Program Studi : Teknik Informatika

Laporan Praktikum : Basis Data 2

Praktikum 3

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Prosedut Tersimpan – Fungsi 1

Percobaan 1 : Cek prosedur language apakah sudah terinstall !!

1. Login user postgresql & start 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 log
file start
waiting for server to start.... done
server started
apsql@mazharrasyad:~$
```

2. Create database dbpelatihan2

```
apsql@mazharrasyad: ~
apsql@mazharrasyad:~$ /home/apsql/pg105/bin/createdb dbpelatihan2 -U apsql -p555
5 -h localhost
Password:
apsql@mazharrasyad:~$
```

3. Masuk ke database dbpelatihan2

```
apsql@mazharrasyad: ~
apsql@mazharrasyad:~$ /home/apsql/pg105/bin/psql dbpelatihan2 -U apsql -p5555 -h
 localhost
Password for user apsql:
psql (10.5)
Type "help" for help.

dbpelatihan2=#
```

4. Tampilkan table pg_language (di Jelaskan)

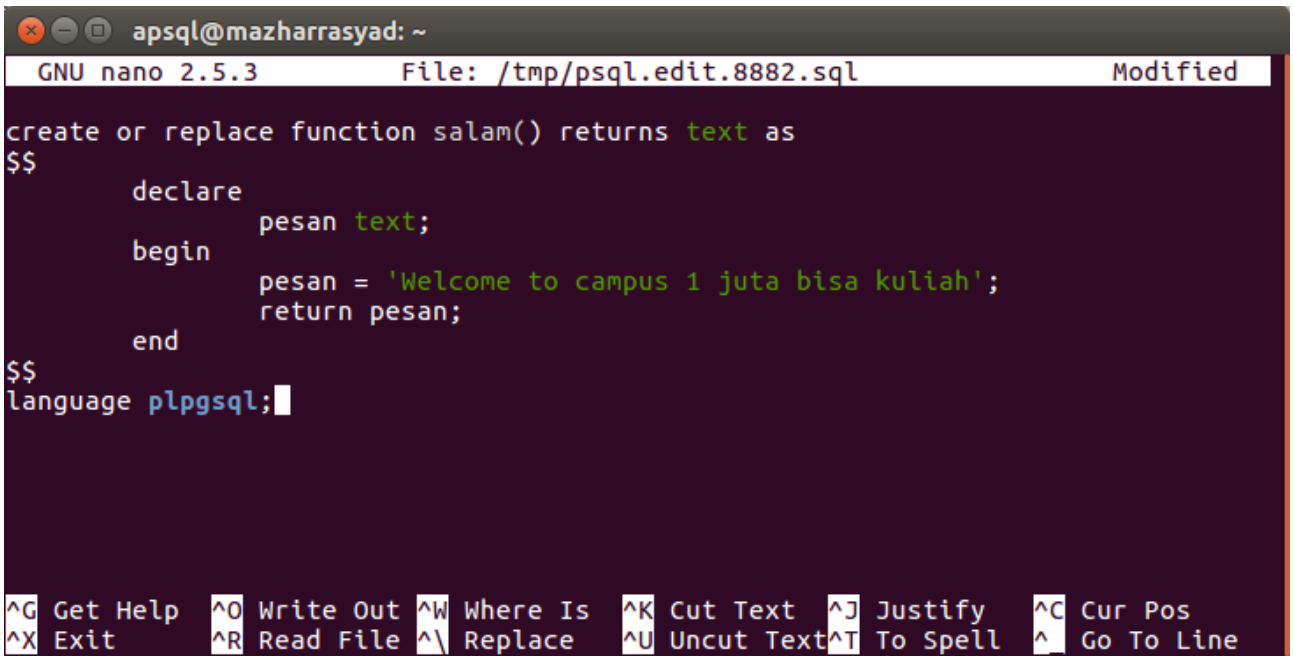
```
apsql@mazharrasyad: ~
dbpelatihan2=# select * from pg_language;
 lanname  | lanowner | lanispl | lanpltrusted | lanplcallfoid | laninline | lanvalidator | lanacl
----------+----------+---------+--------------+---------------+-----------+--------------+--------
 internal |       10 | f       | f            |             0 |         0 |         2246 |
 c        |       10 | f       | f            |             0 |         0 |         2247 |
 sql      |       10 | f       | t            |             0 |         0 |         2248 |
 plpgsql  |       10 | t       | t            |         12317 |     12318 |        12319 |
(4 rows)

dbpelatihan2=#
```

- **lanname** = Ada 4 programming language yang disupport postgresql
  - internal = Bahasa Internal
  - c = Bahasa C
  - sql = Bahasa SQL
  - plpgsql = Bahasa plpgsql
- **lanowner** = Pemilik dari language ditentukan dengan no id

- 10 = idnya bernomor 10

- **lanispl** = Memilih false untuk bahasa internal dan true untuk bahasa definisi user
  - f = False = Salah
  - t = True = Benar
- **lanpltrusted** = Memilih true untuk perintah normal dan false untuk perintah yang tidak normal seperti perintah superuser
  - f = False = Salah
  - t = True = Benar
- **lanplcallfoid** = Memanggil fungsi untuk dijalankan ditentukan dengan no id
- **laninline** = Mengeksekusi blok kode dalam baris dan jika inline 0 maka blok kode tidak didukung
- **lanvalidator** = Memeriksa syntax dan fungsi ketika dibuat dan jika validator 0 maka tidak ada validator yang disediakan
- **lanacl** = Menentukan akses privilage

5. Create function salam



6. Jalankan perintah \df

```
apsql@mazharrasyad: ~
dbpelatihan2=# \df
                          List of functions
 Schema | Name  | Result data type | Argument data types |  Type
--------+-------+------------------+---------------------+--------
 public | salam | text             |                     | normal
(1 row)

dbpelatihan2=#
```

7. Tampilkan function salam

```
apsql@mazharrasyad: ~
dbpelatihan2=# select salam();
               salam
-------------------------------------
 Welcome to campus 1 juta bisa kuliah
(1 row)

dbpelatihan2=#
```

8. Create function angka

```
apsql@mazharrasyad: ~
  GNU nano 2.5.3         File: /tmp/psql.edit.8882.sql                Modified

create or replace function angka() returns integer as
$$
        declare
                variable integer;
        begin
                variable = 10;
                return variable;
        end
$$
language plpgsql;



^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
```

```
apsql@mazharrasyad: ~
dbpelatihan2=# \e
CREATE FUNCTION
dbpelatihan2=#
```

9. Tampilkan function angka

```
apsql@mazharrasyad: ~
dbpelatihan2=# select angka();
 angka
-------
    10
(1 row)

dbpelatihan2=#
```

10. Jalankan perintah \df

```
apsql@mazharrasyad: ~
dbpelatihan2=# \df
                          List of functions
 Schema | Name  | Result data type | Argument data types |  Type
--------+-------+------------------+---------------------+--------
 public | angka | integer          |                     | normal
 public | salam | text             |                     | normal
(2 rows)

dbpelatihan2=#
```

11. Create function luas_segitiga

```
apsql@mazharrasyad: ~
 GNU nano 2.5.3          File: /tmp/psql.edit.8882.sql                Modified

create or replace function luas_segitiga(int, int) returns double precision as
$$
        declare
                luas double precision;
        begin
                luas = 0.5 * $1 * $2;
                return luas;
        end
$$
language plpgsql;



^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
```

```
apsql@mazharrasyad: ~
dbpelatihan2=# \e
CREATE FUNCTION
dbpelatihan2=#
```

12. Melihat function

```
apsql@mazharrasyad: ~
dbpelatihan2=# \df
                             List of functions
 Schema |     Name      | Result data type | Argument data types |  Type
--------+---------------+------------------+---------------------+--------
 public | angka         | integer          |                     | normal
 public | luas_segitiga | double precision | integer, integer    | normal
 public | salam         | text             |                     | normal
(3 rows)

dbpelatihan2=#
```

13. Tampilkan function luas_segitiga

```
apsql@mazharrasyad: ~
dbpelatihan2=# select luas_segitiga(4,7);
 luas_segitiga
---------------
            14
(1 row)

dbpelatihan2=#
```

14. Create function luas_trapesium

```
apsql@mazharrasyad: ~
  GNU nano 2.5.3           File: /tmp/psql.edit.8882.sql                Modified

create or replace function luas_trapesium(int, int, int) returns double precision as
$$
        declare
                luas double precision;
        begin
                luas = ($1 + $2) * $3 * 0.5;
                return luas;
        end
$$
language plpgsql;



^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
```

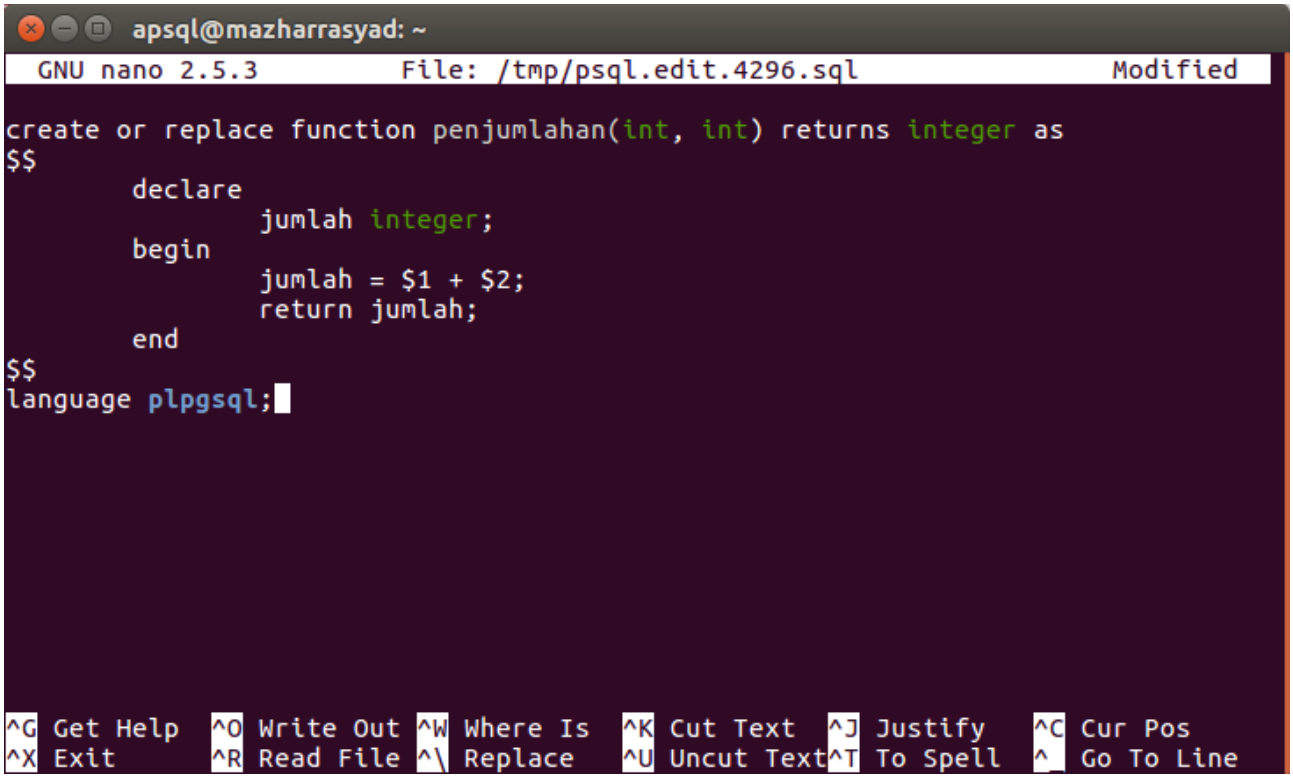
```
apsql@mazharrasyad: ~
dbpelatihan2=# \e
CREATE FUNCTION
dbpelatihan2=#
```

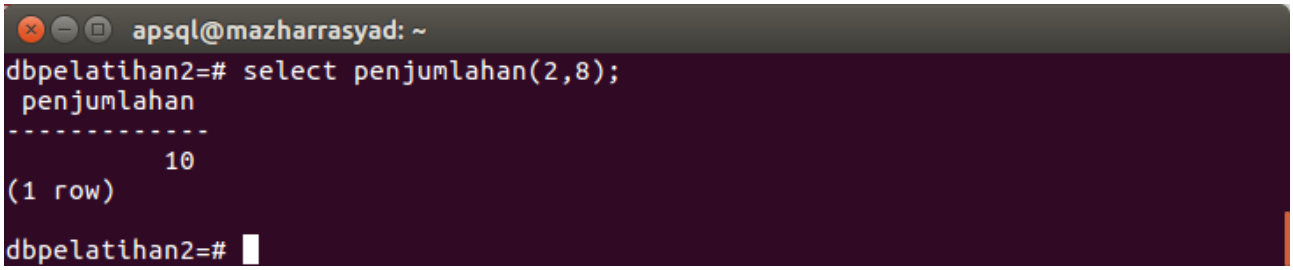
15. Tampilkan luas_trapesium

```
apsql@mazharrasyad: ~
dbpelatihan2=# select luas_trapesium(15,20,8);
 luas_trapesium
----------------
            140
(1 row)

dbpelatihan2=#
```

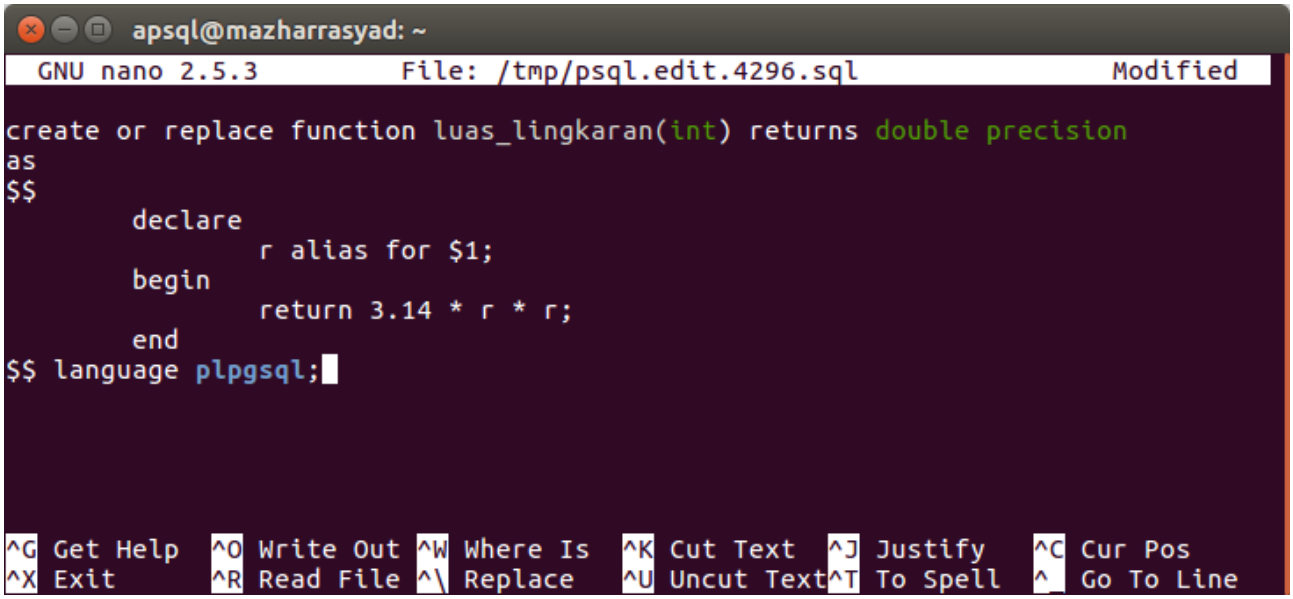
Praktikum Mandiri 1

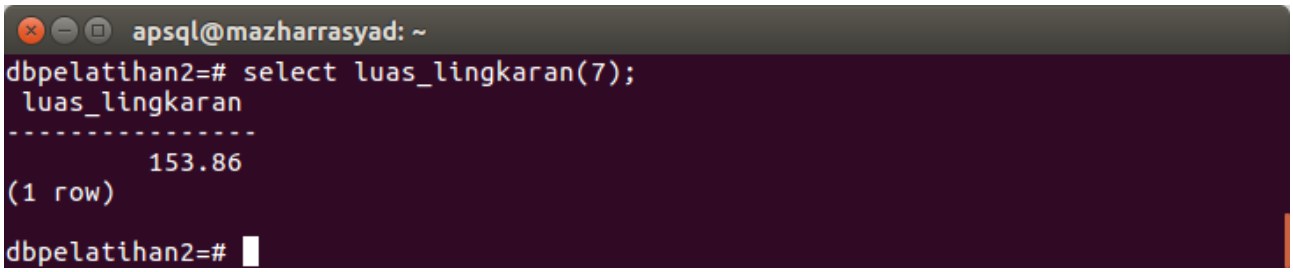
1. Buat fungsi penjumlahan dua bilangan dengan argumen bilangan integer





2. Buat fungsi untuk menghitung luas lingkaran





Percobaan 2 : Fungsi dengan LOGIKA IF

1. Create function hasil_ujian

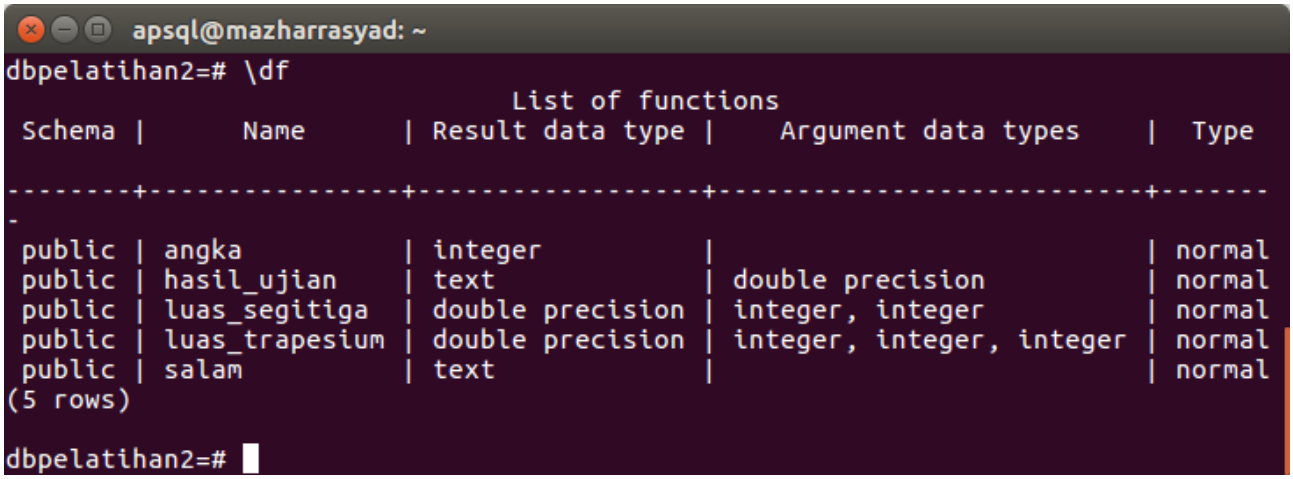
```
apsql@mazharrasyad: ~
  GNU nano 2.5.3          File: /tmp/psql.edit.10740.sql                Modified

create or replace function hasil_ujian(double precision) returns text as
$$
        declare
                nilai alias for $1;
        begin
                if nilai > 55 then return 'Lulus';
                else return 'Tidak Lulus';
                end if;
        end
$$
language plpgsql;

^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
```

```
apsql@mazharrasyad: ~
dbpelatihan2=# \e
CREATE FUNCTION
dbpelatihan2=#
```

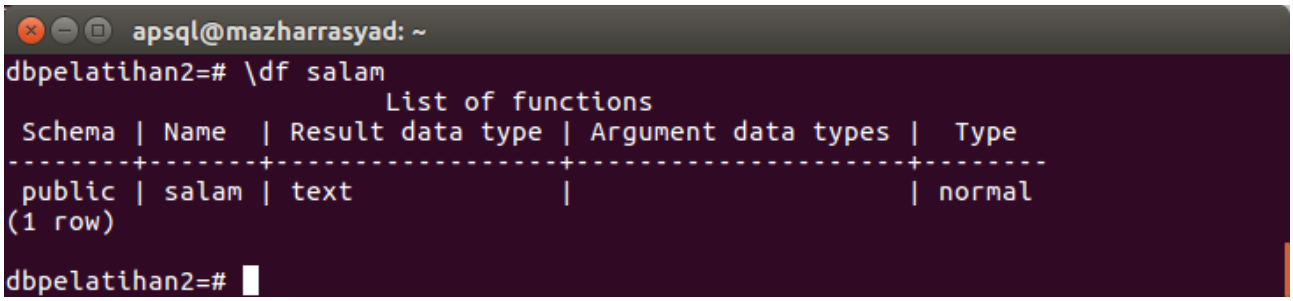
2. Tampilkan function hasil_ujian

```
apsql@mazharrasyad: ~
dbpelatihan2=# select hasil_ujian(60);
 hasil_ujian
-------------
 Lulus
(1 row)

dbpelatihan2=# select hasil_ujian(50);
 hasil_ujian
-------------
 Tidak Lulus
(1 row)

dbpelatihan2=#
```

3. Melihat list function

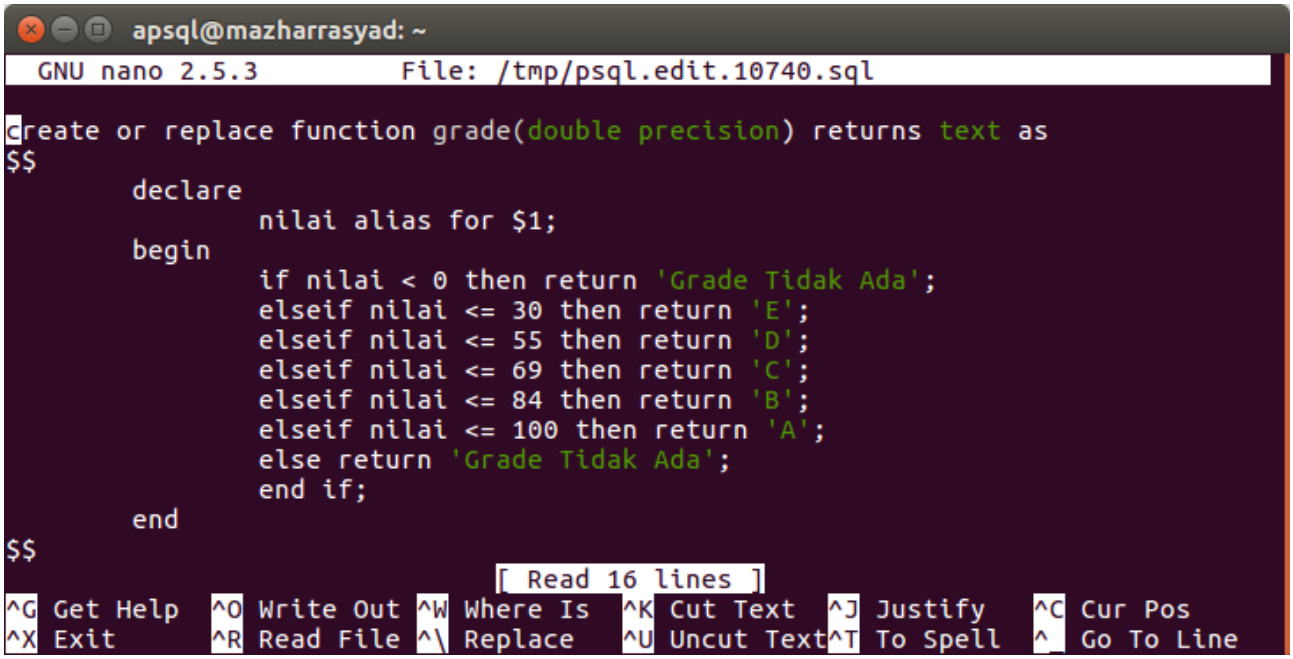


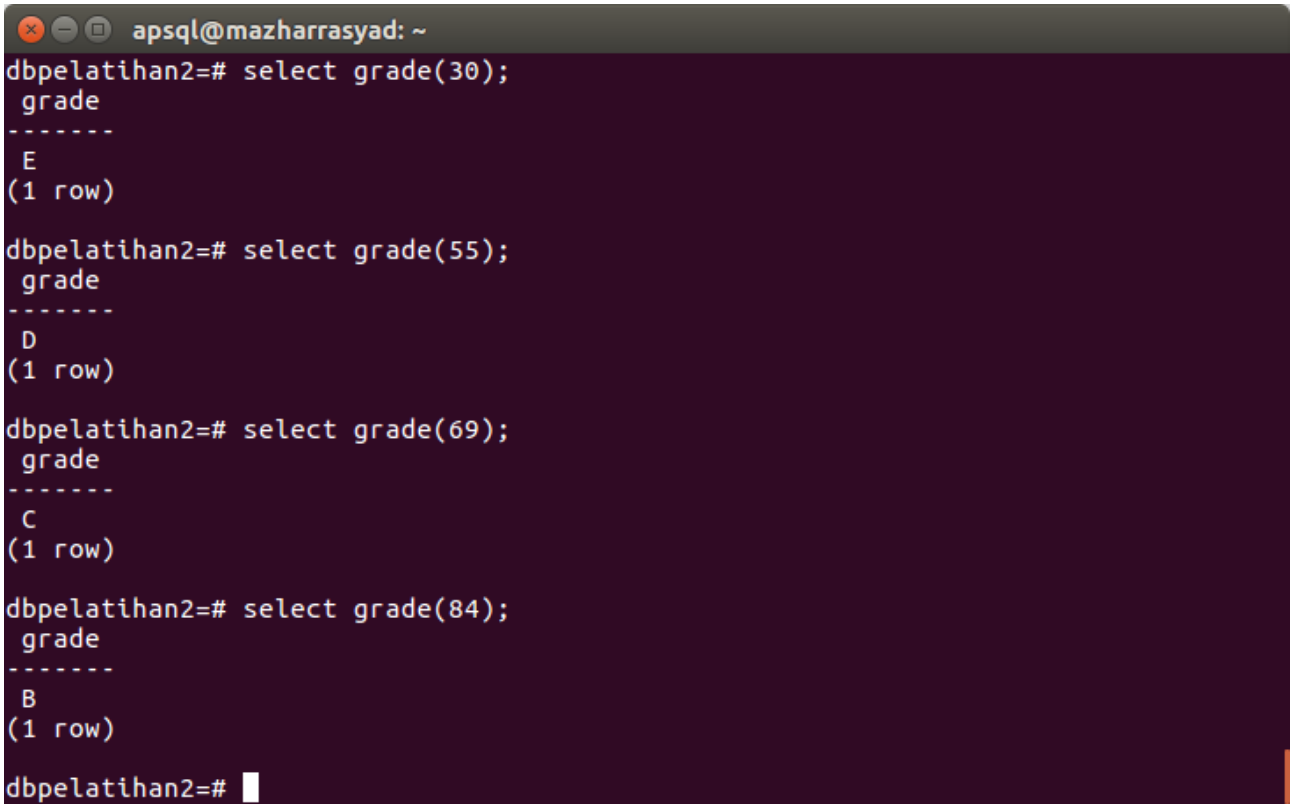
4. Melihat list function salam

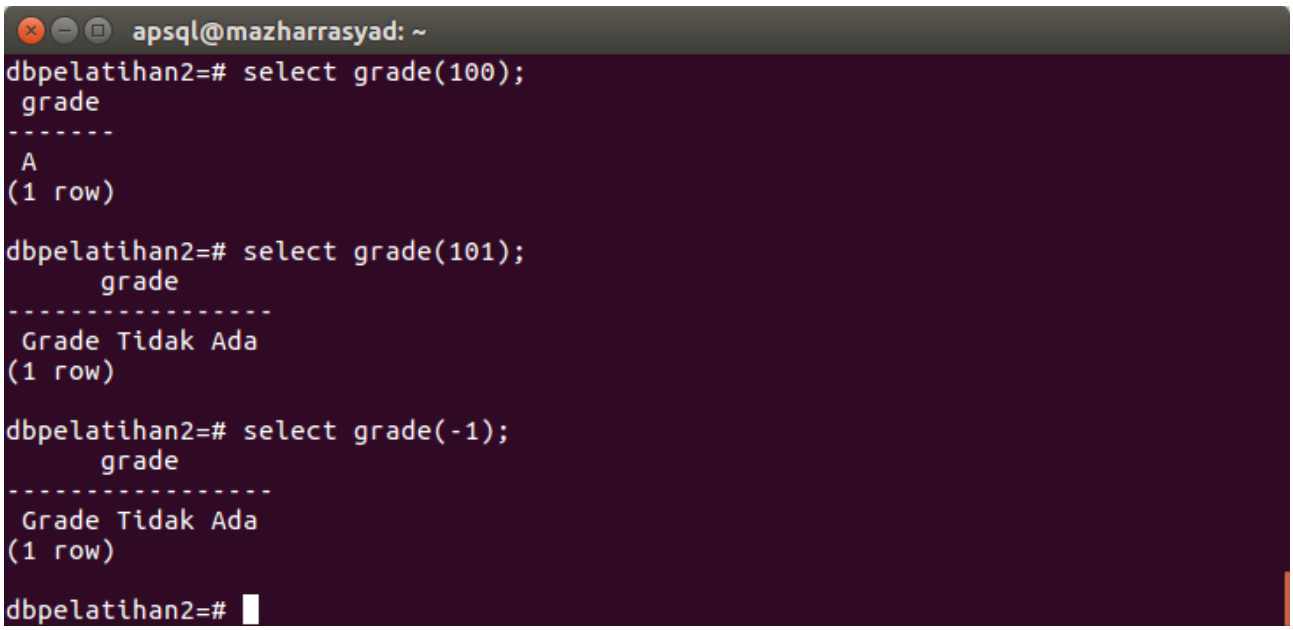


Praktikum Mandiri 2

1. Buatlah fungsi dengan nama ‘Grade’ untuk menghitung grade nilai siswa, dengan argumen nilai siswa bertipe bilangan pecahan dan ketentuan **GRADE** :






apsql@mazharrasyad: ~
dbpelatihan2=# select grade(100);
 grade

 A
(1 row)
dbpelatihan2=# select grade(101);
      grade

 Grade Tidak Ada
(1 row)
dbpelatihan2=# select grade(-1);
      grade

 Grade Tidak Ada
(1 row)
dbpelatihan2=#

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