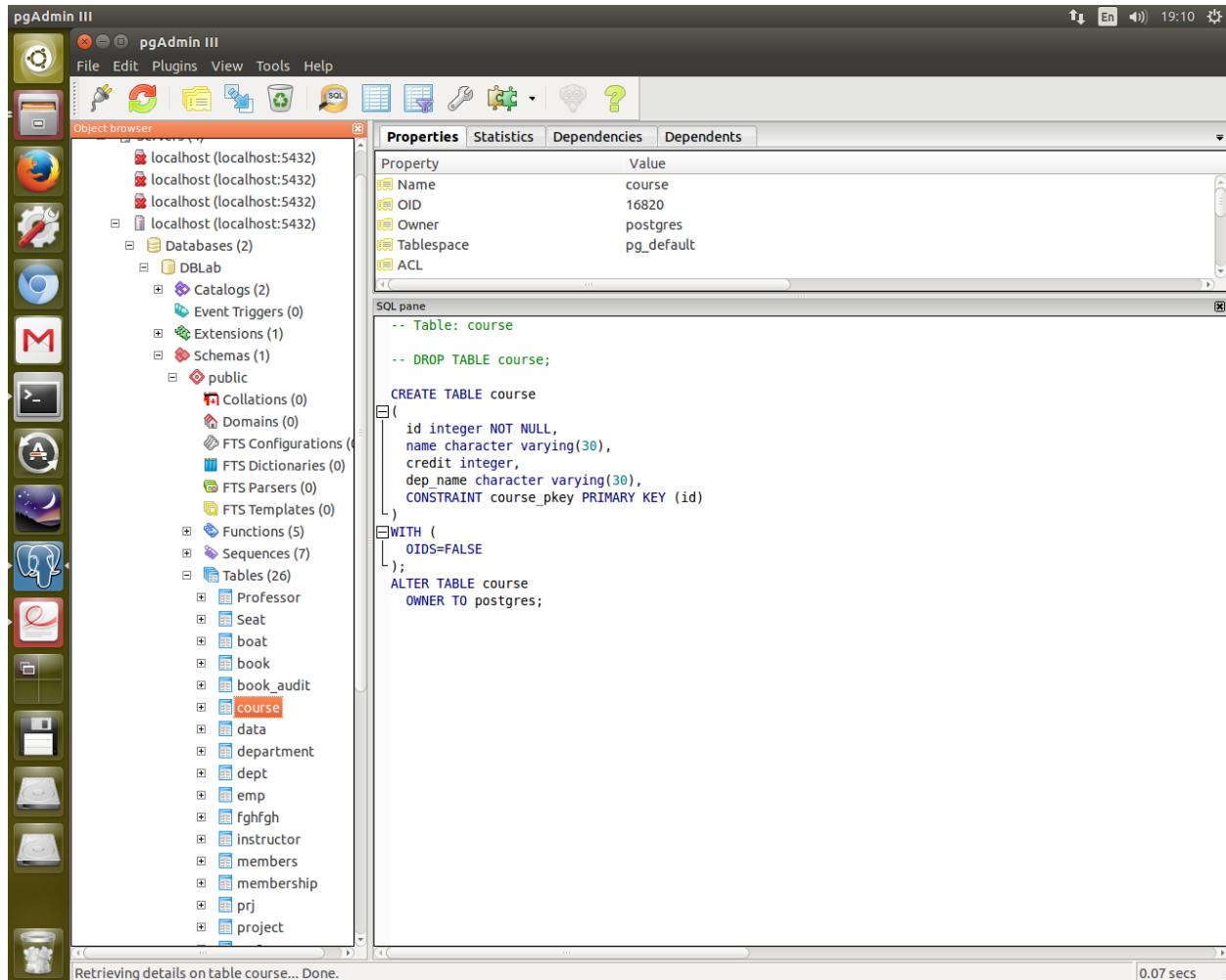


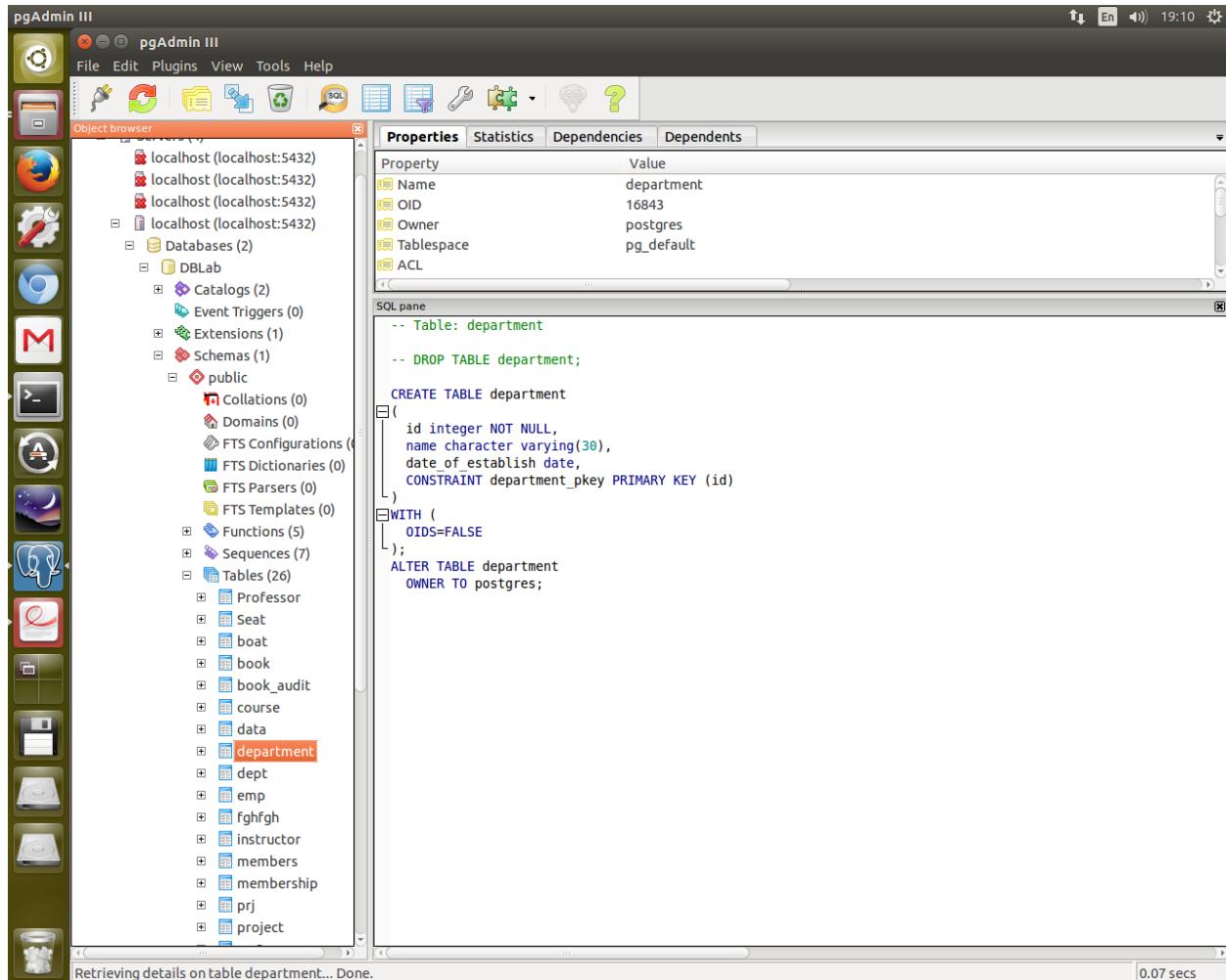
به نام خدا

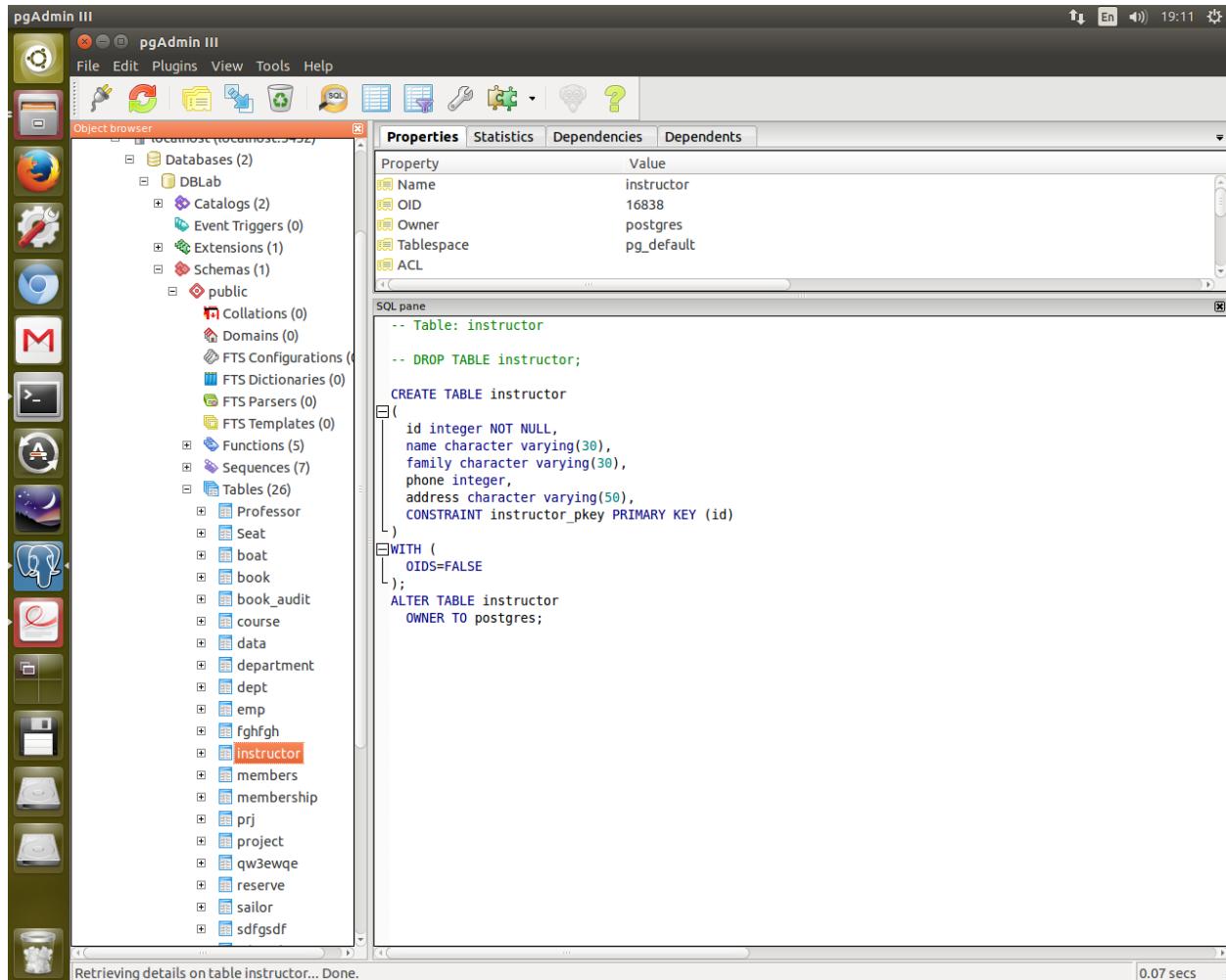
محمد مهدی آقاجانی

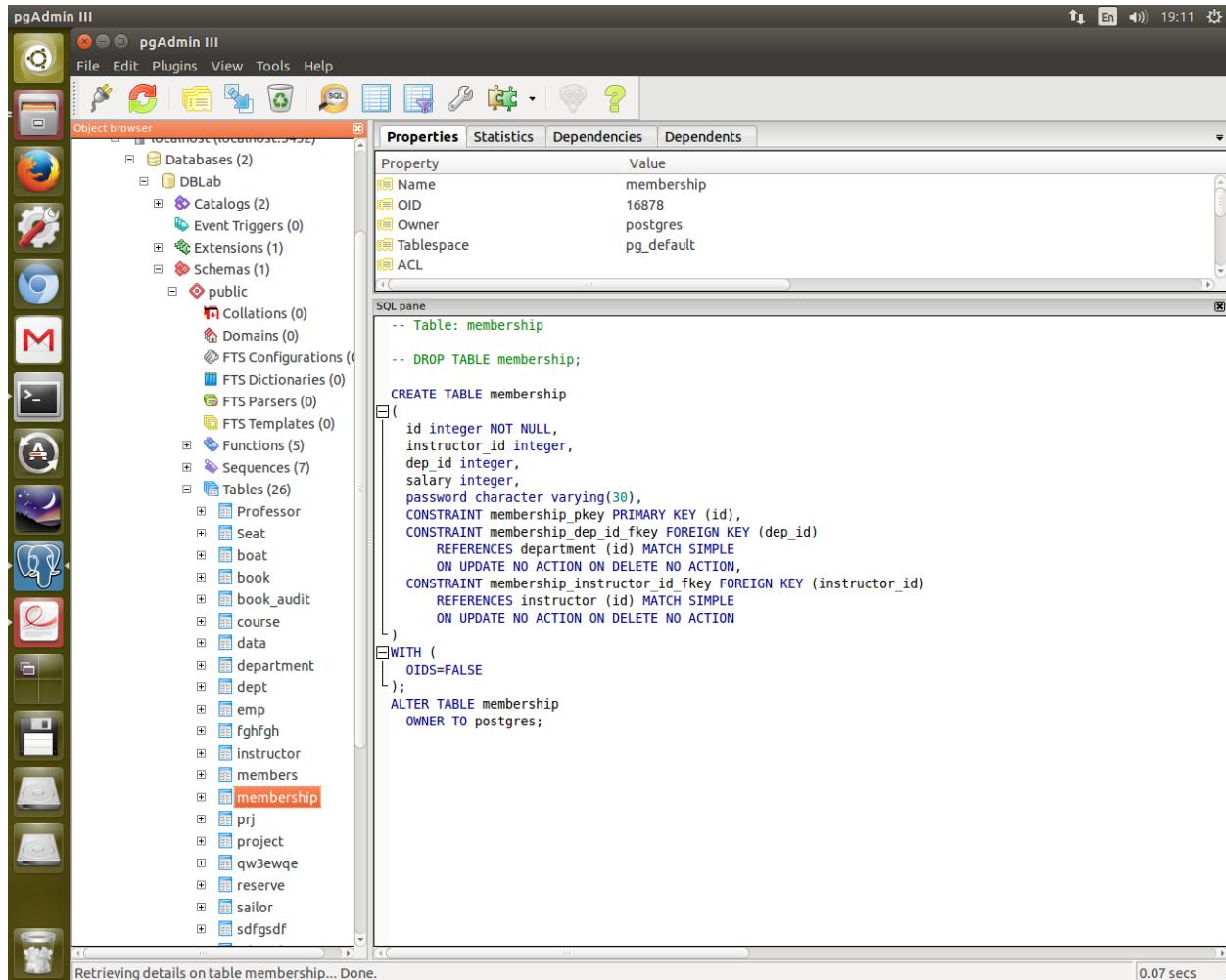
گزارش پنجم

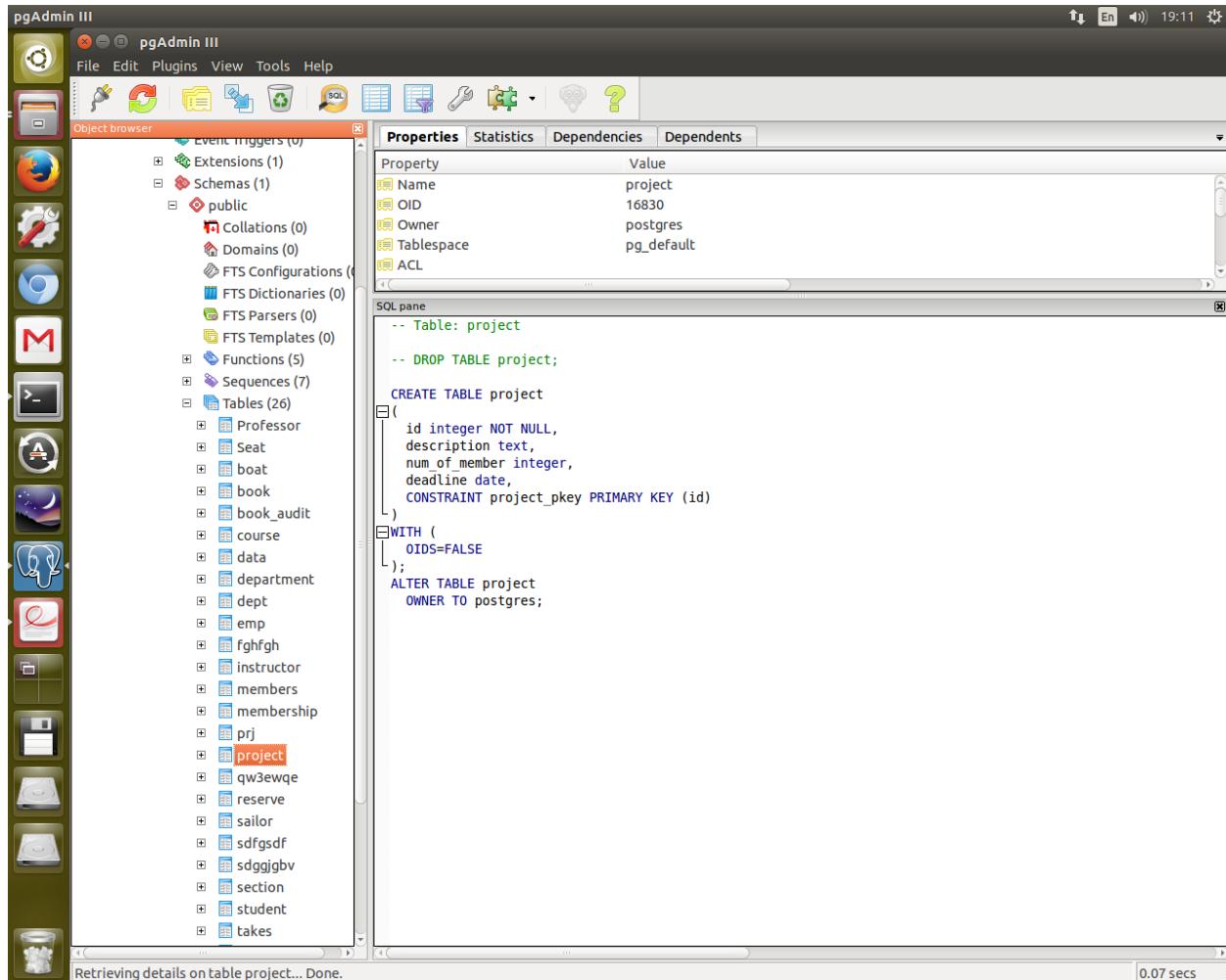
توجه : در ابتدا در طراحی جدول ها برخی ستون ها لحاظ نشده بودند(ستون های مربوط به روابط چند به یک . در واقع مهندسی نرم افزاری طراحی شده بود) ولی بعدا این جداول اصلاح شده اند و مابقی سوال ها با جداول صحیح پاسخ داده شده اند.

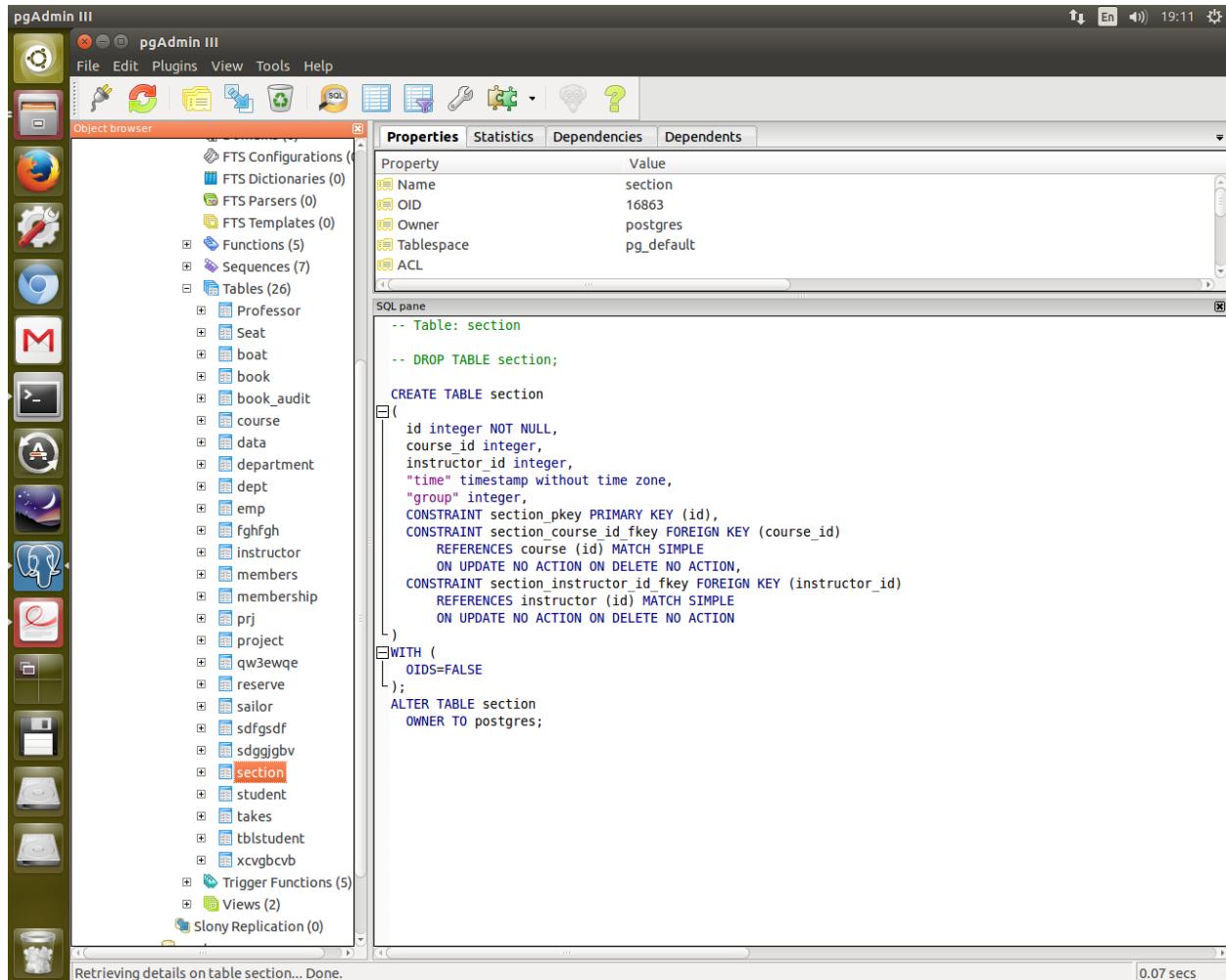


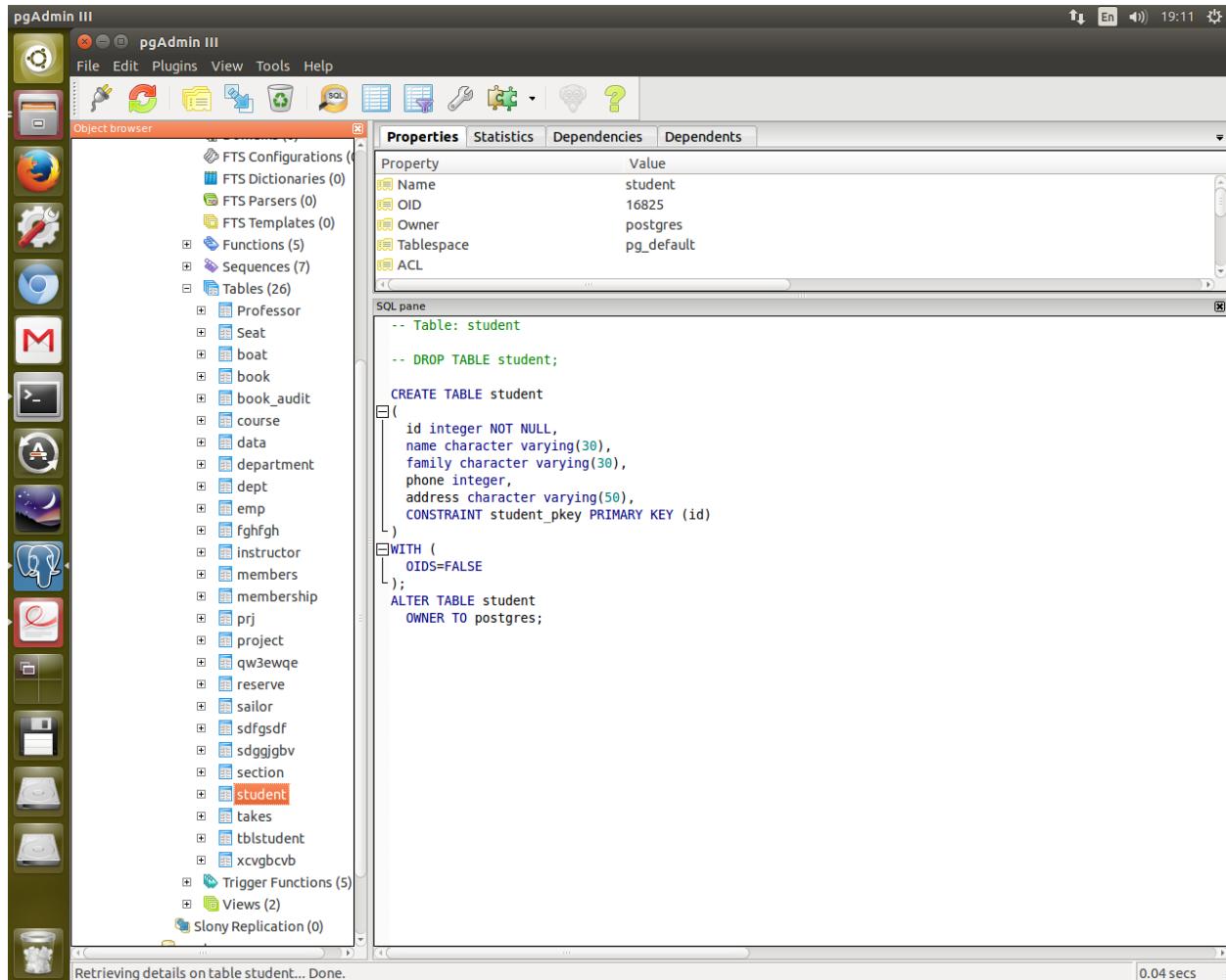


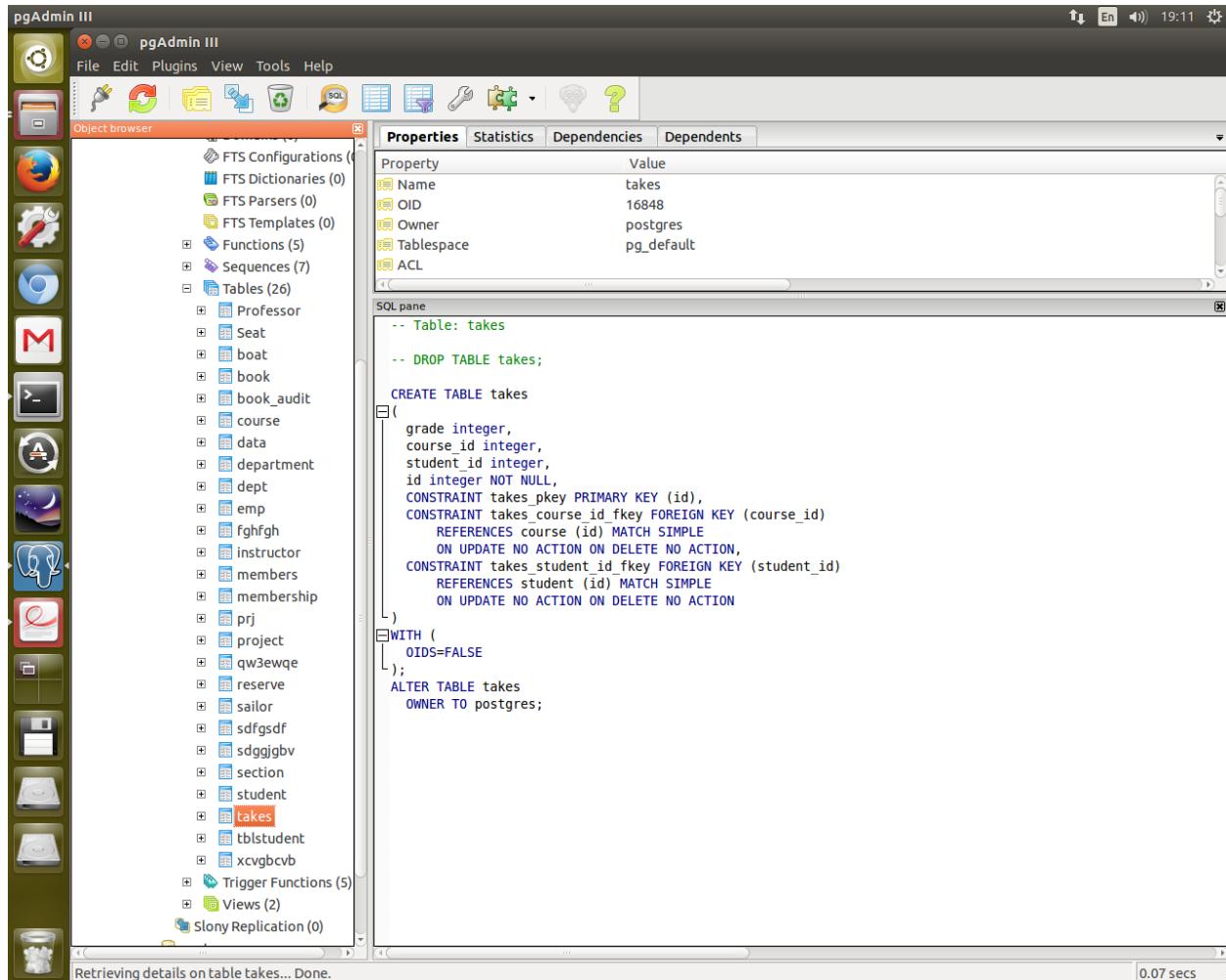












The screenshot shows the DBLab application window. The main area is the SQL Editor tab, which contains the following SQL code:

```
insert into instructor values( 1 , 'mammad' , 'mammadi' , '912502336' , 'azadi');
insert into instructor values( 2 , 'reza' , 'mammadi' , '912502336' , 'enghelab');
insert into instructor values( 3 , 'karim' , 'mammadi' , '912502336' , 'vali asr');
insert into membership values( 1 , 1 , 1 , 1000 , '1234');
insert into membership values( 2 , 2 , 1 , 2000 , '12345');
insert into membership values( 3 , 3 , 1 , 3000 , '123456');
```

The Output pane below shows the results of the execution:

```
Query returned successfully: one row affected, 22 ms execution time.
```

At the bottom of the Output pane, it says "One row affected." and provides some statistics: Unix | Ln 3, Col 68, Ch 233 | 22 ms.

Query - DBLab on postgres@localhost:5432 *

File Edit Query Favourites Macros View Help

SQL Editor Graphical Query Builder

Previous queries

```
select sum(salary)/count(*) from membership group by dep_id;
```

Scratch pad

Output pane

Data Output Explain Messages History

?column?	bigint
1	2000

OK. Unix Ln 1, Col 28, Ch 28 | 1 row. | 1 ms

The screenshot shows the DBLab application interface. In the SQL Editor tab, a query is run: "select sum(salary)/count(*) from membership group by dep_id;". The output pane displays the results in a table:

?column?	bigint
1	2000

The status bar at the bottom indicates "Unix Ln 1, Col 28, Ch 28" and "1 row. | 1 ms".

The screenshot shows the DBLab application interface. The main window has a title bar "Query - DBLab on postgres@localhost:5432 *". The menu bar includes File, Edit, Query, Favourites, Macros, View, and Help. A toolbar with various icons is visible above the main panes. The left pane is titled "SQL Editor" and contains a query editor with the following SQL code:

```
select sum(salary)/count(*) as average from membership group by dep_id having dep_id = 1;
```

The right pane is titled "Scratch pad" and is currently empty. Below the SQL editor is an "Output pane" tab bar with "Data Output" selected. The "Data Output" tab shows a single row of results:

	average	bigint
1	2000	

At the bottom of the interface, there is a status bar with the text "OK.", "Unix Ln 1, Col 40, Ch 40", "1 row.", and "14 ms".

The screenshot shows the DBLab application interface for PostgreSQL. The main window has a toolbar at the top with various icons for file operations, database management, and help. Below the toolbar is a menu bar with File, Edit, Query, Favourites, Macros, View, and Help. The central area contains two panes: the SQL Editor pane on the left and a Scratch pad pane on the right. The SQL Editor pane displays a series of SQL INSERT statements for populating three tables: course, student, and takes. The student table includes columns for student ID (0123), name (ali, reza, naghi, karim, kourosh, mammad), and course ID (tajrish). The takes table includes columns for student ID (0123), course ID (tajrish), grade (1 through 10), and a timestamp column. The Output pane at the bottom shows the message "Query returned successfully: one row affected, 22 ms execution time." and "One row affected." The status bar at the bottom right indicates "Unix Ln 2, Col 52, Ch 107" and "22 ms".

```

insert into course values(1 , 'riazi' , 3 , 'riazi');
insert into course values(2 , 'fizik' , 3 , 'fizik');
insert into student values( 1 , 'ali' , 'alavi' , '0123' , 'tajrish' );
insert into student values( 2 , 'reza' , 'alavi' , '0123' , 'tajrish' );
insert into student values( 3 , 'naghi' , 'alavi' , '0123' , 'tajrish' );
insert into student values( 4 , 'karim' , 'alavi' , '0123' , 'tajrish' );
insert into student values( 5 , 'kourosh' , 'alavi' , '0123' , 'tajrish' );
insert into student values( 6 , 'mammad' , 'alavi' , '0123' , 'tajrish' );
insert into takes values( 10 , 1 , 1 , 1);
insert into takes values( 10 , 1 , 2 , 2);
insert into takes values( 10 , 1 , 3 , 3);
insert into takes values( 10 , 1 , 4 , 4);
insert into takes values( 10 , 2 , 1 , 5);
insert into takes values( 10 , 2 , 2 , 6);
insert into takes values( 10 , 2 , 3 , 7);
insert into takes values( 10 , 2 , 4 , 8);
insert into takes values( 10 , 2 , 5 , 9);
insert into takes values( 10 , 2 , 6 , 10);

```

Query - DBLab on postgres@localhost:5432 *

File Edit Query Favourites Macros View Help

SQL Editor Graphical Query Builder

Previous queries

```
select count(*) from ( select count(*) as counter from takes group by course_id) as table where counter < 5;
```

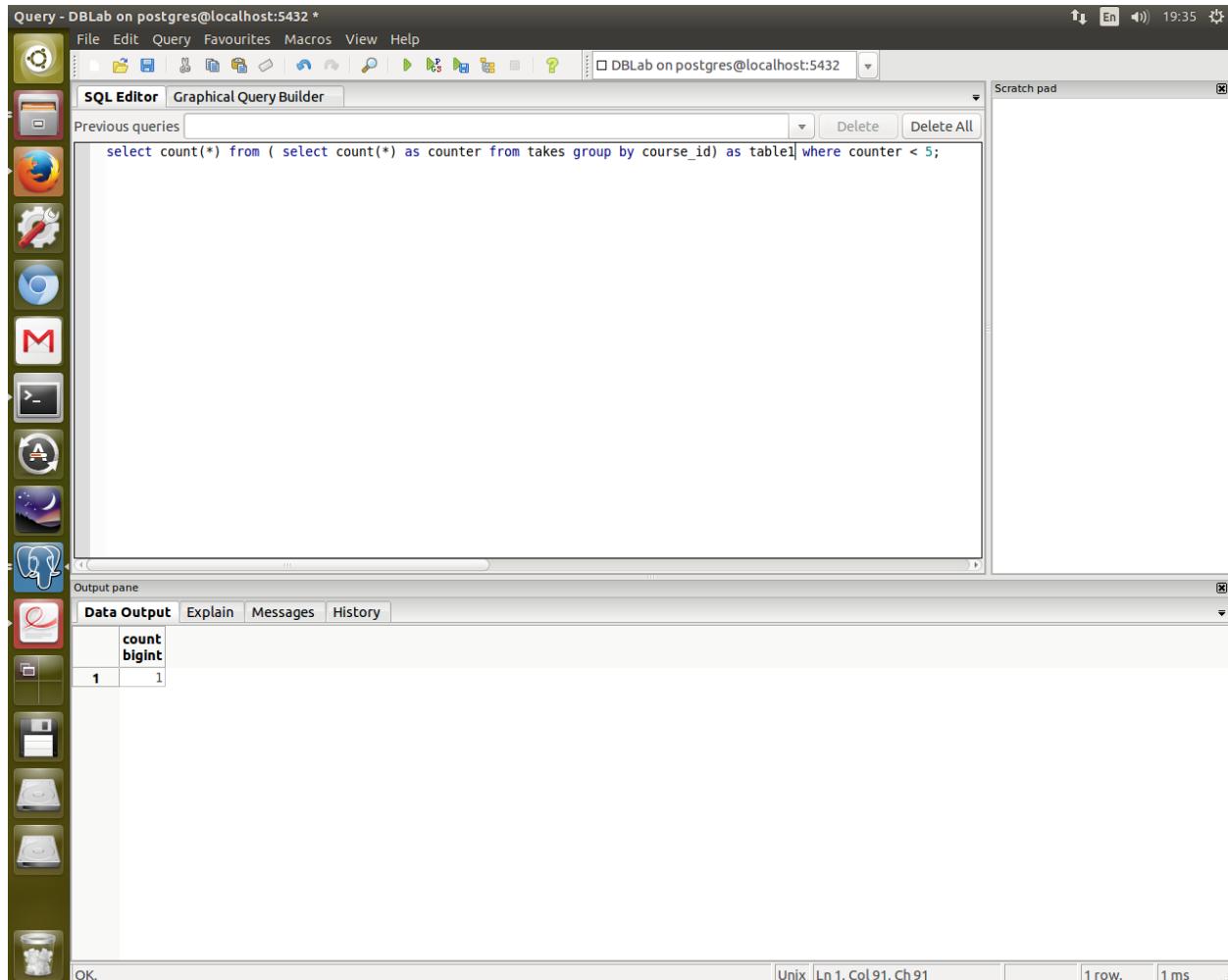
Scratch pad

Output pane

Data Output Explain Messages History

	count	bigint
1	1	

OK. Unix Ln 1, Col 91, Ch 91 | 1 row. | 1 ms

A screenshot of the DBLab application interface. The main window has a dark header bar with the title 'Query - DBLab on postgres@localhost:5432 *' and various menu options like File, Edit, Query, Favourites, Macros, View, and Help. Below the header is a toolbar with icons for file operations like Open, Save, Print, and Database management. The central area contains two panes: 'SQL Editor' on the left and 'Graphical Query Builder' on the right. The SQL Editor pane shows a query: 'select count(*) from (select count(*) as counter from takes group by course_id) as table where counter < 5;'. The Graphical Query Builder pane is currently empty. To the right of the editors is a 'Scratch pad' window. At the bottom of the interface is an 'Output pane' containing a table with one row. The table has three columns: an empty column, a column labeled 'count' with type 'bigint', and a column with the value '1'. Below the table, status information is displayed: 'OK.', 'Unix', 'Ln 1, Col 91, Ch 91', '1 row.', and '1 ms'. On the far left, there is a vertical toolbar with several icons representing different database management functions.

The screenshot shows the DBLab application window. The main area is the SQL Editor, which contains the following SQL code:

```
select * from view1;
create view view1 as
select distinct(instructor.id) , instructor.name as instructor_name , instructor.family ,
instructor.phone , instructor.address , department.name from instructor , membership , department ;
```

In the Output pane, there are error messages:

```
ERROR: relation "view1" already exists
*****
ERROR: relation "view1" already exists
SQL state: 42P07
```

At the bottom of the Output pane, there is a status bar with the text: "ERROR: relation "view1" already exists SQL state: 42P07 Unix Ln 1, Col 21, Ch 21 14 ms".

Query - DBLab on postgres@localhost:5432 *

File Edit Query Favourites Macros View Help

SQL Editor Graphical Query Builder

Previous queries Delete Delete All

```
select * from view1;
```

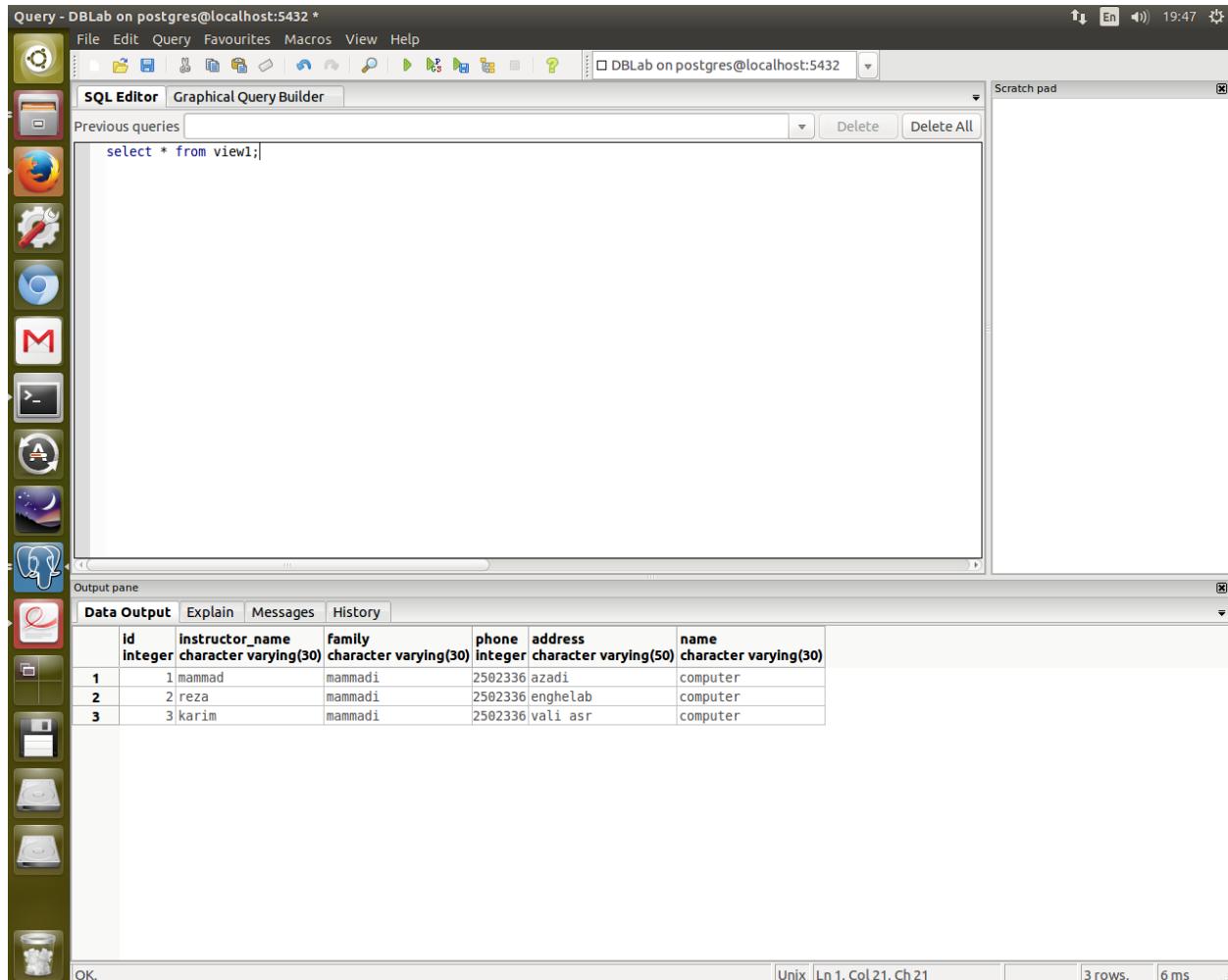
Scratch pad

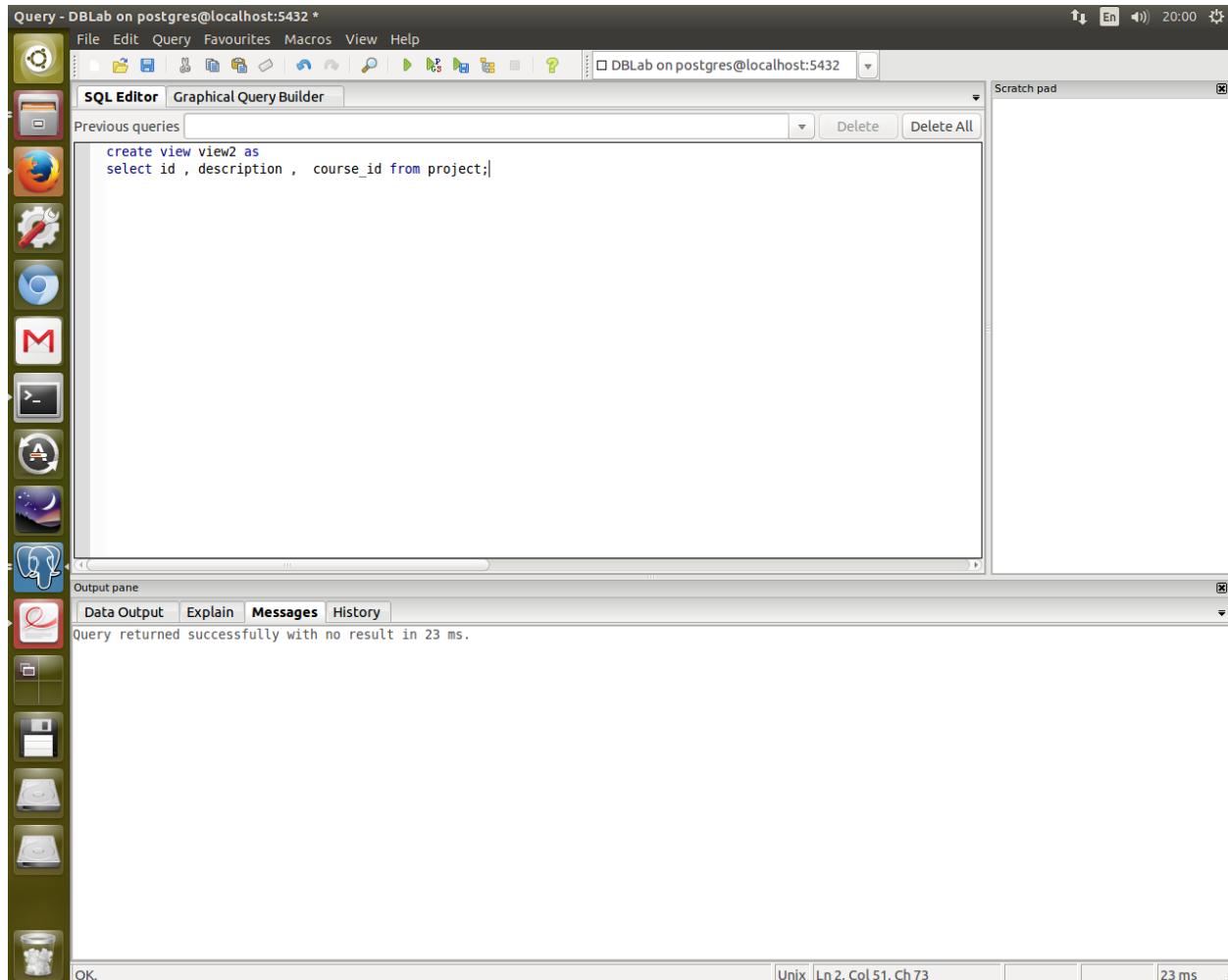
Output pane

Data Output Explain Messages History

	id integer	instructor_name character varying(30)	family character varying(30)	phone integer	address character varying(50)	name character varying(30)
1	1	mammad	mammadi	2502336	azadi	computer
2	2	reza	mammadi	2502336	enghelab	computer
3	3	karim	mammadi	2502336	vali asr	computer

OK. Unix Ln 1, Col 21, Ch 21 | 3 rows. | 6 ms





The screenshot shows the DBLab application interface. The top bar displays "Query - DBLab on postgres@localhost:5432 *". The menu bar includes File, Edit, Query, Favourites, Macros, View, Help, and a language switch (En). The toolbar contains various icons for file operations like Open, Save, Print, and Database management.

SQL Editor: This pane contains the following PostgreSQL function code:

```

create or replace function func1 ( i int ) returns varchar(30) as $status$
declare status varchar(30);
declare temp_15 integer;
declare temp_num integer;
begin
    select count(*) from takes where grade < 15 and course_id = i into temp_15;
    select count(*) from takes where course_id = i into temp_num;
    if temp_num > temp_15 * 2 then
        status := 'good';
    else
        status := 'bad';
    end if;
    return status;
end
$status$ language plpgsql;
select * from takes;
select func1(2);

```

Data Output: This pane shows the result of the function call:

	func1	character varying
1	good	

At the bottom, status information is displayed: Unix | Ln 11, Col 16, Ch 371 | 1 row. | 24 ms.

The screenshot shows the DBLab application interface for PostgreSQL. The main window has a toolbar at the top with various icons for file operations, navigation, and help. Below the toolbar is a menu bar with File, Edit, Query, Favourites, Macros, View, and Help. The central area contains two panes: the SQL Editor pane on the left and a Scratch pad pane on the right. The SQL Editor pane displays the following PostgreSQL code:

```

create or replace function func2 ( i int ) returns real as $avg$
declare avg real;
declare temp_15 integer;
declare temp_num integer;
begin
    select AVG(grade) from takes group by student_id having student_id = i into avg;
    return avg;
end
$avg$ language plpgsql;
select func2(1);

```

The Scratch pad pane is currently empty. Below the SQL Editor is an Output pane with tabs for Data Output, Explain, Messages, and History. The Data Output tab is selected, showing the results of the function call:

	func2	real
1		15

At the bottom of the interface, there is a status bar with the text "OK.", "Unix Ln 2, Col 17, Ch 82", "1 row.", and "47 ms".

The screenshot shows the DBLab application interface for PostgreSQL. The main window has a toolbar at the top with various icons for file operations, navigation, and help. Below the toolbar is a menu bar with File, Edit, Query, Favourites, Macros, View, and Help. The central area contains two panes: the SQL Editor pane on the left and a Scratch pad pane on the right. The SQL Editor pane displays the following PostgreSQL code:

```

create or replace function func2 ( i int ) returns real as $avg$
declare avg real;
declare temp_15 integer;
declare temp_num integer;
begin
    select AVG(grade) from takes group by student_id having student_id = i into avg;
    return avg;
end
$avg$ language plpgsql;
select func2(1);

```

The Scratch pad pane is currently empty. Below the SQL Editor is an Output pane with tabs for Data Output, Explain, Messages, and History. The Data Output tab is selected, showing the results of the query execution:

	func2	real
1		15

At the bottom of the interface, there is a status bar with the text "OK.", followed by "Unix Ln 10, Col 17, Ch 278", "1 row.", and "12 ms".

The screenshot shows the DBLab application window. The top menu bar includes File, Edit, Query, Favourites, Macros, View, and Help. The title bar indicates "Query - DBLab on postgres@localhost:5432 *". The main area has two panes: "SQL Editor" on the left containing the query code, and "Scratch pad" on the right which is currently empty. Below these is the "Output pane" with tabs for Data Output, Explain, Messages, and History. The "Data Output" tab is selected, displaying a table with 8 rows of data. The table has columns: old date, new date, datetime, and id. The data is as follows:

	old date	new date	datetime	id
	date	date	datetime	integer
1	2017	2017	2017-05-01	66
2	2017	2017	2017-05-01	67
3	2017	2017	2017-05-01	68
4	2017	2017	2017-05-01	69
5	2017	2017	2017-05-01	70
6	2017	2017	2017-05-01	71
7	2017	2017	2017-05-01	72
8	2017	2017	2017-05-01	73

At the bottom of the output pane, status information is shown: Unix | Ln 2, Col 22, Ch 66 | 8 rows. | 13 ms.

The screenshot shows the DBLab SQL Editor interface. The main window displays the following PostgreSQL code:

```
create or replace function myfunc() returns trigger as $$  
begin  
insert into report values ( OLD.deadline , NEW.deadline , current_date);  
return NEW;  
end  
$$ language plpgsql;  
  
create trigger myTrigger after update of deadline on project for each row  
execute procedure myfunc();
```

In the Output pane, three error messages are visible:

- ERROR: trigger "mytrigger" for relation "project" already exists
- ***** Error *****
- ERROR: trigger "mytrigger" for relation "project" already exists
SQL state: 42710

The status bar at the bottom right indicates "Unix Ln 2, Col 1, Ch 2" and "15 ms".

