Program Studi : Teknik Informatika

Laporan Praktikum : Basis Data 2

Instalasi database PostgreSQL

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Instalasi PostgreSQL

System Requirement

- Ubuntu 16.04 x64
- PostgreSQL v10.5

Percobaan 1 : Instal PostgreSQL Cluster Database

1. Membuat user baru

```
mazharrasyad@Mazharrasyad: ~
mazharrasyad@Mazharrasyad:~$ sudo useradd -m -s /bin/bash apsql
[sudo] password for mazharrasyad:
mazharrasyad@Mazharrasyad:~$ sudo passwd apsql
Enter new UNIX password:
Retype new UNIX password:
passwd: password updated successfully
mazharrasyad@Mazharrasyad:~$
```

2. Install library readline-dev dan zlib-dev

```
mazharrasyad@Mazharrasyad: ~
mazharrasyad@Mazharrasyad:~$ sudo apt-get install libreadline-dev
Reading package lists... Done
Building dependency tree
Reading state information... Done
libreadline-dev is already the newest version (6.3-8ubuntu2).
0 upgraded, 0 newly installed, 0 to remove and 0 not upgraded.
mazharrasyad@Mazharrasyad:~$ sudo apt-get install zlib1g-dev
Reading package lists... Done
Building dependency tree
Reading state information... Done
zlib1g-dev is already the newest version (1:1.2.8.dfsg-2ubuntu4.1).
0 upgraded, 0 newly installed, 0 to remove and 0 not upgraded.
mazharrasyad@Mazharrasyad:~$
```

3. - Download source postgresql v10.5pada link berikut :

   https://ftp.postgresql.org/pub/source/v10.5/postgresql-10.5.tar.gz

   - Secara default file akan tersimpan di direktori Download

   - Ekstrak source postgresql yang sudah di download

```
mazharrasyad@Mazharrasyad: ~/Downloads
mazharrasyad@Mazharrasyad:~$ cd Downloads/
mazharrasyad@Mazharrasyad:~/Downloads$ ls
postgresql-10.5.tar.gz
mazharrasyad@Mazharrasyad:~/Downloads$ tar -xvzf postgresql-10.5.tar.gz
postgresql-10.5/
postgresql-10.5/.dir-locals.el
postgresql-10.5/contrib/
postgresql-10.5/contrib/tcn/
```

Tampilan Proses... (Skip)

```
mazharrasyad@Mazharrasyad: ~/Downloads
postgresql-10.5/GNUmakefile.in
postgresql-10.5/.gitattributes
postgresql-10.5/aclocal.m4
postgresql-10.5/configure.in
postgresql-10.5/INSTALL
mazharrasyad@Mazharrasyad:~/Downloads$
```

4. Pindah direktori ke direktori hasil ekstrak sebelumnya

```
mazharrasyad@Mazharrasyad: ~/Downloads/postgresql-10.5
mazharrasyad@Mazharrasyad:~/Downloads$ ls
postgresql-10.5  postgresql-10.5.tar.gz
mazharrasyad@Mazharrasyad:~/Downloads$ cd postgresql-10.5/
mazharrasyad@Mazharrasyad:~/Downloads/postgresql-10.5$
```

5. Konfigurasi instalasi postgresql agar diinstall pada user yang dibuat sebelumnya

```
mazharrasyad@Mazharrasyad: ~/Downloads/postgresql-10.5
mazharrasyad@Mazharrasyad:~/Downloads/postgresql-10.5$ sudo ./configure --prefix
=/home/apsql/pg105
[sudo] password for mazharrasyad:
checking build system type... x86_64-pc-linux-gnu
checking host system type... x86_64-pc-linux-gnu
checking which template to use... linux
```

Tampilan Proses... (Skip)

```
mazharrasyad@Mazharrasyad: ~/Downloads/postgresql-10.5
m.c
config.status: linking src/backend/port/dynloader/linux.h to src/include/dynload
er.h
config.status: linking src/include/port/linux.h to src/include/pg_config_os.h
config.status: linking src/makefiles/Makefile.linux to src/Makefile.port
mazharrasyad@Mazharrasyad:~/Downloads/postgresql-10.5$
```

6. Compile source postgresql

```
mazharrasyad@Mazharrasyad: ~/Downloads/postgresql-10.5
mazharrasyad@Mazharrasyad:~/Downloads/postgresql-10.5$ sudo make
make -C src all
make[1]: Entering directory '/home/mazharrasyad/Downloads/postgresql-10.5/src'
make -C common all
make[2]: Entering directory '/home/mazharrasyad/Downloads/postgresql-10.5/src/co
mmon'
```

Tampilan Proses... (Skip)

```
mazharrasyad@Mazharrasyad: ~/Downloads/postgresql-10.5
make[1]: Entering directory '/home/mazharrasyad/Downloads/postgresql-10.5/config
'
make[1]: Nothing to be done for 'all'.
make[1]: Leaving directory '/home/mazharrasyad/Downloads/postgresql-10.5/config'
All of PostgreSQL successfully made. Ready to install.
mazharrasyad@Mazharrasyad:~/Downloads/postgresql-10.5$
```

7. Membuat file binary pada folder yang telah dikonfigurasi sebelumnya

```
mazharrasyad@Mazharrasyad: ~/Downloads/postgresql-10.5
mazharrasyad@Mazharrasyad:~/Downloads/postgresql-10.5$ sudo make install
make -C src install
make[1]: Entering directory '/home/mazharrasyad/Downloads/postgresql-10.5/src'
make -C common install
make[2]: Entering directory '/home/mazharrasyad/Downloads/postgresql-10.5/src/co
mmon'
make -C ../backend submake-errcodes
```

Tampilan Proses... (Skip)

```
mazharrasyad@Mazharrasyad: ~/Downloads/postgresql-10.5
onfig/install-sh'
/usr/bin/install -c -m 755 ./missing '/home/apsql/pg105/lib/postgresql/pgxs/conf
ig/missing'
make[1]: Leaving directory '/home/mazharrasyad/Downloads/postgresql-10.5/config'
PostgreSQL installation complete.
mazharrasyad@Mazharrasyad:~/Downloads/postgresql-10.5$
```

Percobaan 1 Selesai...

Percobaan 2 : Direktori Data

1. Login ke console user sebelumnya yang telah diatur untuk postgresql

```
apsql@Mazharrasyad: ~
mazharrasyad@Mazharrasyad:~$ sudo su - apsql
[sudo] password for mazharrasyad:
apsql@Mazharrasyad:~$
```

2. Buat direktori data cluster postgresql

```
apsql@Mazharrasyad: ~
apsql@Mazharrasyad:~$ mkdir datapg
apsql@Mazharrasyad:~$ ls
datapg  examples.desktop  pg105
apsql@Mazharrasyad:~$
```

3. Masuk ke direktori yang berisi file binary postgresql yang telah dibuat sebelumnya

```
apsql@Mazharrasyad: ~/pg105
apsql@Mazharrasyad:~$ ls
datapg  examples.desktop  pg105
apsql@Mazharrasyad:~$ cd pg105/
apsql@Mazharrasyad:~/pg105$
```

4. Inisialisasi direktori data untuk pertama kali

```
apsql@Mazharrasyad: ~/pg105
apsql@Mazharrasyad:~/pg105$ ./bin/initdb -D /home/apsql/datapg/
The files belonging to this database system will be owned by user "apsql".
This user must also own the server process.

The database cluster will be initialized with locales
  COLLATE:  en_US.UTF-8
```

Tampilan Proses... (Skip)

```
apsql@Mazharrasyad: ~/pg105

Success. You can now start the database server using:

    ./bin/pg_ctl -D /home/apsql/datapg/ -l logfile start

apsql@Mazharrasyad:~/pg105$
```

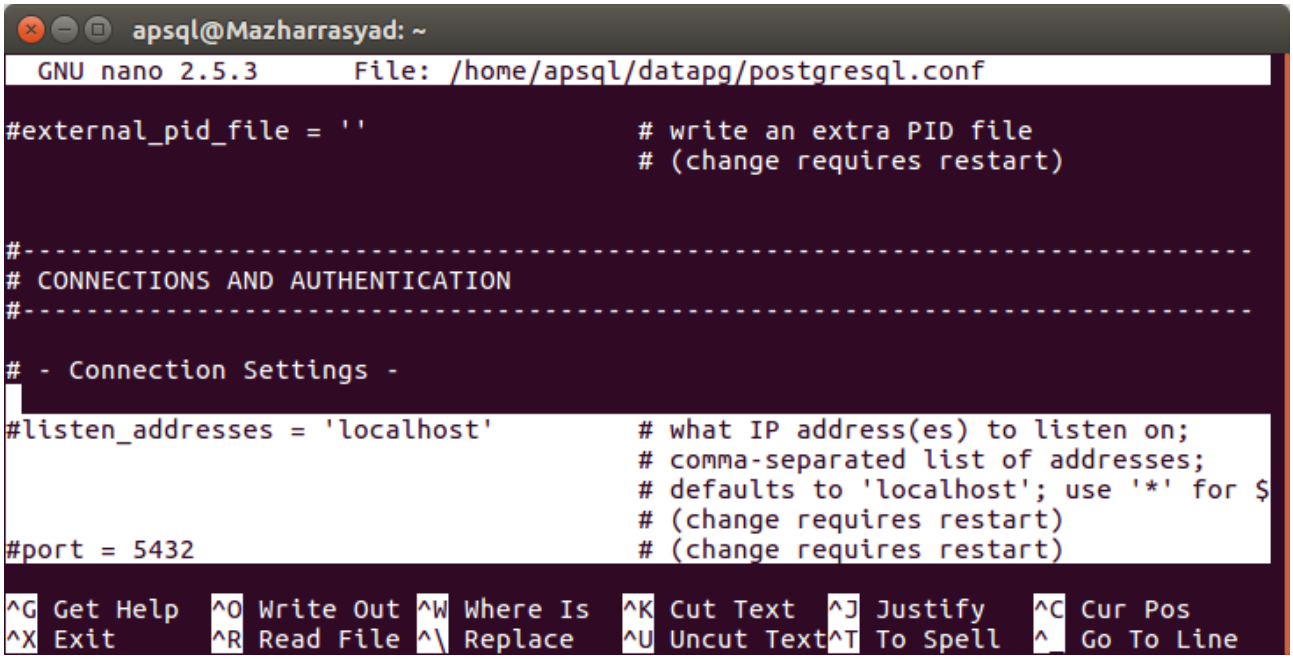
5. Atur database cluster postgresql

```
apsql@Mazharrasyad: ~
apsql@Mazharrasyad:~$ nano /home/apsql/datapg/postgresql.conf
apsql@Mazharrasyad:~$
```

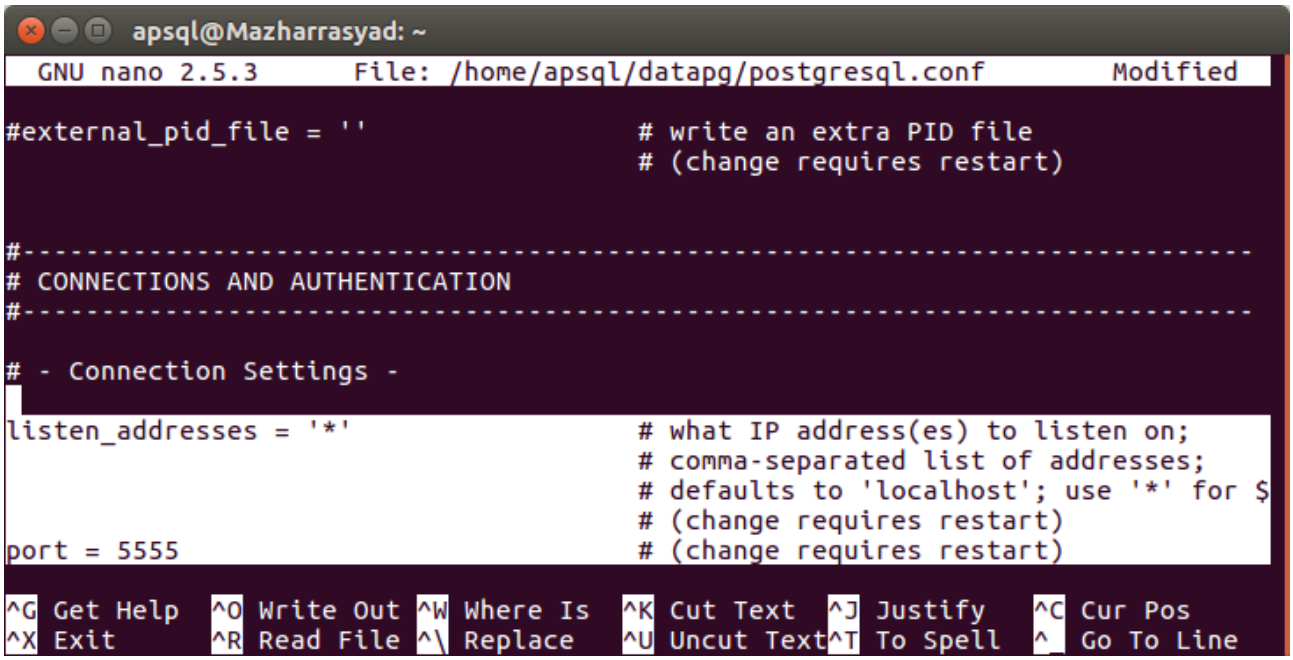
Berubah Tampilan Menjadi Text Editor nano...

```
apsql@Mazharrasyad: ~
  GNU nano 2.5.3      File: /home/apsql/datapg/postgresql.conf

# -----------------------------
# PostgreSQL configuration file
# -----------------------------
#
# This file consists of lines of the form:
#
#   name = value
#
# (The "=" is optional.)  Whitespace may be used.  Comments are introduced with
# "#" anywhere on a line.  The complete list of parameter names and allowed
# values can be found in the PostgreSQL documentation.
#
# The commented-out settings shown in this file represent the default values.
# Re-commenting a setting is NOT sufficient to revert it to the default value;
# you need to reload the server.

^G Get Help  ^O Write Out ^W Where Is  ^K Cut Text  ^J Justify   ^C Cur Pos
^X Exit      ^R Read File ^\ Replace   ^U Uncut Text^T To Spell  ^_ Go To Line
```

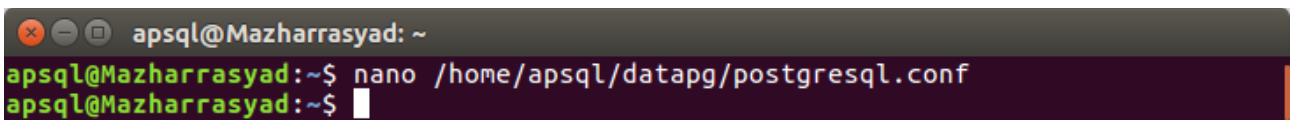
Cari syntax seperti gambar dibawah yang diblok...



Ubah listen_addresses dan port seperti gambar dibawah...



*Jika sudah maka **tekan Ctrl + X** kemudian **ketik Y** dan **tekan Enter**...*



6. Logout dari user yang sebelumnya login

```
mazharrasyad@Mazharrasyad: ~
apsql@Mazharrasyad:~$ exit
logout
mazharrasyad@Mazharrasyad:~$
```

Percobaan 2 Selesai...

Percobaan 3 : Menjalankan dan mematikan service PostgreSQL

1. Login ke user untuk postgresql

```
apsql@Mazharrasyad: ~
mazharrasyad@Mazharrasyad:~$ sudo su - apsql
[sudo] password for mazharrasyad:
apsql@Mazharrasyad:~$
```

2. Mengaktifkan server postgresql

```
apsql@Mazharrasyad: ~
apsql@Mazharrasyad:~$ /home/apsql/pg105/bin/pg_ctl -D /home/apsql/datapg/ -l logfile
 start
waiting for server to start.... done
server started
apsql@Mazharrasyad:~$
```

3. Cek service postgresql

```
apsql@Mazharrasyad: ~
apsql@Mazharrasyad:~$ netstat -tanp | grep :5555
(Not all processes could be identified, non-owned process info
 will not be shown, you would have to be root to see it all.)
tcp        0      0 0.0.0.0:5555            0.0.0.0:*               LISTEN      1865
0/postgres
tcp6       0      0 :::5555                 :::*                    LISTEN      1865
0/postgres
apsql@Mazharrasyad:~$
```

4. Mematikan server postgresql

```
apsql@Mazharrasyad: ~
apsql@Mazharrasyad:~$ /home/apsql/pg105/bin/pg_ctl -D /home/apsql/datapg/ -l logfile
 stop
waiting for server to shut down.... done
server stopped
apsql@Mazharrasyad:~$
```

Percobaan 3 Selesai...

Percobaan 4 : Password Security

1. Login dan aktifkan server postgresql

```
apsql@Mazharrasyad: ~
mazharrasyad@Mazharrasyad:~$ sudo su - apsql
[sudo] password for mazharrasyad:
apsql@Mazharrasyad:~$ /home/apsql/pg105/bin/pg_ctl -D /home/apsql/datapg/ -l logfile
 start
waiting for server to start.... done
server started
apsql@Mazharrasyad:~$
```

2. Login ke server database PostgreSQL yang berjalan di PORT 5555 di komputer lokal

```
apsql@Mazharrasyad: ~
apsql@Mazharrasyad:~$ psql template1 -p 5555 -h localhost
psql (9.5.14, server 10.5)
WARNING: psql major version 9.5, server major version 10.
         Some psql features might not work.
Type "help" for help.

template1=#
```

3. Mengeset password user kemudian keluar dari user terminal interaktif PostgreSQL

```
apsql@Mazharrasyad: ~
template1=# ALTER USER apsql WITH password 'apsql';
ALTER ROLE
template1=# \q
apsql@Mazharrasyad:~$
```

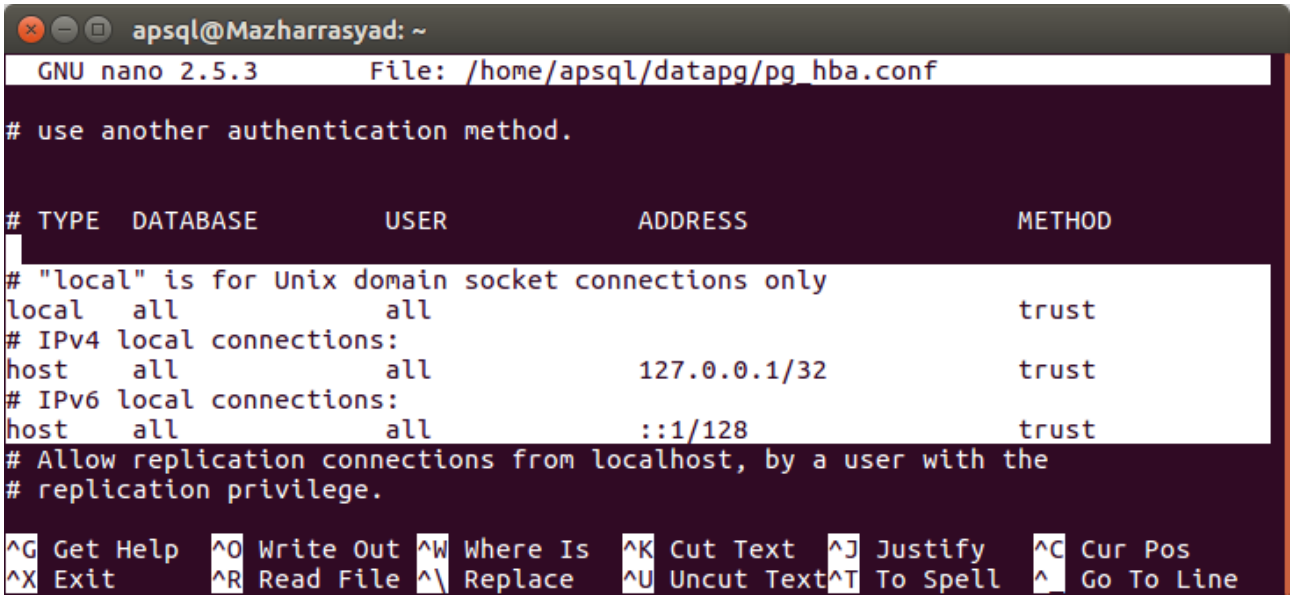
4. Konfigurasi file untuk aktifkan keamanan user dengan password

```
apsql@Mazharrasyad: ~
apsql@Mazharrasyad:~$ nano /home/apsql/datapg/pg_hba.conf
apsql@Mazharrasyad:~$
```

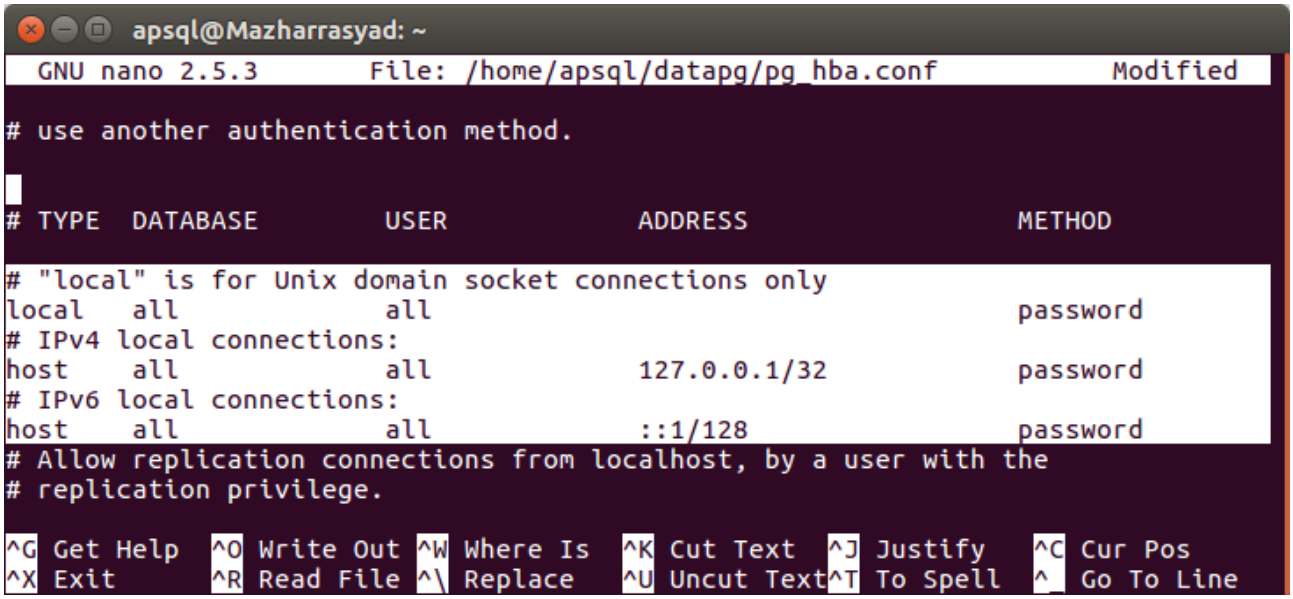
Berubah Tampilan Menjadi Text Editor nano...

```
apsql@Mazharrasyad: ~
  GNU nano 2.5.3       File: /home/apsql/datapg/pg_hba.conf

# PostgreSQL Client Authentication Configuration File
# ===================================================
#
# Refer to the "Client Authentication" section in the PostgreSQL
# documentation for a complete description of this file.  A short
# synopsis follows.
#
# This file controls: which hosts are allowed to connect, how clients
# are authenticated, which PostgreSQL user names they can use, which
# databases they can access.  Records take one of these forms:
#
# local      DATABASE  USER  METHOD  [OPTIONS]
# host       DATABASE  USER  ADDRESS  METHOD  [OPTIONS]

^G Get Help  ^O Write Out ^W Where Is  ^K Cut Text  ^J Justify   ^C Cur Pos
^X Exit      ^R Read File ^\ Replace   ^U Uncut Text^T To Spell  ^_ Go To Line
```

Cari syntax seperti gambar dibawah yang diblok...

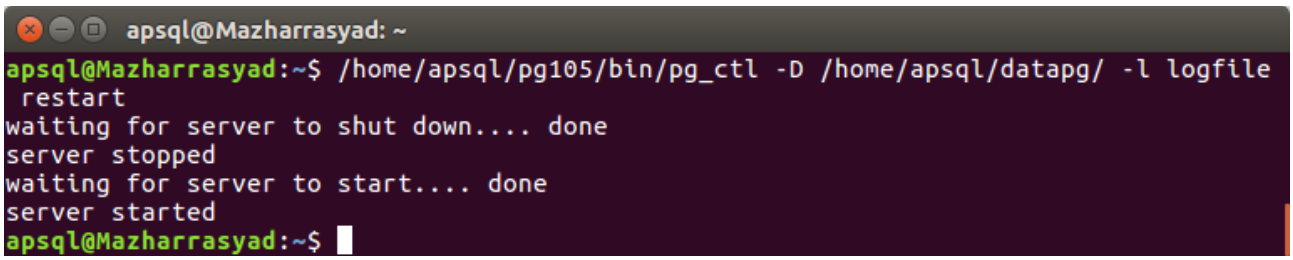


Pada tabel method ubah semua syntax trust menjadi password

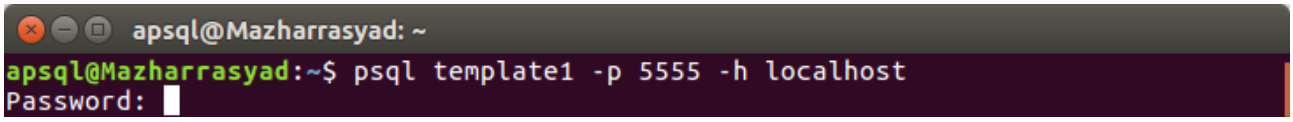


*Jika sudah maka **tekan Ctrl + X** kemudian **ketik Y** dan **tekan Enter**...*

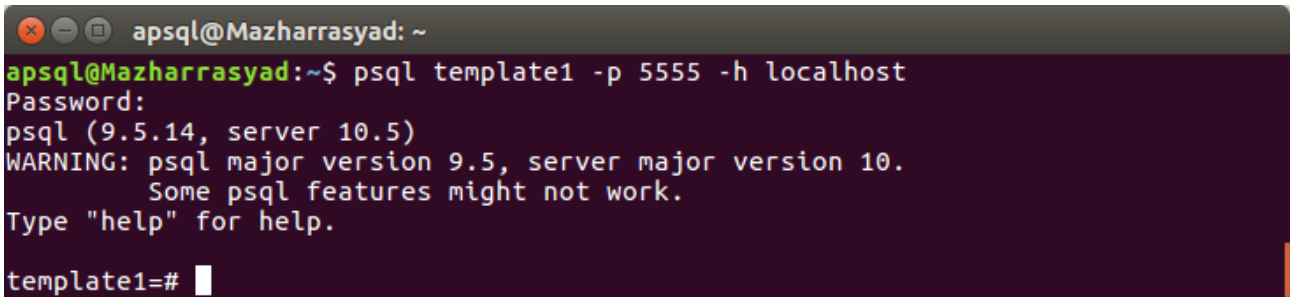
5. Restart service postgresql



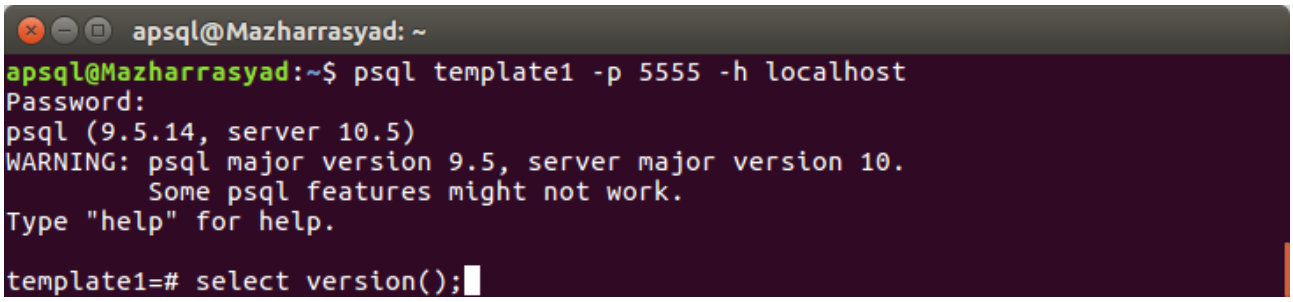
6. Tes pengaturan yang telah diatur sebelumnya



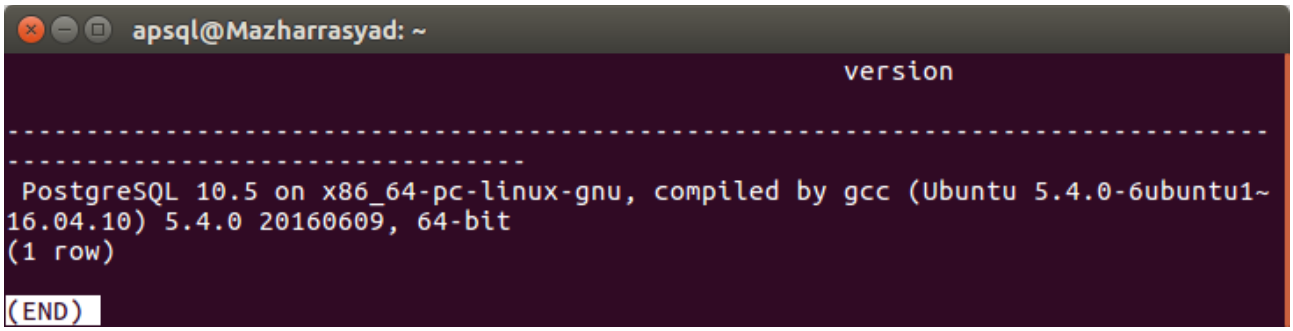
Isi kolom password diatas dengan passsword yang dibuat di user sebelumnya...



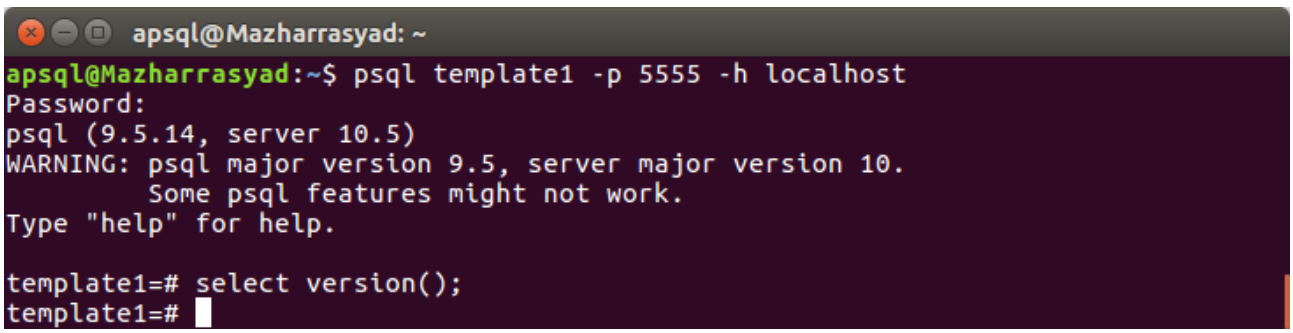
Akan muncul tampilan seperti gambar diatas...



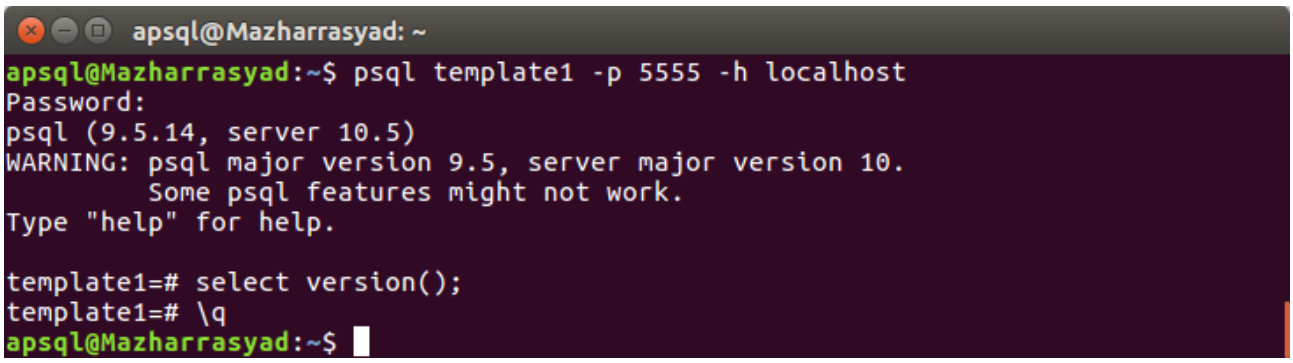
Mengecheck version dari postgresql...



Jika sudah mengetahui versionnya maka tekan q untuk keluar...



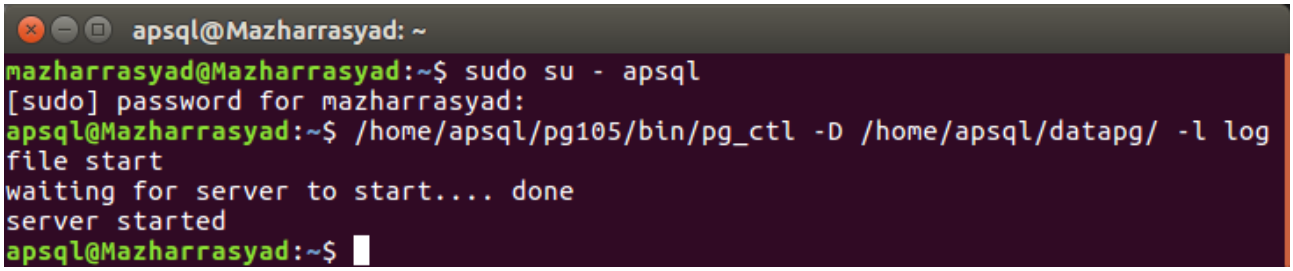
Maka tampilannya kembali ke server postgresql seperti gambar diatas...



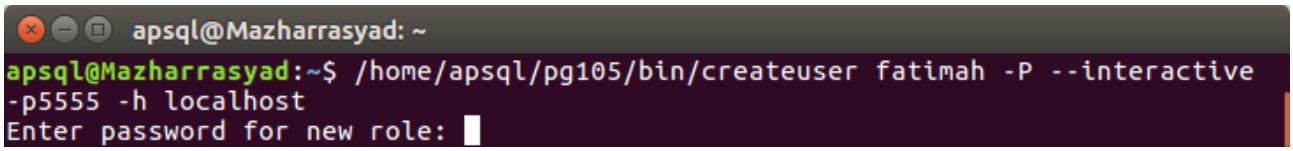
Percobaan 4 Selesai...

Percobaan 5 : Buat reguler user database PostgreSQL

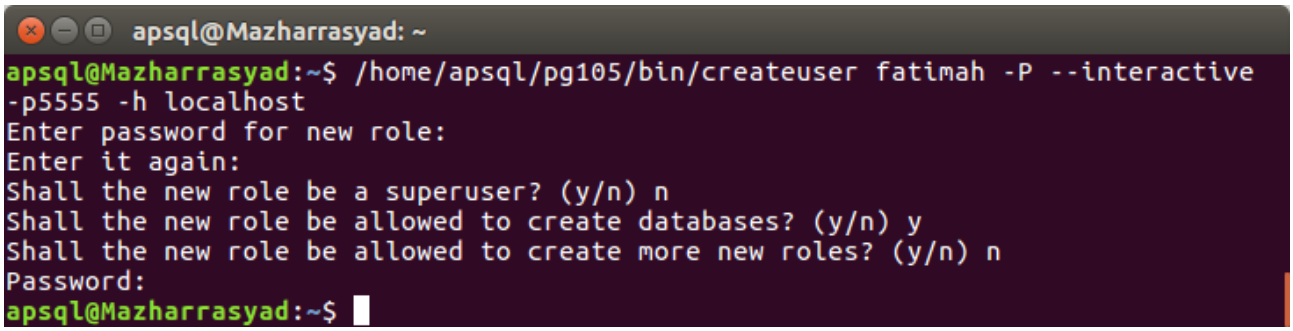
1. Login dan aktifkan server postgresql



2. Buat user fatimah dengan password 1234 dan membuat instan database

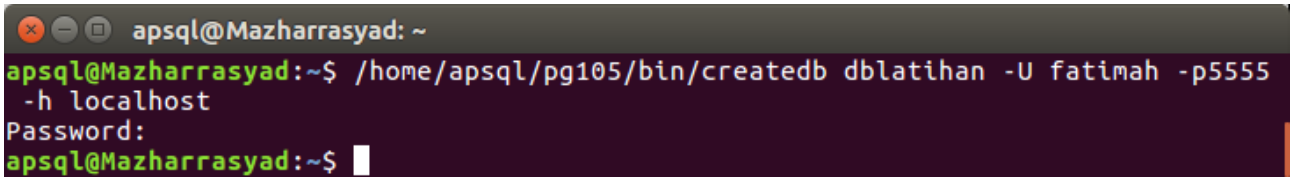


Masukkan password 1234 pada gambar diatas kemudian akan muncul 3 pilihan seperti gambar dibawah : Pilihan 1 ketik n, Pilihan 2 ketik Y, Pilihan 3 ketik n



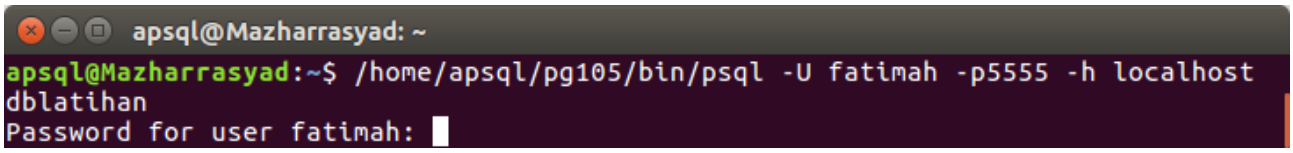
Jika sudah mengetik ketiga pilihan diatas maka isikan password user postgresql

3. Membuat database baru dari user fatimah

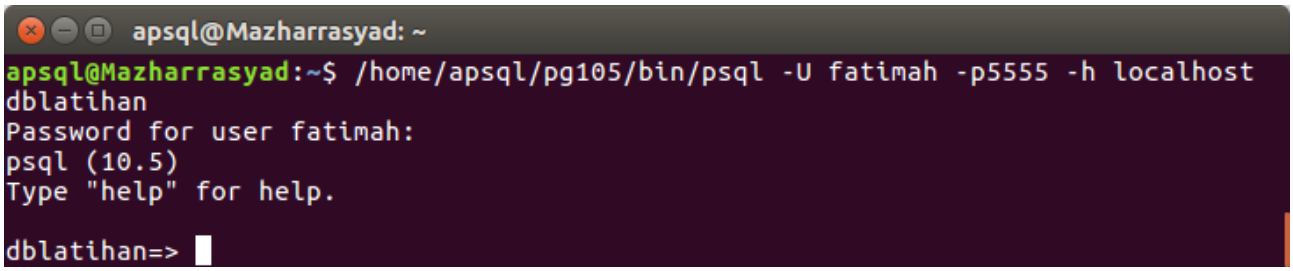


Jika ada kolom password maka isikan dengan password yang sebelumnya dibuat untuk user fatimah yaitu 1234

4. User fatimah login ke database dblatihan



Jika ada kolom password maka isikan dengan password yang sebelumnya dibuat untuk user fatimah yaitu 1234



5. *Percobaan 5 Selesai*

---------- *Selesai* ----------