

CHAPTER V

IMPLEMENTATION AND TESTING

5.1 Implementation

Firstly, I setup Ubuntu 10.10 Operating System. Then, I setup apache as the web-server and mysql as the sql-server. Mysql is used by gammu to save its database. Finally, I setup gammu as the daemon application to read and write to modem device.

5.1.1 Install Web-server

1) Install Apache

```
#sudo apt-get install apache2
```

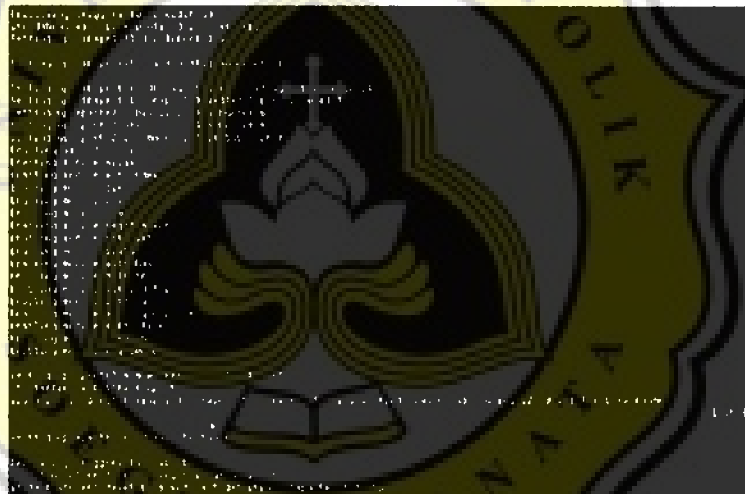
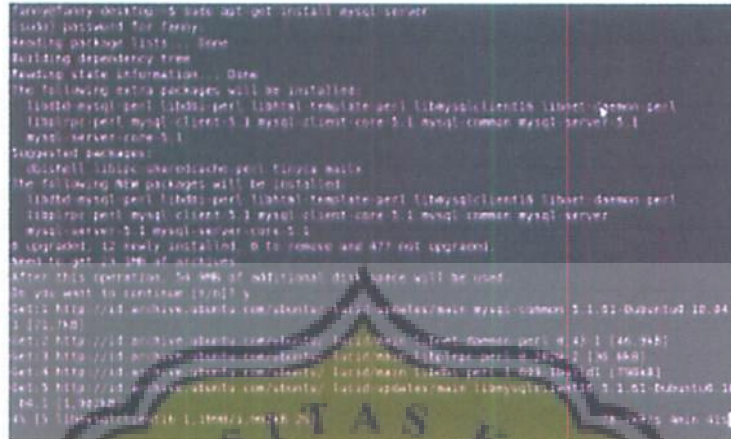


Figure 5.1.1.1 Installation Apache

2) Install MySql

```
#sudo apt-get install mysql-server
```



```
ter@terracotta:~$ sudo apt-get install mysql-server
[sudo] password for terracotta:
Reading package lists... Done
Building dependency tree
Reading state information... Done
The following extra packages will be installed:
  libaio1 mysql-perl libaio-perl libaio1-transtate-perl libmysqld-dev libperl-core-perl
  libperl-perl mysql-client-5.1 mysql-client-core-5.1 mysql-common mysql-server-5.1
  mysql-server-core-5.1
Suggested packages:
  libaio-dev libaio-transtate-perl libaio-transtate-perl
The following NEW packages will be installed:
  libaio1 libaio-perl libaio1-transtate-perl libmysqld-dev libperl-core-perl
  libperl-perl mysql-client-5.1 mysql-client-core-5.1 mysql-common mysql-server
  mysql-server-core-5.1 mysql-server-5.1
0 upgraded, 12 newly installed, 0 to remove and 477 not upgraded.
Need to get 44.4 MB of archives.
After this operation, 54 MB of additional disk space will be used.
Do you want to continue [Y/n] y
Get: 1 http://archive.ubuntu.com/ubuntu/ precise/main mysql-common 5.1.01-0ubuntu10.24
 [10.2 kB]
Get: 2 http://archive.ubuntu.com/ubuntu/ precise/main libaio1 0.3.103-1 [46.7 kB]
Get: 3 http://archive.ubuntu.com/ubuntu/ precise/main libaio-perl 0.3.103-1 [46.8 kB]
Get: 4 http://archive.ubuntu.com/ubuntu/ precise/main libaio1-transtate-perl 0.3.103-1 [170 kB]
Get: 5 http://archive.ubuntu.com/ubuntu/ precise-updates/main libmysqld-dev 5.1.01-0ubuntu10
 [44.3 MB]
Get: 6 http://archive.ubuntu.com/ubuntu/ precise/main mysql-client-core-5.1 5.1.01-0ubun
 [1.3 kB]
Get: 7 http://archive.ubuntu.com/ubuntu/ precise/main mysql-client-5.1 5.1.01-0ubun
 [1.3 kB]
Get: 8 http://archive.ubuntu.com/ubuntu/ precise/main mysql-server-core-5.1 5.1.01-0ubun
 [1.3 kB]
Get: 9 http://archive.ubuntu.com/ubuntu/ precise/main mysql-server-5.1 5.1.01-0ubun
 [1.3 kB]
Get: 10 http://archive.ubuntu.com/ubuntu/ precise/main mysql-server 5.1.01-0ubuntu10.24
 [1.3 kB]
Fetched 44.4 MB in 1min 3s (283 kB/s)
debconf: delaying package configuration, since apt-utils is not installed
```

Figure 5.1.1.2 Install MySQL Server

After installing MySQL, password configurations window will show up. Fill the password and then type the configuration password once again.

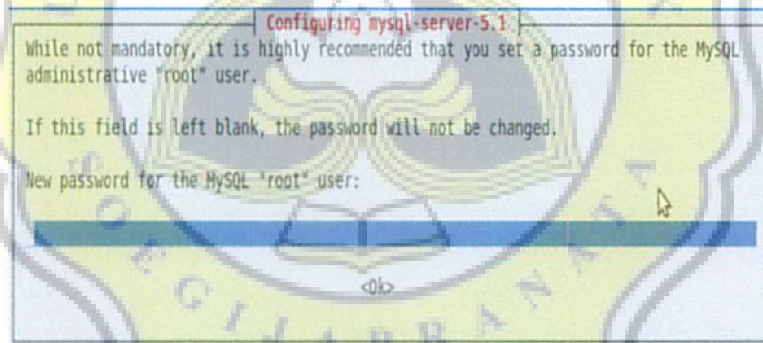


Figure 5.1.1.3 configuring-mysql-server

3) Install Php

```
#sudo apt-get php5 libapache2-mod-php5
```

After this installation **restart Apache** [`sudo /etc /init.d/apache2 restart`] don't write brackets. Now make a **phpinfo.php** file and save that in `/var/www` to do this use [`sudo gedit /var/www/phpinfo.php`] write a code in this file :

```
<?php  
phpinfo();  
?>
```

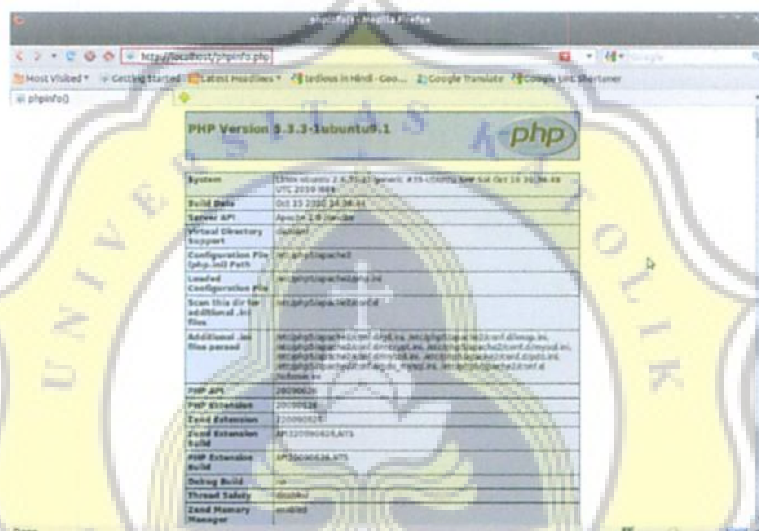


Figure 5.1.1.4 Installation Php

4) Install PhpMyAdmin

sudo apt-get install phpmyadmin

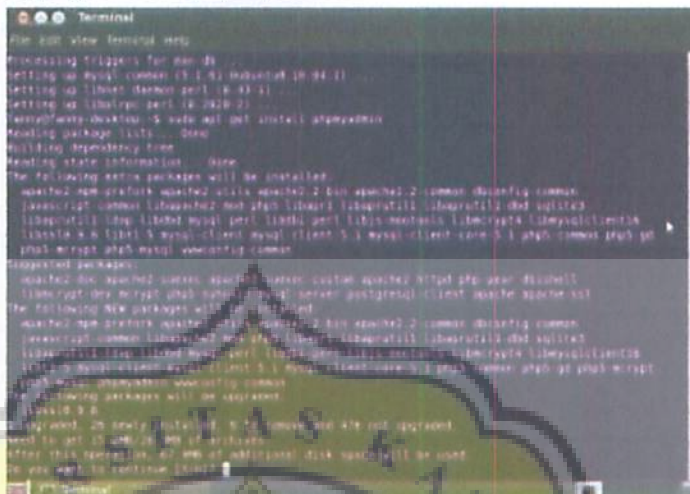


Figure 5.1.1.5 Install PhpMyAdmin

After installation is finished, it will displays a windows to specify which web server that should be use. Choose by press the space key, then configuration by 'OK'.

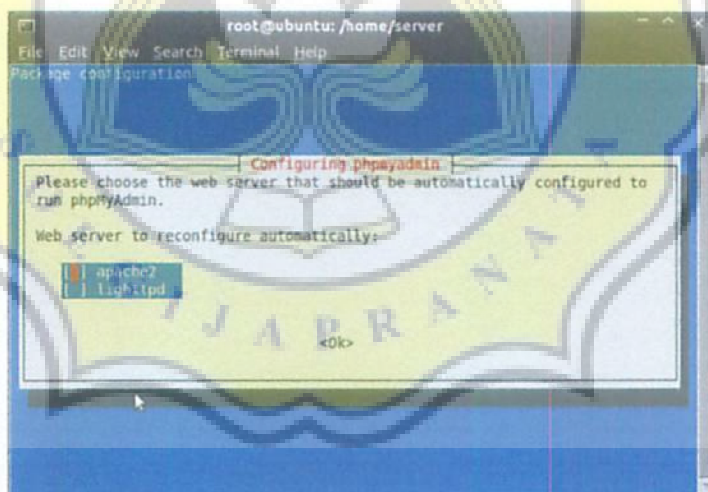


Figure 5.1.1.6 Configuring Web-server PhpMyAdmin

After chose web-server for PhpMyAdmin, configuration for PhpMyAdmin will show up, continue by 'no'.

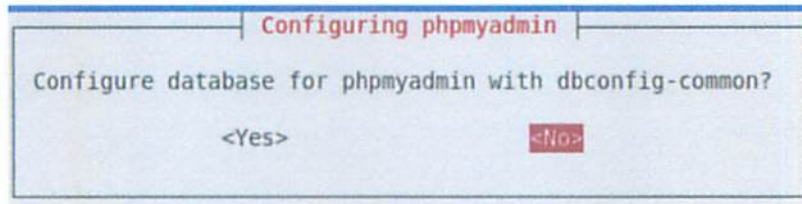


Figure 5.1.1.7 Configuring PhpMyAdmin

5.1.2 Install Gammu Packages

After Operating System and Web-server was setup, then I setup of gammu include libgammu, gammu-smsd, gammurc to support this application. Where gammu-smsd is configuration of database and the modem device to gammu. Gammurc is a configuration of modem device to gammu.

1) Setup Gammu

```
#sudo apt-get install gammu
Reading package lists... Done
Building dependency tree
Reading state information... Done
The following extra packages will be installed:
  freepats libaudio2 libcdt0 libgammu1 libgammu7 libgsm0 libpq5 libsox2-2.0-0
  libsox2-2.0-0 python-bt42 python-gammu python-wxgtk2.8 python-wxversion tinidity
  tinidity-daemon
Suggested packages:
  nag gammu-smsd libgammu-printui2-7-0 python-gammu-tui wx2.8-doc wx2.8-examples python-wxtools
  ruby tclsh csh octave3.0 ekti jdk-8-jre pdftk font-sondfont gm fluid-sondfont gs
The following NEW packages will be installed:
  freepats gammu gsm16lemod libaudio2 libcdt0 libgammu1 libgammu7 libgsm0 libpq5
  libsox2-2.0-0 libsox2-2.0-0 python-bt42 python-gammu python-wxgtk2.8 python-wxversion
  tinidity tinidity-daemon gammu
0 upgraded, 18 newly installed, 0 to remove and 457 not upgraded.
Need to get 48.8MB of archives.
After this operation 77.0MB of additional disk space will be used.
Do you want to continue [Y/n]? y
0.0 http://id.archive.ubuntu.com/ubuntu/ main/universe freepats 20060219-1 [59.0kB]
0.0 http://id.archive.ubuntu.com/ubuntu/ main/universe libgammu1 0.9.0-1 [11.1kB]
0.0 http://id.archive.ubuntu.com/ubuntu/ main/universe libgammu7 0.9.0-1 [11.1kB]
```

Figure 5.1.2.1 Install Gammu

2) Setting Permission folder

```
# sudo chmod -R 777 /var/www
```

```
# sudo chmod -R 777/usr/share/doc/gammu/examples/config/gammurc.gz
```

```
# sudo chmod -R 777/usr/share/doc/gammu/examples/sql/mysql.sql.gz
```


3) Extract File

```
# sudo gunzip /usr/share/doc/gammu/examples/sql/mysql.sql.gz
```

```
mysql.sql  
root@ubuntu: /usr/share/doc/gammu/examples/sql# []
```

Figure 5.1.2.2 Extract mysql.sql.gz

4) Check Port usb for configuration

```
# dmesg
```



Figure 5.1.2.3 Checking Port

5) Edit gammu-config, gammurc, and gammu-smsdrc

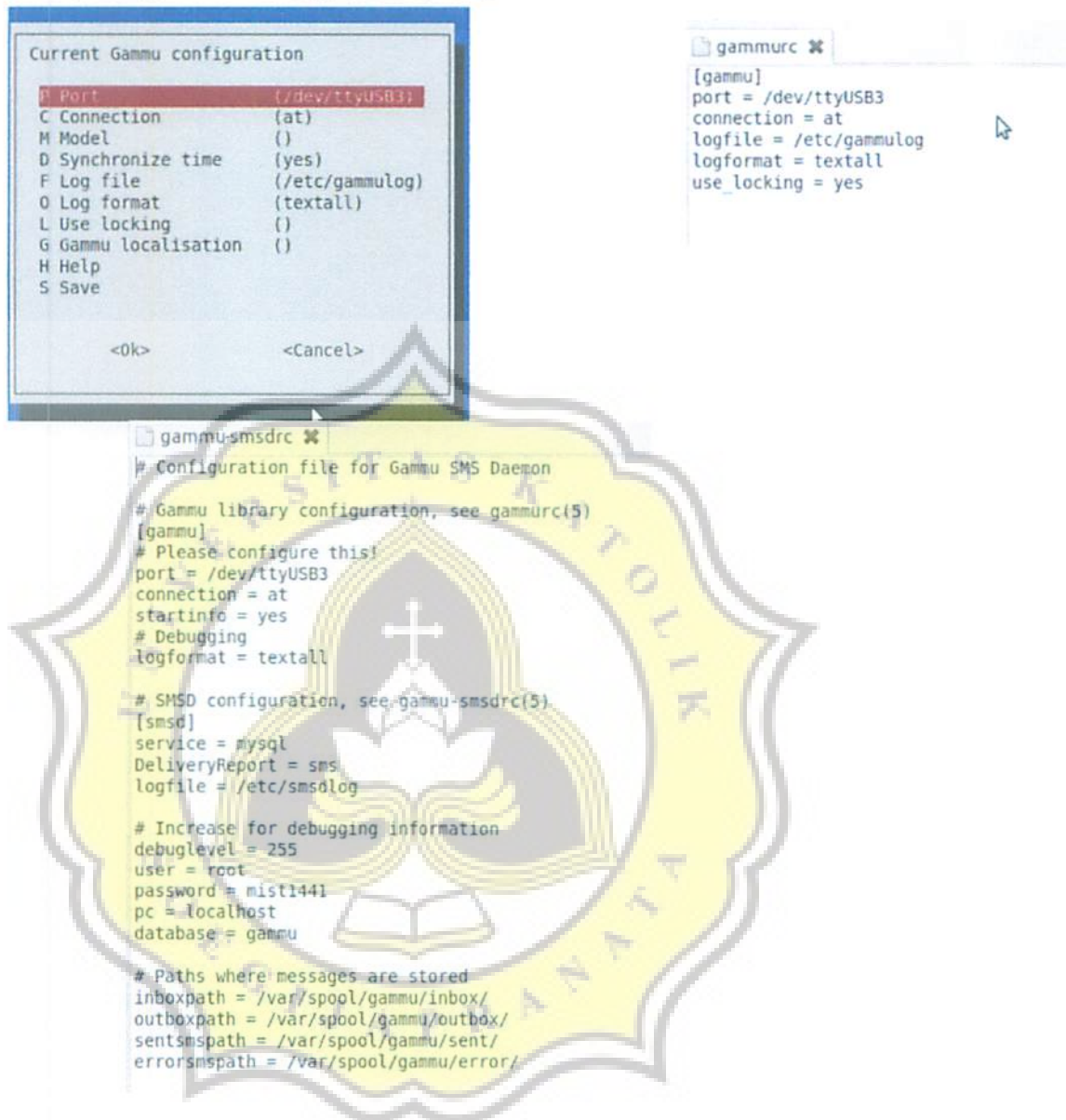


Figure 5.1.1.6 Configuring Web-server PhpMyAdmin

6) Check Gammu --identify

#gammu --identify

```
root@ubuntu:/# gammu --identify
Device       : /dev/ttyUSB3
Manufacturer : huawei
Model        : unknown (E173)
Firmware     : 11.126.15.00.209
IMEI         : 867455004155741
SIM IMSI     : 510800991201982
root@ubuntu:/#
```

Figure 5.1.2.5 Gammu Identify

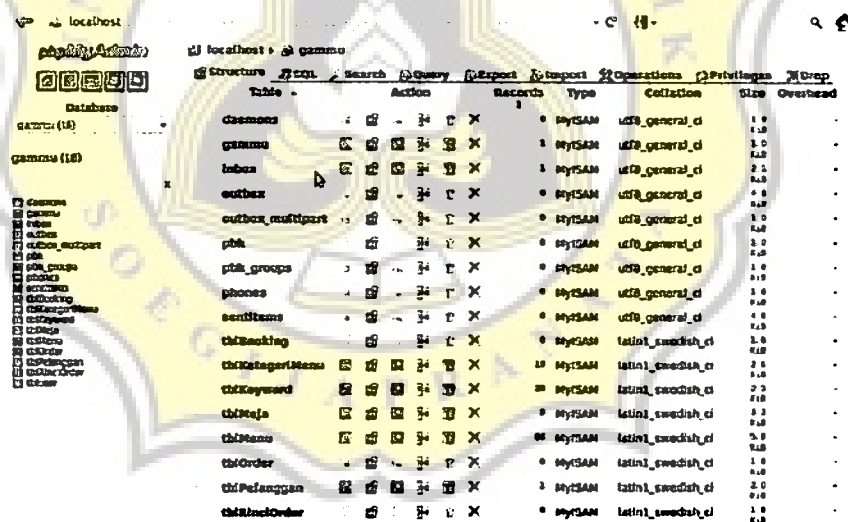
7) Daemon mysql.sql

Daemon mysql.sql from extract in /usr/share/doc/gammu/examples/ to database using name gammu.

#mysql -u root -p smsd > mysql.sql

```
root@ubuntu:/# cd /usr/share/doc/gammu/examples/sql/
root@ubuntu: /usr/share/doc/gammu/examples/sql# mysql -u root -p gammu < mysql.sql
Enter password:
```

Figure 5.1.2.6 Daemon mysql.sql to Database



The screenshot shows the MySQL database structure for the 'gammu' database. The tables listed are:

Table	Coll	Search	Action	Query	Export	Import	Operations	Collation	Size	Overhead
gammu							1	utf8_general_ci	1.0	-
gammu							1	utf8_general_ci	1.0	-
inbox							1	utf8_general_ci	2.1	-
outbox							0	utf8_general_ci	4.8	-
outbox_multispart							0	utf8_general_ci	1.0	-
pbk							0	utf8_general_ci	1.0	-
pbk_groups							0	utf8_general_ci	1.0	-
phones							0	utf8_general_ci	1.0	-
sentitems							0	utf8_general_ci	4.0	-
tblBacking							0	latin1_swedish_ci	1.0	-
tblBackupItems							10	latin1_swedish_ci	2.5	-
tblKeyword							0	latin1_swedish_ci	1.0	-
tblMeja							0	latin1_swedish_ci	0.3	-
tblMenu							0	latin1_swedish_ci	5.0	-
tblOrder							0	latin1_swedish_ci	1.0	-
tblPelanggan							1	latin1_swedish_ci	2.0	-
tblInclOrder							0	latin1_swedish_ci	1.0	-

Figure 5.1.2.7 Database gammu

8) Run Gammu

```
# sudo gammu-smsd -c /etc/gammu-smsdrc -d
```

```
miaru@ubuntu:~$ su
Password:
root@ubuntu:~/home/miara# sudo gammu smsd -c /etc/gammu-smsdrc -d
Log filename is "/etc/smsdlog"
root@ubuntu:~/home/miara#
```

Figure 5.1.2.8 Run Gammu

9) Check

```
# tail -f /etc/smsdlog
```

```
root@ubuntu:~/home/miara# tail -f /etc/smsdlog
Wed 2012/07/11 09:59:17 gammu smsd[1044]: gammu: [00]TC,[37]I[33]TC,[100]TC,[135]
[300]OD,[0A],[0D],[0A],[2F0]RB,[0D],[23,0,50],[0A]
Wed 2012/07/11 09:59:17 gammu smsd[1044]: gammu: 0A
Wed 2012/07/11 09:59:17 gammu smsd[1044]: gammu: SMS status received
Wed 2012/07/11 09:59:17 gammu smsd[1044]: gammu: Parsing +CRPS: 0,23,0,71,0,50 w
ith +CRPS: 01,01,00
Wed 2012/07/11 09:59:17 gammu smsd[1044]: gammu: Parsed int 0
Wed 2012/07/11 09:59:17 gammu smsd[1044]: gammu: Parsed int 71
Wed 2012/07/11 09:59:17 gammu smsd[1044]: gammu: Used : 0
Wed 2012/07/11 09:59:17 gammu smsd[1044]: gammu: Size : 21
Wed 2012/07/11 09:59:17 gammu smsd[1044]: gammu: Leaving GSM GetSMSStatus
Wed 2012/07/11 09:59:17 gammu smsd[1044]: Execute SMI: WPBAll phones SET time
Out: (RDR): 1;RL:RVAL 10 SCCO:0;0. Battery : 0, Signal : 50 WMLR: 1RL1 :
1857455604155741
Wed 2012/07/11 09:59:18 gammu smsd[1044]: gammu: Entering GSM GetSecurityStatus
Wed 2012/07/11 09:59:18 gammu smsd[1044]: gammu: Getting security code status
Wed 2012/07/11 09:59:18 gammu smsd[1044]: gammu: STARTING frametype 0x00/length 0
-09/9
Wed 2012/07/11 09:59:18 gammu smsd[1044]: gammu: 41A[51]CB,[3C][50P]91[4E]3F?
10B
AT+CPIN:
Wed 2012/07/11 09:59:18 gammu smsd[1044]: gammu: 1: 161-CPIN:
Wed 2012/07/11 09:59:18 gammu smsd[1044]: gammu: 2: -CPIN: READY
Wed 2012/07/11 09:59:18 gammu smsd[1044]: gammu: 3: 10A
Wed 2012/07/11 09:59:18 gammu smsd[1044]: gammu: RL1:RDR: frametype 0x00/length
0x11/31
Wed 2012/07/11 09:59:18 gammu smsd[1044]: gammu: 41A[51]CB,[3C][50P]91[4E]3F?
[0D][0A][2B],[3C][50P]91[4E]3F: AT+CPIN: -CPIN:
Wed 2012/07/11 09:59:18 gammu smsd[1044]: gammu: 1A,[2D][52R]45E[41A]80[597]0D
[0A][0D][0A][40]4B,[02][0A]
READY: 0A...
Wed 2012/07/11 09:59:18 gammu smsd[1044]: gammu: Parsing +CPIN: READY with +CPIN:
0
Wed 2012/07/11 09:59:18 gammu smsd[1044]: gammu: Grabbed string from reply: "RLA
DY" (parsed 5 bytes)
Wed 2012/07/11 09:59:18 gammu smsd[1044]: gammu: Parsed raw string "RLADY"
Wed 2012/07/11 09:59:18 gammu smsd[1044]: gammu: Security status received - not
ing to enter
Wed 2012/07/11 09:59:19 gammu smsd[1044]: gammu: Leaving GSM GetSecurityStatus
```

Figure 5.1.2.9 Check

5.1.3 Web Implementation

At this application, all the data is store at the database gammu in PhpMyadmin. So every time gammu is receiving messages, it will directly store in table inbox. When Gammu is sending a reply to sender, it will store a messages to outbox table and then wait until gammu succesfully send the messages. The messages which has been successfully sent next will be store in sentitems table.

1. Connect to Database

```
connect.php
<?php
    $connect = mysql_connect("localhost","root","mist1441");
    if(!$connect)
    {
        echo "Failed to connect mySQL<br/>";
    }
?>
```

Figure 5.1.3.1 Database connection Php Script

2. Add Database

```
<?php
include "connect.php";
$dbHost = "localhost";
$dbUser = "root";
$dbPass = "mist1441";
$dbName = "gammu";

//user
$stmtUser = "create table if not exists tbluser(username varchar(20) primary key, password varchar(100))";
$stmtUserquery = mysql_query($stmtUser);

//Pelanggan
$stmtPelanggan = "create table if not exists tblpelanggan(id_pelanggan varchar(15) primary key not null,
nama_pelanggan varchar(100) not null, alamat_pelanggan varchar(100) not null, no_hp varchar(100) not null, no_telepon varchar(100) not null)";
$stmtPelangganquery = mysql_query($stmtPelanggan);

//Kategori Menu
$stmtKategoriMenu = "create table if not exists tblkategori(id_kategori varchar(15) primary key not null,
kategori_menu varchar(100) not null)";
$stmtKategoriMenuquery = mysql_query($stmtKategoriMenu);

//Menu
$stmtMenu = "create table if not exists tblmenu(id_menu varchar(15) primary key not null, nama_menu varchar(100) not null, id_kategori varchar(15) foreign key (id_kategori) references tblkategori(id_kategori) on delete cascade on update cascade)";
$stmtMenuquery = mysql_query($stmtMenu);

//Booking
$stmtBooking = "create table if not exists tblbooking(id_booking int primary key not null, id_pelanggan varchar(15) not null, jmlh_drg varchar(10) not null, time_booking varchar(50) not null, status varchar(50) not null default 'belum selesai', foreign key (id_pelanggan) references tblpelanggan (id_pelanggan) on delete cascade on update cascade)";
$stmtBookingquery = mysql_query($stmtBooking);

//Meja
$stmtMeja = "create table if not exists tblmeja(id_meja int primary key not null, kapasitas int, status varchar(50) not null default 'belum terpakai', no_booking int, foreign key (no_booking) references tblbooking (id_booking) on delete cascade on update cascade)";
$stmtMejaquery = mysql_query($stmtMeja);

//Order
$stmtOrder = "create table if not exists tblorder(id_order int primary key not null, id_pelanggan varchar(15) not null, time_order varchar(50) not null, time_finis varchar(50) not null, time_do int not null, jenis_order varchar(50) not null, status varchar(20) not null default 'belum', foreign key (id_pelanggan) references tblpelanggan (id_pelanggan) on delete cascade on update cascade)";
$stmtOrderquery = mysql_query($stmtOrder);
```

Figure 5.1.3.2 Add Database Using Php Script

3. Login

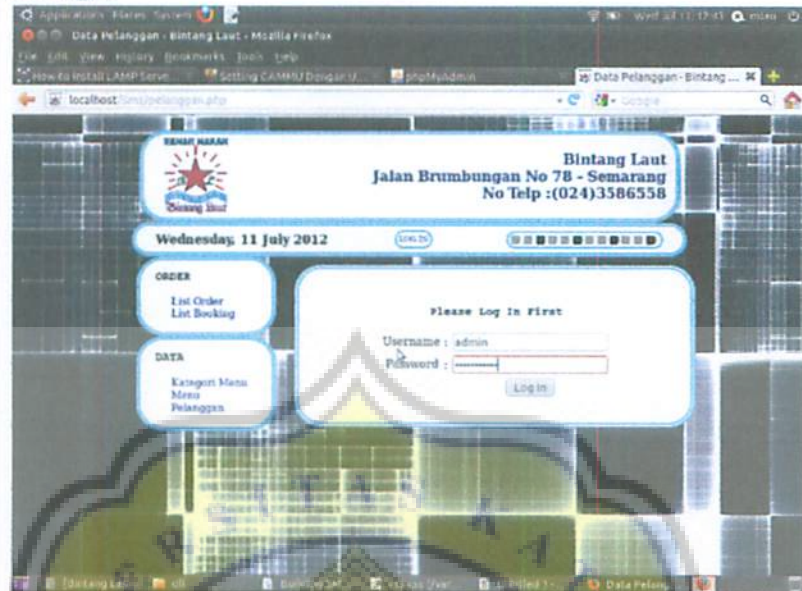


Figure 5.1.3.3 Login Php

After login

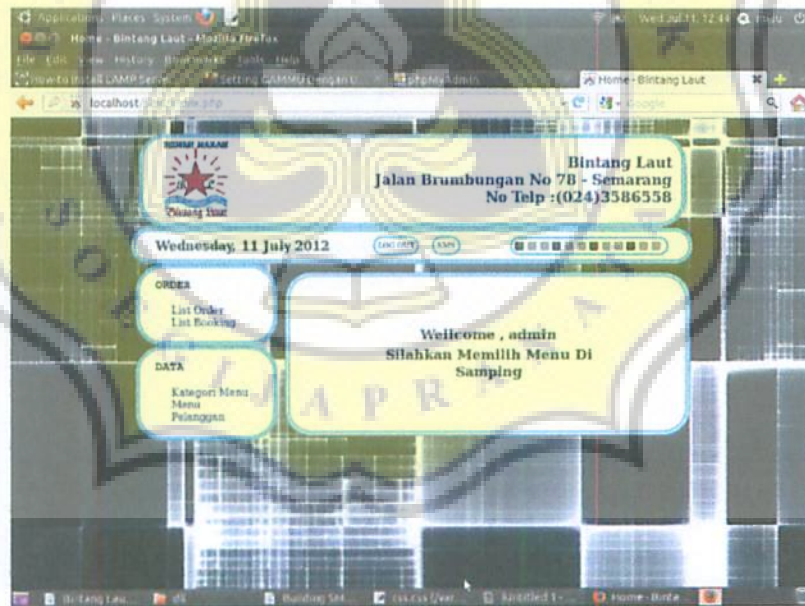


Figure 5.1.3.4 Welcome Php

4. Form Pelanggan

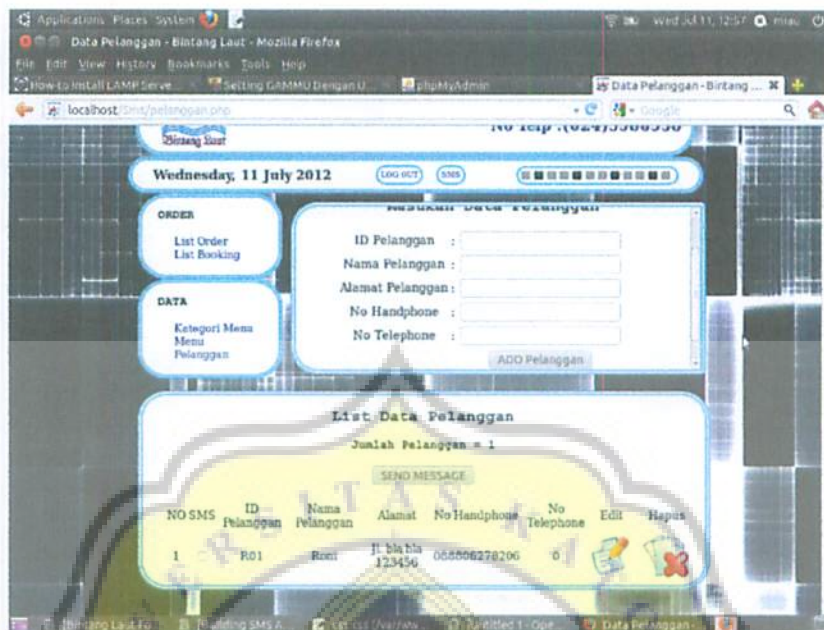


Figure 5.1.3.5 Pelanggan Php

Fill in customer data into database. Id pelanggan is primary key tblPelanggan.

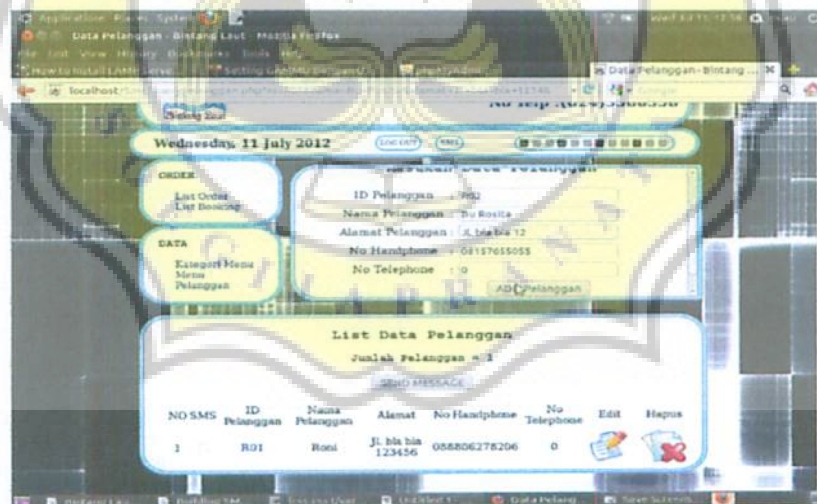


Figure 5.1.3.6 Fill Data Pelanggan

If the data successful input insert the database

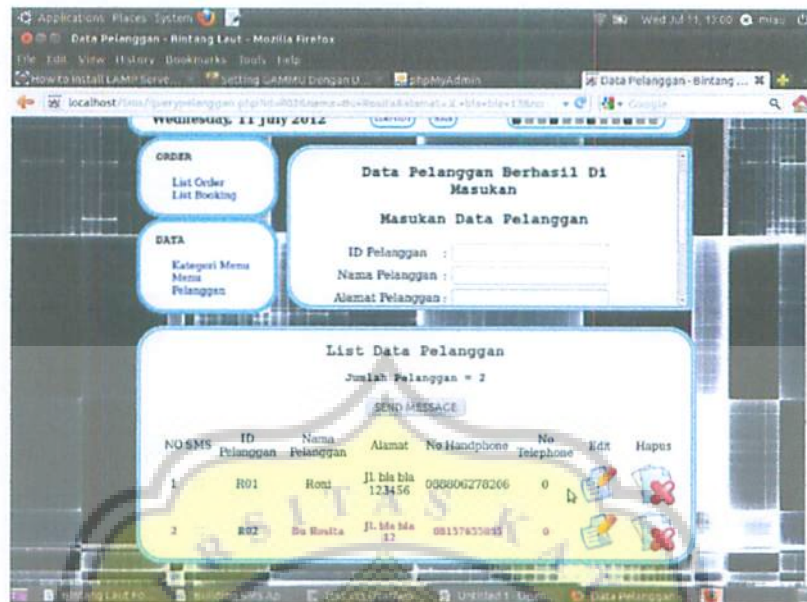


Figure 5.1.3.7 Data Pelanggan Successfully insert Into Database

If the data failed insert into the database

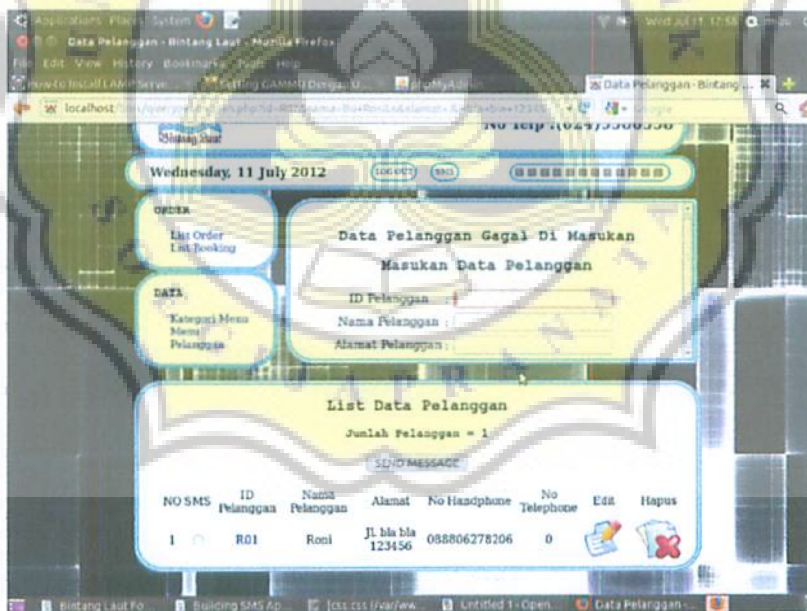


Figure 5.1.3.8 Data Pelanggan Failed insert Into Database

5. Form Kategori Menu

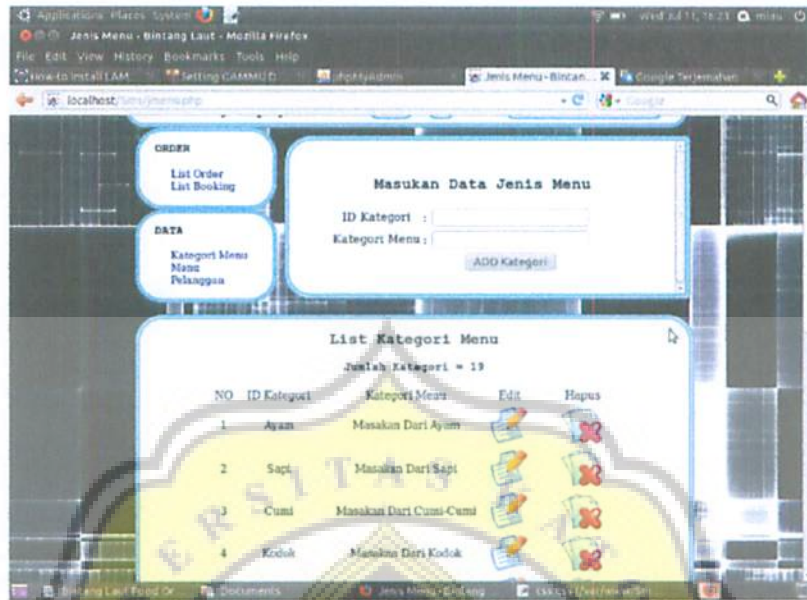


Figure 5.1.3.9 Kategori Menu Php

This form is showing category for menu, adding new category, editing category, and deleting category. This table is connected to the table tblMenu using id_kategori on tblKategori.

6. Form Menu

The screenshot shows a web application interface for menu management. The browser address bar indicates the URL is localhost:3000/menu.php. The interface is divided into several sections:

- ORDER:** Contains links for 'List Order' and 'List Booking'.
- DATA:** Contains links for 'Kategori Menu', 'Menu', and 'Pelanggan'.
- Masukan Menu:** A form for adding new menu items with fields for 'ID Menu', 'Nama Menu', 'Kategori Menu' (a dropdown menu currently showing 'Kendilau'), and 'Harga'.
- List Menu:** A table displaying the current menu items. The table has 8 columns: NO, ID Menu, Nama Menu, Kategori Menu, Harga, Waktu Masak, Edit, and Hapus. There are 4 rows of data.

NO	ID Menu	Nama Menu	Kategori Menu	Harga	Waktu Masak	Edit	Hapus
1	AA	Rebus	Ayam	22	10		
2	AB	Rasa	Ayam	22	10		
3	AC	Neking	Ayam	22	10		
4	AD	Kukuyuk	Ayam	22	10		

Figure 5.1.3.10 Menu Php

This form is showing all menu, adding new menu, editing menu, and deleting menu. This table is connected to the table tblRinciOrder using id_menu on tblMenu.

7. Form Auto Reply

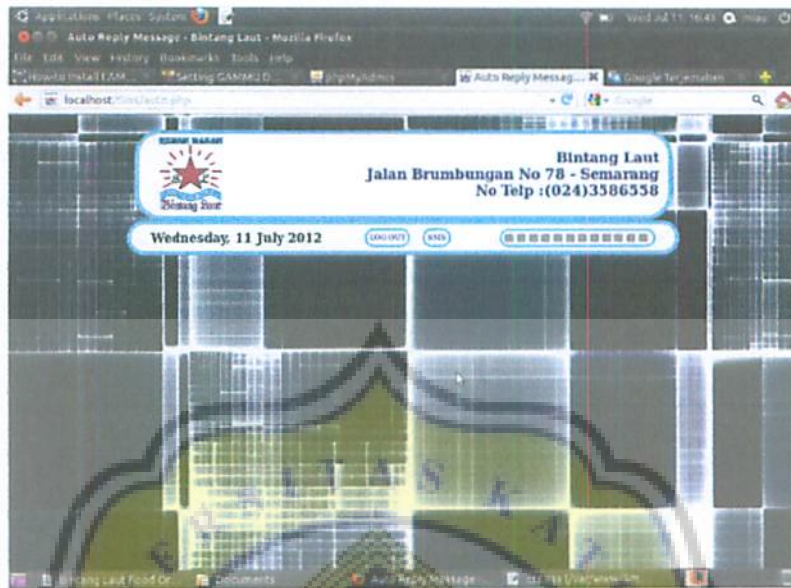


Figure 5.1.3.11 Auto Reply Php

This form for automatically reply sms from inbox where user must registered their phone number. This form reply sms by keyword in text sms from user. To show all keyword user just have to send sms who contain text "HELP" and then this form will auto reply user with sms containing keyword for show menu, ordering, change order, and many more. This the some code on this form :

