LAB_2

1.เข้าระบบด้วย User root

```
devuser@server:~$ sudo -i
[sudo] password for devuser:
Sorry, try again.
[sudo] password for devuser:
root@server:~# $
```

2. ใช้คำสั่ง adduser เพื่อทำอีก user แล้วกรอกรหัสผ่านกับ ข้อมูลส่วนตัวบางส่วน

แล้ว กด Y เพื่อตกลง

```
root@server:~# adduser rutchanont
Adding user `rutchanont' ...
Adding new group `rutchanont' (1001) ...
Adding new user `rutchanont' (1001) with group `rutchanont' ...
Creating home directory `/home/rutchanont' ...
Copying files from `/etc/skel' ...
New password:
Retype new password:
passwd: password updated successfully
Changing the user information for rutchanont
Enter the new value, or press ENTER for the default
        Full Name []: Rutchanont
        Room Number []:
        Work Phone []:
        Home Phone []:
        Other []:
Is the information correct? [Y/n] Y
root@server:~#
```

3.ตั้ง userใหม่ให้เป็น root โดยคำสั่ง usermod

```
root@server:~# usermod -aG sudo rutchanont
```

4. เข้า userใหม่ โดยใช้คำสั่ง ssh แล้ว พิมพ์ Yes เพื่อตกลง และ กรอกรหัสผ่านให้ถูกต้อง

```
root@server:~# usermod -aG sudo rutchanont
root@server:~# ssh rutchanont@10.211.55.5
The authenticity of host '10.211.55.5 (10.211.55.5)' can't be established.
ED25519 key fingerprint is SHA256:LHb8WQ/Wg4dnbSYYOGRpKd6iu1d/HW4ALgHjb66cWlM.
This key is not known by any other names
Are you sure you want to continue connecting (yes/no/[fingerprint])? yes
Warning: Permanently added '10.211.55.5' (ED25519) to the list of known hosts.
rutchanont@10.211.55.5's password:
Welcome to Ubuntu 22.04.3 LTS (GNU/Linux 5.15.0-89-generic aarch64)

 * Documentation:  https://help.ubuntu.com
 * Management:     https://landscape.canonical.com
 * Support:        https://ubuntu.com/advantage

  System information as of Wed Nov 29 08:55:35 AM UTC 2023

  System load:            0.0
  Usage of /:             8.1% of 61.66GB
  Memory usage:           12%
  Swap usage:             0%
  Processes:              114
  Users logged in:        1
  IPv4 address for enp0s5: 10.211.55.5
  IPv6 address for enp0s5: fdb2:2c26:f4e4:0:21c:42ff:fee2:3c57


Expanded Security Maintenance for Applications is not enabled.

39 updates can be applied immediately.
To see these additional updates run: apt list --upgradable

Enable ESM Apps to receive additional future security updates.
See https://ubuntu.com/esm or run: sudo pro status



The programs included with the Ubuntu system are free software;
the exact distribution terms for each program are described in the
individual files in /usr/share/doc/*/copyright.

Ubuntu comes with ABSOLUTELY NO WARRANTY, to the extent permitted by
applicable law.

To run a command as administrator (user "root"), use "sudo <command>".
See "man sudo_root" for details.

rutchanont@server:~$
```

5.เปิด Allow ให้กับ ssh

```
rutchanont@server:~$ sudo ufw allow OpenSSH
[sudo] password for rutchanont:
Rules updated
Rules updated (v6)
rutchanont@server:~$
```

6. enable SSH แล้วกด y และใช้คำสั่งเช็ค Status SSH

```
rutchanont@server:~$ sudo ufw enable
Command may disrupt existing ssh connections. Proceed with operation (y|n)? y
Firewall is active and enabled on system startup
rutchanont@server:~$ sudo ufw status
Status: active

To                         Action      From
--                         ------      ----
OpenSSH                    ALLOW       Anywhere
OpenSSH (v6)               ALLOW       Anywhere (v6)

rutchanont@server:~$
```
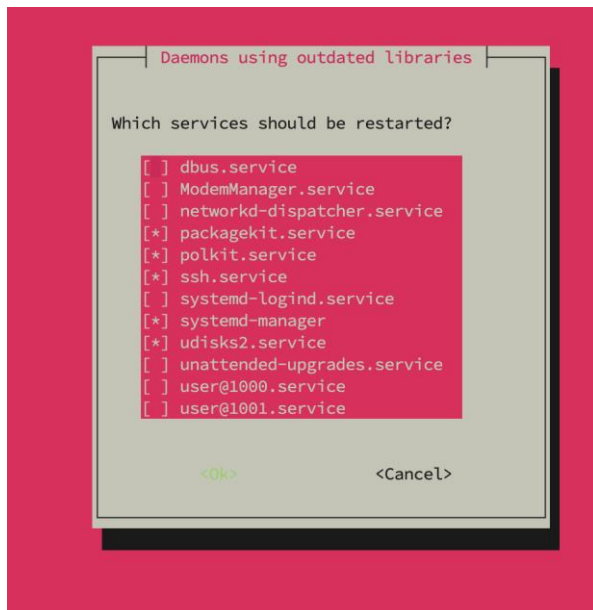
7.อัพเดทตัว ubuntu ด้วยคำสั่ง sudo apt update และ sudo apt upgrade

```
rutchanont@server:~$ sudo apt update
Hit:1 http://ports.ubuntu.com/ubuntu-ports jammy InRelease
Hit:2 http://ports.ubuntu.com/ubuntu-ports jammy-updates InRelease
Hit:3 http://ports.ubuntu.com/ubuntu-ports jammy-backports InRelease
Hit:4 http://ports.ubuntu.com/ubuntu-ports jammy-security InRelease
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
38 packages can be upgraded. Run 'apt list --upgradable' to see them.
rutchanont@server:~$
```

กด Y แล้วรอจนกว่าจะเสร็จ

```
rutchanont@server:~$ sudo apt upgrade
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
Calculating upgrade... Done
The following NEW packages will be installed:
  ubuntu-pro-client-l10n
The following packages will be upgraded:
  apparmor apt apt-utils bind9-dnsutils bind9-host bind9-libs cloud-init distro-info-data git git-man initramfs-tools
  initramfs-tools-bin initramfs-tools-core irqbalance kpartx libapparmor1 libapt-pkg6.0 libldap-2.5-0 libldap-common
  libnetplan0 libnss-systemd libpam-systemd libsgutils2-2 libsystemd0 libudev1 multipath-tools netplan.io
  python3-software-properties sg3-utils sg3-utils-udev software-properties-common sosreport systemd systemd-sysv
  systemd-timesyncd ubuntu-advantage-tools ubuntu-drivers-common udev
38 upgraded, 1 newly installed, 0 to remove and 0 not upgraded.
Need to get 18.3 MB of archives.
After this operation, 5,587 kB disk space will be freed.
Do you want to continue? [Y/n] Y
```

ถ้าเจอหน้าต่าง สีชมพูสามารถกด Enter เพื่อผ่านไปได้เลย

```
┤ Daemons using outdated libraries ├

 Which services should be restarted?

   [ ] dbus.service
   [ ] ModemManager.service
   [ ] networkd-dispatcher.service
   [*] packagekit.service
   [*] polkit.service
   [*] ssh.service
   [ ] systemd-logind.service
   [*] systemd-manager
   [*] udisks2.service
   [ ] unattended-upgrades.service
   [ ] user@1000.service
   [ ] user@1001.service

      <Ok>              <Cancel>
```

8. ติดตั้ง Apache2 กด Y แล้วรอจนกว่าจะเสร็จ

```
rutchanont@server:~$ sudo apt install apache2
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following additional packages will be installed:
  apache2-bin apache2-data apache2-utils bzip2 libapr1 libaprutil1 libaprutil1-dbd-sqlite3 libaprutil1-ldap liblua5.3-0
  mailcap mime-support ssl-cert
Suggested packages:
  apache2-doc apache2-suexec-pristine | apache2-suexec-custom www-browser bzip2-doc
The following NEW packages will be installed:
  apache2 apache2-bin apache2-data apache2-utils bzip2 libapr1 libaprutil1 libaprutil1-dbd-sqlite3 libaprutil1-ldap
  liblua5.3-0 mailcap mime-support ssl-cert
0 upgraded, 13 newly installed, 0 to remove and 0 not upgraded.
Need to get 2,085 kB of archives.
After this operation, 7,827 kB of additional disk space will be used.
Do you want to continue? [Y/n] Y
```

9.ตรวจแอพพลิเคชั่น

```
rutchanont@server:~$ sudo ufw app list
Available applications:
   Apache
   Apache Full
   Apache Secure
   OpenSSH
rutchanont@server:~$
```

10 Allow ให้กับตัวหนังสือที่มีชื่อขึ้นว่า "Apache" และตรวจสอบสถานะ

```
rutchanont@server:~$ sudo ufw allow in "Apache"
Rule added
Rule added (v6)
rutchanont@server:~$ sudo ufw status
Status: active

To                         Action      From
--                         ------      ----
OpenSSH                    ALLOW       Anywhere
Apache                     ALLOW       Anywhere
OpenSSH (v6)               ALLOW       Anywhere (v6)
Apache (v6)                ALLOW       Anywhere (v6)

rutchanont@server:~$
```

11. สามารถตรวจสอบได้ว่า Apache ทำงานหรือไม่โดยการพิมพ์ IP ของเครื่องที่ใช้หลังจากเปิดใช้งานแล้ว

12. ขั้นตอนและการติดตั้ง MySQL

```
rutchanont@server:~$ sudo apt install mysql-server
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following additional packages will be installed:
  libcgi-fast-perl libcgi-pm-perl libclone-perl libencode-locale-perl libevent-pthreads-2.1-7 libfcgi-bin libfcgi-perl
  libfcgi0ldbl libhtml-parser-perl libhtml-tagset-perl libhtml-template-perl libhttp-date-perl libhttp-message-perl
  libio-html-perl liblwp-mediatypes-perl libmecab2 libprotobuf-lite23 libtimedate-perl liburi-perl mecab-ipadic
  mecab-ipadic-utf8 mecab-utils mysql-client-8.0 mysql-client-core-8.0 mysql-common mysql-server-8.0 mysql-server-core-8.0
Suggested packages:
  libdata-dump-perl libipc-sharedcache-perl libbusiness-isbn-perl libwww-perl mailx tinyca
The following NEW packages will be installed:
  libcgi-fast-perl libcgi-pm-perl libclone-perl libencode-locale-perl libevent-pthreads-2.1-7 libfcgi-bin libfcgi-perl
  libfcgi0ldbl libhtml-parser-perl libhtml-tagset-perl libhtml-template-perl libhttp-date-perl libhttp-message-perl
  libio-html-perl liblwp-mediatypes-perl libmecab2 libprotobuf-lite23 libtimedate-perl liburi-perl mecab-ipadic
  mecab-ipadic-utf8 mecab-utils mysql-client-8.0 mysql-client-core-8.0 mysql-common mysql-server mysql-server-8.0
  mysql-server-core-8.0
0 upgraded, 28 newly installed, 0 to remove and 0 not upgraded.
Need to get 28.9 MB of archives.
After this operation, 238 MB of additional disk space will be used.
Do you want to continue? [Y/n] Y
```

```
rutchanont@server:~$ sudo mysql
Welcome to the MySQL monitor.  Commands end with ; or \g.
Your MySQL connection id is 8
Server version: 8.0.35-0ubuntu0.22.04.1 (Ubuntu)

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owners.

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

mysql>
```

เปลี่ยนรหัสผ่านเป็นตามที่ต้องการ

```
mysql> ALTER USER 'root'@'localhost' IDENTIFIED WITH mysql_native_password BY 'P@ssw0rd@2023';
mysql> exit
Bye
rutchanont@server:~$
```

ติดตั้ง mysql secure กด Y

```
rutchanont@server:~$ sudo mysql_secure_installation

Securing the MySQL server deployment.

Enter password for user root:

VALIDATE PASSWORD COMPONENT can be used to test passwords
and improve security. It checks the strength of password
and allows the users to set only those passwords which are
secure enough. Would you like to setup VALIDATE PASSWORD component?

Press y|Y for Yes, any other key for No: y
```

พิมพ์ เลข1

```
rutchanont@server:~$ sudo mysql_secure_installation

Securing the MySQL server deployment.

Enter password for user root:

VALIDATE PASSWORD COMPONENT can be used to test passwords
and improve security. It checks the strength of password
and allows the users to set only those passwords which are
secure enough. Would you like to setup VALIDATE PASSWORD component?

Press y|Y for Yes, any other key for No: y
```

กดenter เพื่อ Skip

```
 Using existing password for root.

 Estimated strength of the password: 100
 Change the password for root ? ((Press y|Y for Yes, any other key for No) :

  ... skipping.
```

กด Y

```
By default, a MySQL installation has an anonymous user,
allowing anyone to log into MySQL without having to have
a user account created for them. This is intended only for
testing, and to make the installation go a bit smoother.
You should remove them before moving into a production
environment.

Remove anonymous users? (Press y|Y for Yes, any other key for No) : y
Success.
```

```
Normally, root should only be allowed to connect from
'localhost'. This ensures that someone cannot guess at
the root password from the network.

Disallow root login remotely? (Press y|Y for Yes, any other key for No) : y
Success.

By default, MySQL comes with a database named 'test' that
anyone can access. This is also intended only for testing,
and should be removed before moving into a production
environment.


Remove test database and access to it? (Press y|Y for Yes, any other key for No) : y
 - Dropping test database...
Success.

 - Removing privileges on test database...
Success.

Reloading the privilege tables will ensure that all changes
made so far will take effect immediately.

Reload privilege tables now? (Press y|Y for Yes, any other key for No) : y
Success.

All done!
rutchanont@server:~$
```

เข้า Mysql อีกรอบโดยการ พิมพ์ sudo mysql -u root -p แล้วกรอกรหัส

```
rutchanont@server:~$ sudo mysql -u root -p
Enter password:
Welcome to the MySQL monitor.  Commands end with ; or \g.
Your MySQL connection id is 12
Server version: 8.0.35-0ubuntu0.22.04.1 (Ubuntu)

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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>
```

ออกจาก Mysql

```
mysql> exit
Bye
rutchanont@server:~$
```

13. ขั้นตอนการติดตั้ง PHP

```
rutchanont@server:~$ sudo apt install php libapache2-mod-php php-mysql
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following additional packages will be installed:
  libapache2-mod-php8.1 php-common php8.1 php8.1-cli php8.1-common php8.1-mysql php8.1-opcache php8.1-readline
Suggested packages:
  php-pear
The following NEW packages will be installed:
  libapache2-mod-php libapache2-mod-php8.1 php php-common php-mysql php8.1 php8.1-cli php8.1-common php8.1-mysql
  php8.1-opcache php8.1-readline
0 upgraded, 11 newly installed, 0 to remove and 0 not upgraded.
Need to get 5,338 kB of archives.
After this operation, 22.4 MB of additional disk space will be used.
Do you want to continue? [Y/n] Y
```

ตรวจ Version php

```
rutchanont@server:~$ php -v
PHP 8.1.2-1ubuntu2.14 (cli) (built: Aug 18 2023 11:41:11) (NTS)
Copyright (c) The PHP Group
Zend Engine v4.1.2, Copyright (c) Zend Technologies
    with Zend OPcache v8.1.2-1ubuntu2.14, Copyright (c), by Zend Technologies
rutchanont@server:~$
```

สร้างไฟล์ที่ชื่อ lab2

```
rutchanont@server:~$ sudo mkdir /var/www/lab2
rutchanont@server:~$ cd /var/www/
rutchanont@server:/var/www$ ls
html  lab2
rutchanont@server:/var/www$
```

เปลี่ยน Owner ของ ไดเร็กทอรี่ ให้เป็นของ User

```
rutchanont@server:/var/www$ sudo chown -R $USER:$USER /var/www/lab2
```

Config ไดเร็กทอรี่ lab2

```
rutchanont@server:/var/www$ sudo nano /etc/apache2/sites-available/lab2.conf
```

กด Control+X กด Y แล้วกด Enter เพื่อ Save

```
  GNU nano 6.2                                    /etc/apache
<VirtualHost *:80>
    ServerName lab2
    ServerAlias www.lab2.com
    ServerAdmin webmaster@localhost
    DocumentRoot /var/www/lab2
    ErrorLog ${APACHE_LOG_DIR}/error.log
    CustomLog ${APACHE_LOG_DIR}/access.log combined
</VirtualHost>
```

เปิด ปิด Domain และทดสอบ config

```
rutchanont@server:/var/www$ sudo a2ensite lab2
Enabling site lab2.
To activate the new configuration, you need to run:
  systemctl reload apache2
```

```
rutchanont@server:/var/www$ sudo a2dissite 000-default
Site 000-default disabled.
To activate the new configuration, you need to run:
  systemctl reload apache2
```

```
rutchanont@server:/var/www$ sudo apache2ctl configtest
AH00558: apache2: Could not reliably determine the server's fully qualified domain name, using 127.0.1.1. Set the 'ServerNam
e' directive globally to suppress this message
```

สร้างไฟล์ HTML และ ปรับแต่งไฟล์

```
rutchanont@server:/var/www$ nano /var/www/lab2/index.html
```

```html
<html>
  <head>
    <title>Lab2  website</title>
  </head>
  <body>
    <h1>ELLO :D</h1>

    <p>This is the landing page of <strong>LAB_2</strong>.</p>
  </body>
</html>
```

กด Control + X กด Y และกด Enter เพื่อออก

```
rutchanont@server:/var/www$ sudo systemctl reload apache2
```

Reload Apache

← → C   ⚠ Not Secure | 10.211.55.5

ELLO :D

This is the landing page of **LAB_2**.
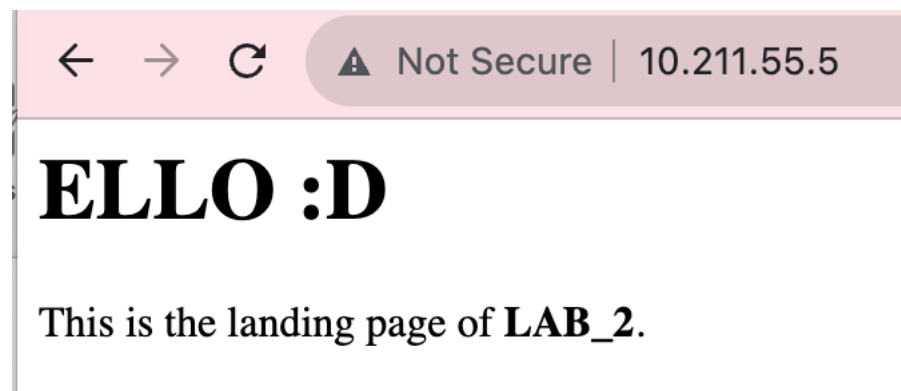
สร้างไฟล์ PHP แล้วเขียนโค๊ด

```
rutchanont@server:/var/www$ nano /var/www/lab2/index.php
<?php
phpinfo();
```

14.ทดสอบการย้ายไฟล์โชว์ขึ้นหน้าหลักว่าจะให้อันโชว์ไหนก่อนเป็นอย่างแรก

```
rutchanont@server:/var/www$ sudo nano /etc/apache2/mods-enabled/dir.conf
```

เพิ่มไฟล์ index.php ไปข้างหน้า

```
<IfModule mod_dir.c>
        DirectoryIndex index.php index.html index.cgi index.pl index.php index.xhtml index.htm
</IfModule>
```

Reload Apache

```
rutchanont@server:/var/www$ sudo systemctl reload apache2
```

ผลลัพธ์

PHP Version 8.1.2-1ubuntu2.14

System	Linux server 5.15.0-89-generic #99-Ubuntu SMP Mon Oct 30 23:43:36 UTC 2023 aarch64
Build Date	Aug 18 2023 11:41:11
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-mysqlnd.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-ffi.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-mysqli.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
Zend Signal Handling	enabled
Zend Memory Manager	enabled
Zend Multibyte Support	disabled
IPv6 Support	enabled
DTrace Support	disabled
Registered PHP Streams	https, ftps, compress.zlib, php, file, glob, data, http, ftp, phar
Registered Stream Socket Transports	tcp, udp, unix, udg, ssl, tls, tlsv1.0, tlsv1.1, tlsv1.2, tlsv1.3
Registered Stream Filters	zlib.*, string.rot13, string.toupper, string.tolower, convert.*, consumed, dechunk, convert.iconv.*

This program makes use of the Zend Scripting Language Engine:
Zend Engine v4.1.2, Copyright (c) Zend Technologies
    with Zend OPcache v8.1.2-1ubuntu2.14, Copyright (c), by Zend Technologies

zend engine

Configuration

apache2handler

Apache Version	Apache/2.4.52 (Ubuntu)
Apache API Version	20120211
Server Administrator	webmaster@localhost
Hostname:Port	lab2:0
User/Group	www-data(33)/33
Max Requests	Per Child: 0 - Keep Alive: on - Max Per Connection: 100
Timeouts	Connection: 300 - Keep-Alive: 5
Virtual Server	Yes
Server Root	/etc/apache2
Loaded Modules	core mod_so mod_watchdog http_core mod_log_config mod_logio mod_version mod_unixd mod_access_compat mod_alias mod_auth_basic mod_authn_core mod_authn_file mod_authz_core mod_authz_host mod_authz_user mod_autoindex mod_deflate mod_dir mod_env mod_filter mod_mime prefork mod_negotiation mod_php mod_reqtimeout mod_setenvif mod_status

Directive	Local Value	Master Value

15.ทดสอบการเชื่อมต่อ Database จาก PHP

เข้าสู่ Mysql โดยคำสั่ง sudo mysql -u root -p แล้ว กรอกรหัสผ่าน

```
rutchanont@server:~$ sudo mysql -u root -p
Enter password:
Welcome to the MySQL monitor.  Commands end with ; or \g.
Your MySQL connection id is 16
Server version: 8.0.35-0ubuntu0.22.04.1 (Ubuntu)

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owners.

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

mysql>
```

สร้าง Database

```
mysql> CREATE DATABASE lab2_database;
Query OK, 1 row affected (0.01 sec)

mysql>
```

สร้าง userใหม่ สำหรับ Database นี้

```
mysql> CREATE USER 'fu'@'%' IDENTIFIED BY 'P@ssw0rd';
Query OK, 0 rows affected (0.00 sec)

mysql>
```

สร้างสถานะให้ user ใหม่สามารถทำทุกอย่างใน database นี้ได้

```
mysql> GRANT ALL ON lab2_database.* TO 'fu'@'%';
Query OK, 0 rows affected (0.00 sec)

mysql>
```

ออกจาก Mysql แล้วเข้า userใหม่

```
mysql> exit
Bye
rutchanont@server:~$ mysql -u fu -p
Enter password:
Welcome to the MySQL monitor.  Commands end with ; or \g.
Your MySQL connection id is 17
Server version: 8.0.35-0ubuntu0.22.04.1 (Ubuntu)

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owners.

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

mysql>
```

เช็ค Databse

```
mysql> SHOW DATABASES;
+--------------------+
| Database           |
+--------------------+
| information_schema |
| lab2_database      |
| performance_schema |
+--------------------+
3 rows in set (0.02 sec)

mysql>
```

สร้างตาราง Database

```
mysql> CREATE TABLE lab2_database . todo_list(
    -> item_id INT AUTO_INCREMENT,
    -> content VARCHAR(255),
    -> PRIMARY KEY(item_id)
    -> );
Query OK, 0 rows affected (0.01 sec)
```

ใส่ค่าลงไปใน Database

```
mysql> INSERT INTO lab2_database.todo_list (content) VALUES ("My first important item");
Query OK, 1 row affected (0.01 sec)
```

ตรวจเช็คไฟล์ Database

```
mysql> SELECT*FROM lab2_database . todo_list;
+---------+-------------------------+
| item_id | content                 |
+---------+-------------------------+
|       1 | My first important item |
+---------+-------------------------+
1 row in set (0.00 sec)

mysql>
```

หลังจากนั้นลองเพิ่มข้อมูลลงไปใน database แล้วตรวจเช็คดู

```
mysql> INSERT INTO lab2_database.todo_list (content) VALUES ("My second important item");
Query OK, 1 row affected (0.01 sec)

mysql> INSERT INTO lab2_database.todo_list (content) VALUES ("My third important item");
Query OK, 1 row affected (0.01 sec)

mysql> INSERT INTO lab2_database.todo_list (content) VALUES ("My four important item");
Query OK, 1 row affected (0.00 sec)

mysql> INSERT INTO lab2_database.todo_list (content) VALUES ("My five important item");
Query OK, 1 row affected (0.00 sec)

mysql> INSERT INTO lab2_database.todo_list (content) VALUES ("And this one more thing");
Query OK, 1 row affected (0.00 sec)

mysql> SELECT*FROM lab2_database . todo_list;
+---------+--------------------------+
| item_id | content                  |
+---------+--------------------------+
|       1 | My first important item  |
|       2 | My second important item |
|       3 | My third important item  |
|       4 | My four important item   |
|       5 | My five important item   |
|       6 | And this one more thing  |
+---------+--------------------------+
6 rows in set (0.00 sec)

mysql>
```

ออกจาก Mysql

```
mysql> exit
Bye
rutchanont@server:~$
```

Nano เพื่อสร้างไฟล์ todo_list.php

```
rutchanont@server:~$ nano /var/www/lab2/todo_list.php
```

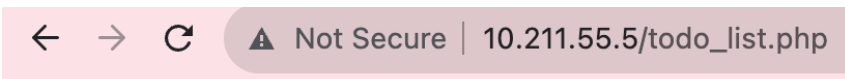เชื่อมต่อ Mysql ด้วย Php ในไฟล์ Nano หลังจากนัน Save แล้วออก

```php
<?php
$user = "fu";
$password = "P@ssw0rd";
$database = "lab2_database";
$table = "todo_list";

try {
  $db = new PDO("mysql:host=localhost;dbname=$database", $user, $password);
  echo "<h2>TODO</h2><ol>";
  foreach($db->query("SELECT content FROM $table") as $row) {
    echo "<li>" . $row['content'] . "</li>";
  }
  echo "</ol>";
} catch (PDOException $e) {
    print "Error!: " . $e->getMessage() . "<br/>";
    die();
}
```

ผลลัพธ์

Not Secure | 10.211.55.5/todo_list.php

TODO

1. My first important item
2. My second important item
3. My third important item
4. My four important item
5. My five important item
6. And this one more thing