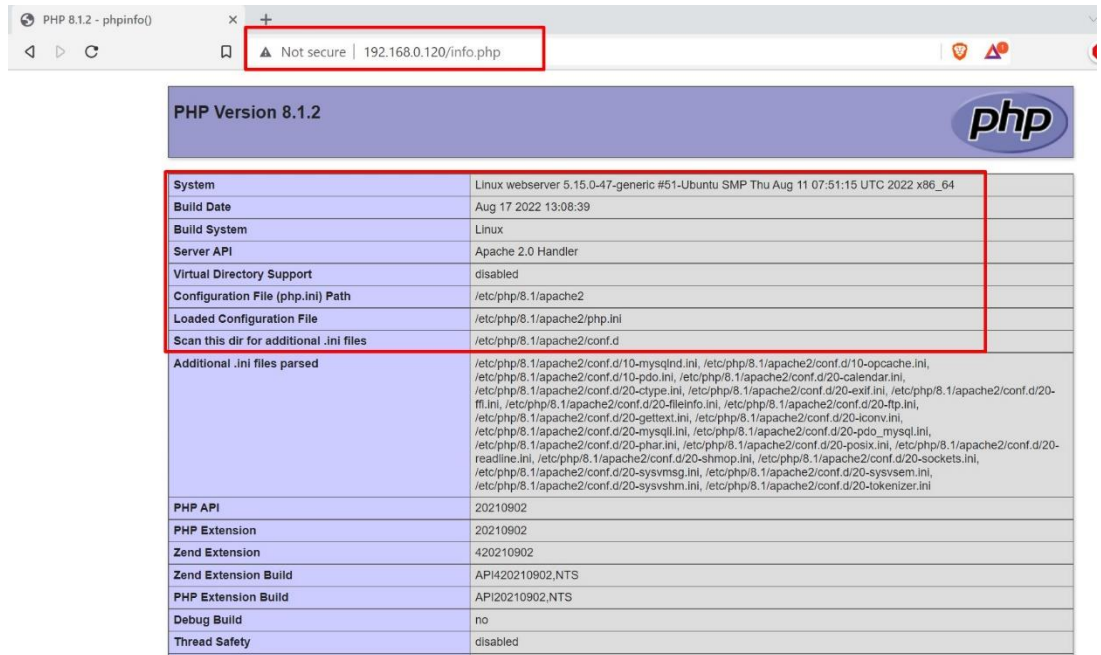
```
root@webserver:/etc/netplan# cd ~
root@webserver:~# systemctl status apache2
● apache2.service - The Apache HTTP Server
   Loaded: loaded (/lib/systemd/system/apache2.service; enabled; vendor preset: enabled)
   Active: active (running) since Thu 2022-09-15 09:11:14 UTC; 4h 20min ago
     Docs: https://httpd.apache.org/docs/2.4/
    Main PID: 1276 (apache2)
      Tasks: 11 (limit: 1030)
     Memory: 232.9M
        CPU: 44.689s
    CGroup: /system.slice/apache2.service
            └─1276 /usr/sbin/apache2 -k start
              └─1863 /usr/sbin/apache2 -k start
                └─1872 /usr/sbin/apache2 -k start
                  └─1934 /usr/sbin/apache2 -k start
                    └─1942 /usr/sbin/apache2 -k start
                      └─1947 /usr/sbin/apache2 -k start
                        └─1949 /usr/sbin/apache2 -k start
                          └─1950 /usr/sbin/apache2 -k start
                            └─1951 /usr/sbin/apache2 -k start
                              └─1952 /usr/sbin/apache2 -k start
                                └─2082 /usr/sbin/apache2 -k start

Sep 15 09:11:14 webserver systemd[1]: Starting The Apache HTTP Server...
Sep 15 09:11:14 webserver apachectl[1275]: AH00558: apache2: Could not reliably determine the server's fully qualified domain name, please add the 'ServerName' line to the configuration file to suppress this error message.
Sep 15 09:11:14 webserver systemd[1]: Started The Apache HTTP Server.
lines 1-24/24 (END)
```

4. Selanjutnya atur ip static pada vm dengan command *sudo nano /etc/netplan/00-installer-config.yaml*, disini saya menggunakan Ip 192.168.0.120 untuk webserver
5. Lalu coba akses browser ip yang tadi apabila berhasil maka akan muncul halaman apache2 default page



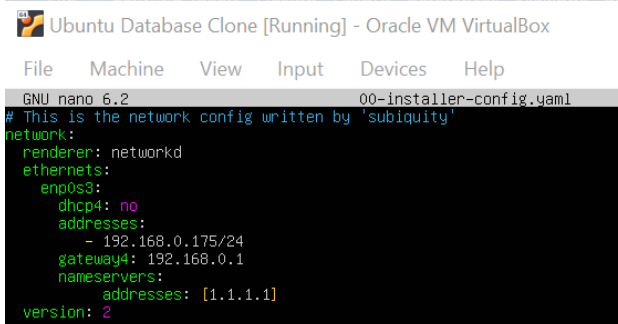
6. Selanjutnya install ***sudo apt-get install mysql-client***, dan pilih yes lalu tunggu
7. Install juga ***apt-get install php php-mysql*** dan tunggu proses instalasi
8. Setelah selesai buat sebuah file testing disini saya membuat file info.php kedalam folder /var/www/html dan ketik beberapa baris command line
9. Jika sudah selanjut nya buka di browser ip webserver tadi seperti dibawah, Apabila berhasil maka akan menampilkan php yang digunakan



PHP Version 8.1.2	
System	Linux webserver 5.15.0-47-generic #51-Ubuntu SMP Thu Aug 11 07:51:15 UTC 2022 x86_64
Build Date	Aug 17 2022 13:08:39
Build System	Linux
Server API	Apache 2.0 Handler
Virtual Directory Support	disabled
Configuration File (php.ini) Path	/etc/php/8.1/apache2
Loaded Configuration File	/etc/php/8.1/apache2/php.ini
Scan this dir for additional .ini files	/etc/php/8.1/apache2/conf.d
Additional .ini files parsed	/etc/php/8.1/apache2/conf.d/10-mysqld.ini, /etc/php/8.1/apache2/conf.d/10-opcache.ini, /etc/php/8.1/apache2/conf.d/10-pdo.ini, /etc/php/8.1/apache2/conf.d/20-calendar.ini, /etc/php/8.1/apache2/conf.d/20-ctype.ini, /etc/php/8.1/apache2/conf.d/20-exif.ini, /etc/php/8.1/apache2/conf.d/20-fileinfo.ini, /etc/php/8.1/apache2/conf.d/20-ftp.ini, /etc/php/8.1/apache2/conf.d/20-gettext.ini, /etc/php/8.1/apache2/conf.d/20-iconv.ini, /etc/php/8.1/apache2/conf.d/20-mysql.ini, /etc/php/8.1/apache2/conf.d/20-pdo_mysql.ini, /etc/php/8.1/apache2/conf.d/20-phar.ini, /etc/php/8.1/apache2/conf.d/20-posix.ini, /etc/php/8.1/apache2/conf.d/20-readline.ini, /etc/php/8.1/apache2/conf.d/20-shmop.ini, /etc/php/8.1/apache2/conf.d/20-sockets.ini, /etc/php/8.1/apache2/conf.d/20-sysvmsg.ini, /etc/php/8.1/apache2/conf.d/20-sysvsem.ini, /etc/php/8.1/apache2/conf.d/20-sysvshm.ini, /etc/php/8.1/apache2/conf.d/20-tokenizer.ini
PHP API	20210902
PHP Extension	20210902
Zend Extension	420210902
Zend Extension Build	API420210902.NTS
PHP Extension Build	API20210902.NTS
Debug Build	no
Thread Safety	disabled

Step Untuk Machine Database Server

10. Setelah update dan upgrade, kita atur ip static sama seperti webserver tadi, disini saya menggunakan ip statis 192.168.0.175



```

GNU nano 6.2 00-installer-config.yaml
# This is the network config written by 'subiquity'
network:
  renderer: networkd
  ethernets:
    enp0s3:
      dhcp4: no
      addresses:
        - 192.168.0.175/24
      gateway4: 192.168.0.1
      nameservers:
        addresses: [1.1.1.1]
      version: 2
  
```

11. Lalu install aplikasi yang akan dijalankan nanti, pertama ***sudo apt-get install mysql-server***
12. Lalu kita masuk kepada konfigurasi mysql nya agar bisa di akses
13. Ketik command ***sudo nano /etc/mysql/mysql.conf.d/mysqld.cnf***

14. Yang diganti pada config disini adalah pada bagian bind-address dari 127.0.0.1 menjadi IP SERVER DATABASE 192.168.0.175

```
# * Basic Settings
#
user            = mysql
# pid-file      = /var/run/mysqld/mysqld.pid
# socket       = /var/run/mysqld/mysqld.sock
# port         = 3306
# datadir      = /var/lib/mysql

# If MySQL is running as a replication slave, this should be
# changed. Ref https://dev.mysql.com/doc/refman/8.0/en/server-variables.html#svsr-tmpdir
# tmpdir       = /tmp
#
# Instead of skip-networking the default is now to listen only on
# localhost which is more compatible and is not less secure.
bind-address    = 192.168.0.175
mysqldx-bind-address = 127.0.0.1
#
# * Fine Tuning
```

15. Setelah diganti selanjutnya kita restart dengan command ***sudo systemctl restart mysql***
16. Langkah selanjutnya membuat user baru untuk dapat mengakses database lewat webserver seperti command dibawah ini

```
5 rows in set (0.00 sec)

mysql> CREATE USER 'glatinone'@'192.168.0.120' IDENTIFIED BY 'batam12345';
Query OK, 0 rows affected (0.01 sec)

mysql> GRANT ALL PRIVILEGES ON *.* TO 'glatinone'@'192.168.0.120';
ERROR 1064 (42000): You have an error in your SQL syntax; check the manual that corresponds to your MySQL server version for the right syntax to use near 'PRIVILEGES ON *.* TO 'glatinone'@'192.168.0.120'' at line 1
mysql> GRANT ALL PRIVILEGES ON *.* TO 'glatinone'@'192.168.0.120';
Query OK, 0 rows affected (0.00 sec)

mysql> FLUSH PRIVILEGES;
Query OK, 0 rows affected (0.01 sec)

mysql>
```

17. Selanjutnya Kembali konfigurasi webserver login mysql dengan command ***mysql -u glatinone -h 192.168.0.175 -p***

```
webserver@webserver:~$ mysql -u glatinone -h 192.168.0.175 -p
Enter password:
Welcome to the MySQL monitor. Commands end with ; or \g.
Your MySQL connection id is 13
Server version: 8.0.30-0ubuntu0.22.04.1 (Ubuntu)

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owners.

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

mysql>
```

18. Lalu cek informasi database yang telah dibuat pada mysql dengan command \s

```
mysql> mysql> \s
-----
mysql Ver 8.0.30-0ubuntu0.22.04.1 for Linux on x86_64 ((Ubuntu))

Connection id:          14
Current database:
Current user:           glatinone@192.168.0.120
SSL:                    Cipher in use is TLS_AES_256_GCM_SHA384
Current pager:          stdout
Using outfile:          ''
Using delimiter:        ;
Server version:         8.0.30-0ubuntu0.22.04.1 (Ubuntu)
Protocol version:       10
Connection:             192.168.0.175 via TCP/IP
Server characterset:    utf8mb4
Db      characterset:   utf8mb4
Client characterset:    utf8mb4
Conn.  characterset:    utf8mb4
TCP port:               3306
Binary data as:         Hexadecimal
Uptime:                 19 min 33 sec

Threads: 3  Questions: 23  Slow queries: 0  Opens: 186  Flush tables: 3  Open tables: 105  Queries per second avg: 0.019
-----
```

19. Selanjutnya kita membuat database wordpress pada database server. Masuk ke sql lagi dengan command mysql -u root -p

20. Lalu ikuti command seperti dibawah ini :

```
Ubuntu Database [Running] - Oracle VM VirtualBox
File  Machine  View  Input  Devices  Help

dbserver@dbserver:~$ sudo mysql -u root -p
[sudo] password for dbserver:
Enter password:
Welcome to the MySQL monitor.  Commands end with ; or \g.
Your MySQL connection id is 17
Server version: 8.0.30-0ubuntu0.22.04.1 (Ubuntu)

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owners.

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

mysql> CREATE DATABASE wordpress_db;
Query OK, 1 row affected (0.00 sec)

mysql> CREATE USER 'wp_user'@'localhost' IDENTIFIED BY 'password';
Query OK, 0 rows affected (0.01 sec)

mysql> GRANT ALL ON wordpress_db.* TO 'wp_user'@'localhost' IDENTIFIED BY 'password';
> ;
> exit
> ^c
mysql> GRANT ALL ON wordpress_db.* TO 'wp_user'@'localhost' IDENTIFIED BY 'password';
ERROR 1064 (42000): You have an error in your SQL syntax; check the manual that corresponds to your
MySQL server version for the right syntax to use near 'IDENTIFIED BY 'password'' at line 1
mysql> GRANT ALL ON wordpress_db.* TO 'wp_user'@'localhost';
Query OK, 0 rows affected (0.01 sec)

mysql>
```

21. Setelah ok semua ketik exit untuk keluar dari mysql

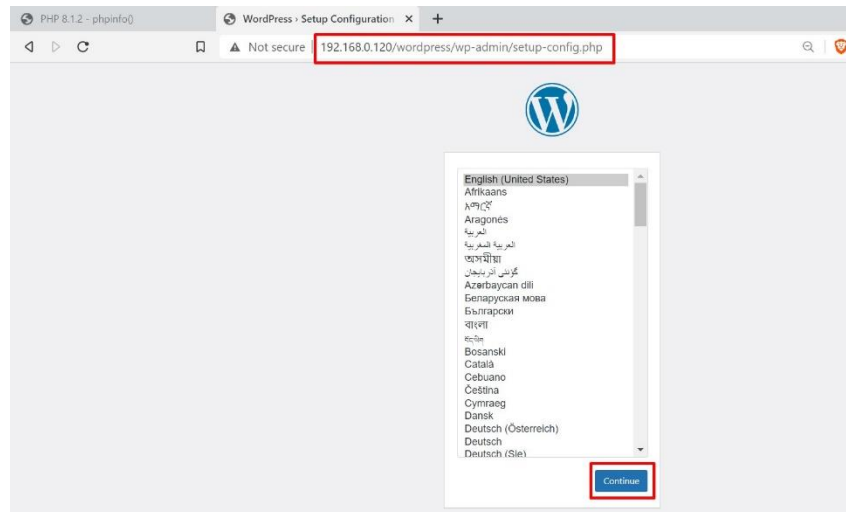
22. Download dan ekstrak terlebih dahulu file wordpress nya seperti dibawah ini

```
Ubuntu Webserver [Running] - Oracle VM VirtualBox
File  Machine  View  Input  Devices  Help

root@webserver:~# cd /tmp && wget https://wordpress.org/latest.tar.gz
--2022-09-14 10:21:17-- https://wordpress.org/latest.tar.gz
Resolving wordpress.org (wordpress.org)... 198.143.164.252
Connecting to wordpress.org (wordpress.org)|198.143.164.252|:443... connected.
HTTP request sent, awaiting response... 200 OK
Length: 21172479 (20M) [application/octet-stream]
Saving to: 'latest.tar.gz'

latest.tar.gz      43%[=====>]          8.85M  2.27MB/s  eta 5s
latest.tar.gz      54%[=====>]          11.02M  2.40MB/s  eta 5s
latest.tar.gz      62%[=====>]          12.63M  2.55MB/s  eta 4s
latest.tar.gz      67%[=====>]          13.57M  2.53MB/s  eta 4s
```


23. Selanjutnya kita buka browser dan ketikkan alamat ip webserver slash /wordpress



24. Continue, dan isi data sesuai dengan mysql yang di input tadi

Below you should enter your database connection details. If you are not sure about these, contact your host.

Database Name	<input type="text" value="wordpress_db"/>	The name of the database you want to use with WordPress.
Username	<input type="text" value="glatinone"/>	Your database username.
Password	<input type="text" value="password"/>	Your database password.
Database Host	<input type="text" value="192.168.0.175"/>	You should be able to get this info from your web host, if localhost does not work.
Table Prefix	<input type="text" value="wp_"/>	If you want to run multiple WordPress installations in a single database, change this.

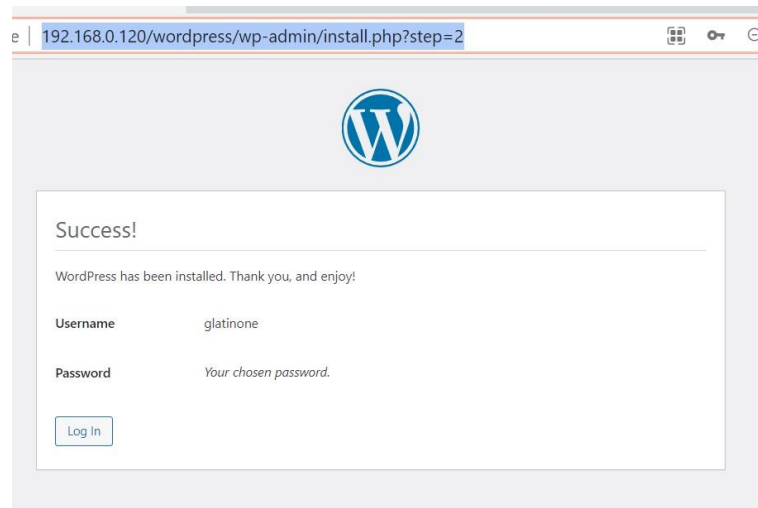
KREDENSIAL WORDPRESS PERTAMA

WordPress Setup Configuration

Not secure | 192.168.0.120/wordpress/wp-admin/setup-config.php?step=2

All right, sparky! You've made it through this part of the installation. WordPress can now communicate with your database. If you are ready, time now to...

25. Lalu submit dan isi data yang di minta maka penginstalan wordpress sudah berhasil dilakukan. Langkah selanjutnya yang dilakukan adalah ganti tema dengan template yang tersedia gratis.



26. Berikut adalah file config jika di lihat dari cli webserver

```

GNU nano 6.2 wp-config.php
<?php
/**
 * The base configuration for WordPress
 *
 * The wp-config.php creation script uses this file during the installation.
 * You don't have to use the web site, you can copy this file to "wp-config.php"
 * and fill in the values.
 *
 * This file contains the following configurations:
 *
 * * Database settings
 * * Secret keys
 * * Database table prefix
 * * ABSPATH
 *
 * @link https://wordpress.org/support/article/editing-wp-config-php/
 *
 * @package WordPress
 */

/** Database settings - You can get this info from your web host */
/** The name of the database for WordPress */
define( 'DB_NAME', 'wordpress_db' );

/** Database username */
define( 'DB_USER', 'glatinone' );

/** Database password */
define( 'DB_PASSWORD', 'batam12345' );

/** Database hostname */
define( 'DB_HOST', '192.168.0.175' );

```


27. Selanjutnya membuat website ke 2 dan ke 3 hampir mirip caranya, hanya mulai dari install databasewordpress dan cms nya saja.. untuk webserver dan database server yang digunakan tetap sama, hanya saja dibedakan penamaan nya

```

Ubuntu Database Clone [Running] - Oracle VM VirtualBox
File Machine View Input Devices Help

54 bytes from 192.168.0.20: icmp_seq=2 ttl=128 time=0.284 ms
64 bytes from 192.168.0.20: icmp_seq=3 ttl=128 time=0.448 ms
C
-- 192.168.0.20 ping statistics --
3 packets transmitted, 3 received, 0% packet loss, time 2044ms
rtt min/avg/max/mdev = 0.284/0.355/0.448/0.068 ms
observer@observer:~$ mysql -u root -p
Enter password:
ERROR 1698 (28000): Access denied for user 'root'@'localhost'
observer@observer:~$ sudo mysql -u root -p
(sudo) password for observer:
Enter password:
Welcome to the MySQL monitor.  Commands end with ; or \g.
Your MySQL connection id is 38
Server version: 8.0.30-0ubuntu22.04.1 (Ubuntu)

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owners.

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

mysql> CREATE DATABASE wordpress_dua;
Query OK, 1 row affected (0.00 sec)

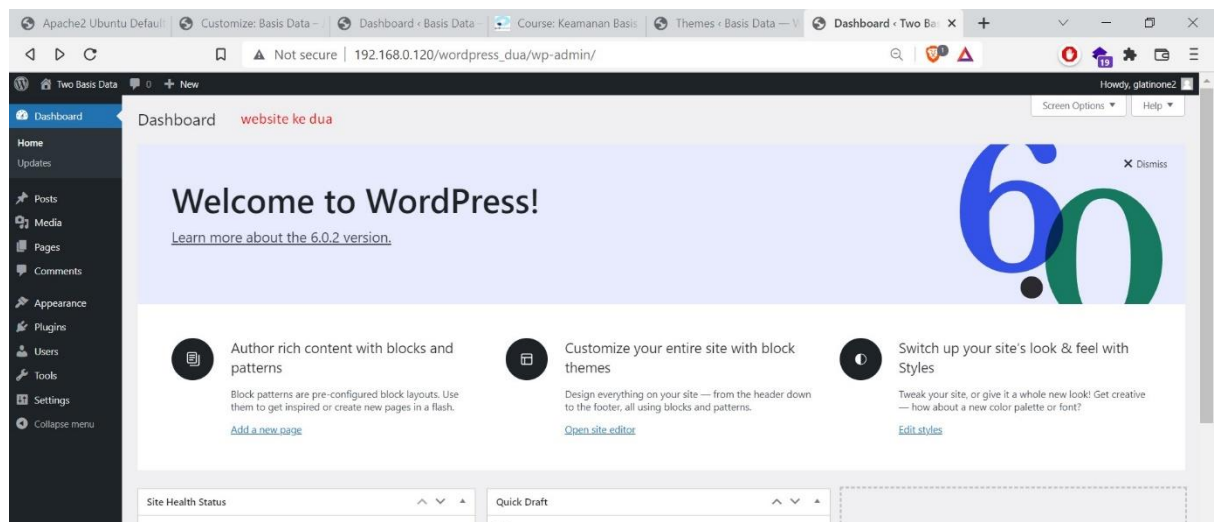
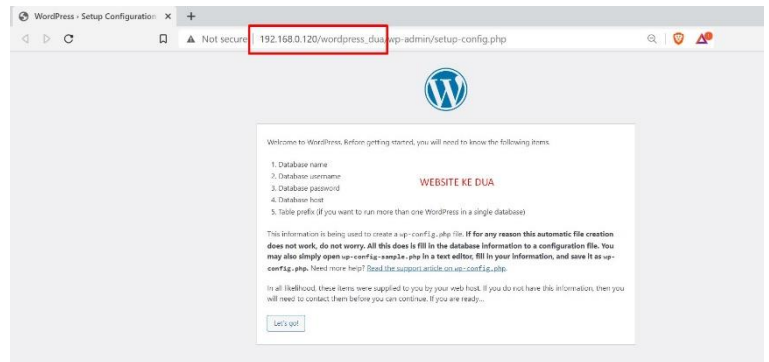
mysql> CREATE USER 'glatinone2'@'192.168.0.175' IDENTIFIED BY 'password';
Query OK, 0 rows affected (0.02 sec)

mysql> GRANT ALL ON wordpress_dua.* TO 'glatinone2'@'192.168.0.175';
Query OK, 0 rows affected (0.01 sec)

mysql> FLUSH PRIVILEGES;
Query OK, 0 rows affected (0.01 sec)

mysql> _

```



28.
29.

C. Fungsi dari Union, Select, Wait dan - -

1. Fungsi UNION pada SQL digunakan untuk menggabungkan dua tabel dalam bentuk baris baru ke bawah dimana field yang di-SELECT antara tabel satu dan lainnya adalah harus sama.

```

mysql> show databases;
+-----+
| Database |
+-----+
| information_schema |
| mysql |
| performance_schema |
| sys |
| wordpress_db |
+-----+
5 rows in set (0.00 sec)

mysql> select user,host from mysql.user
-> ,
+-----+-----+
| user | host |
+-----+-----+
| glatinone | 192.168.0.120 |
| debian-sys-maint | localhost |
| mysql.infoschema | localhost |
| mysql.session | localhost |
| mysql.sys | localhost |
| root | localhost |
| wp_user | localhost |
+-----+-----+
7 rows in set (0.00 sec)

mysql> SELECT user_login FROM wp_users
-> UNION
-> SELECT user_pass FROM wp_users;
+-----+
| user_login |
+-----+
| glatinone |
| $P$BnGLyLHOxx1roMBH.WHnsefXNkjDKy/ |
+-----+
2 rows in set (0.00 sec)

```

2. Fungsi dari SELECT, Perintah ini digunakan untuk menampilkan, mengambil maupun memilah informasi dari database atau data dari satu tabel serta beberapa tabel dalam relasi.

```

mysql> use wordpress_dua
Database changed
mysql> select * from wp_users;
+-----+-----+-----+-----+-----+-----+
| ID | user_login | user_pass | user_nicename | user_email | user_registered | user_activation_key | user_status | display_name |
+-----+-----+-----+-----+-----+-----+
| 1 | glatinone2 | $P$BCHxIh0bteESmHp7DKv.Dxp.qdvWj20 | glatinone2 | yeheskieltampubolon@gmail.com | 2022-09-15 10:44:30 | | 0 | glatinone2 |
+-----+-----+-----+-----+-----+-----+
1 row in set (0.00 sec)

mysql> ~

```

3. Fungsi dari WAIT/SLEEP , yaitu untuk memberi jeda waktu sesuai detik yang di input untuk memperlambat waktu pengiriman data kembali, seperti contoh dibawah

```
mysql> use wordpress_db
Reading table information for completion of table and column names
You can turn off this feature to get a quicker startup with -A

Database changed
mysql> select *, SLEEP(5) from wp_users;

+-----+-----+-----+-----+-----+-----+-----+
| ID | user_login | user_pass | user_registered | user_nicename | user_email | display_name |
+-----+-----+-----+-----+-----+-----+-----+
| 1 | glatinone | $P$BnGLyLH0xxIroMBH.WHnsefXNKjDKy/ | glatinone | yeheskieltampubolon@gmail.com | http://192.168.0.120/wordpress | 2022-09-14 11:18:20 | 0 | glatinone |
+-----+-----+-----+-----+-----+-----+-----+
1 row in set (5.00 sec)
```

4. Fungsi dari --, adalah untuk memberi comment pada command sql tadi

```
mysql>
mysql>
mysql>
mysql> select * from wordpress.wp_users; -- halo ini adalah untuk komentar
mysql> select * from wordpress.wp_users; -- halo ini adalah untuk komentar
mysql> select * from wordpress_db.wp_users; -- halo ini adalah untuk komentar
+-----+-----+-----+-----+-----+-----+-----+
| ID | user_login | user_pass | user_registered | user_nicename | user_email | display_name |
+-----+-----+-----+-----+-----+-----+-----+
| 1 | glatinone | $P$BnGLyLH0xxIroMBH.WHnsefXNKjDKy/ | glatinone | yeheskieltampubolon@gmail.com | http://192.168.0.120/wordpress | 2022-09-14 11:18:20 | 0 | glatinone |
+-----+-----+-----+-----+-----+-----+-----+
1 row in set (0.01 sec)

mysql> _
```

Demikian Laporan Praktikum saya apabila ada kesalahan mohon dimaafkan, Sekian Dan
Terimakasih