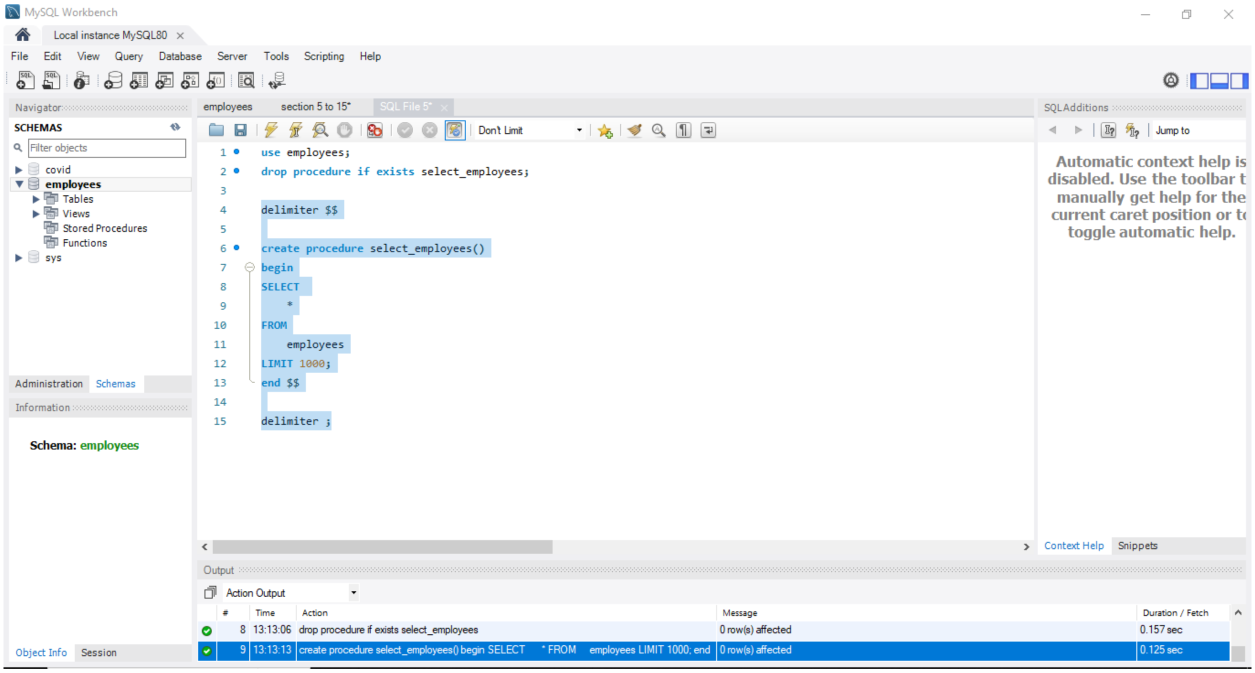
SECTION 18

We need to create a stored procedure.

Devise a non-parametric procedure that whenever applied will return the first 1000 rows from the employees table.



```
use employees;
drop procedure if exists select_employees;

delimiter $$

create procedure select_employees()
begin
SELECT
    *
FROM
    employees
LIMIT 1000;
end $$

delimiter ;
```

#	Time	Action	Message	Duration / Fetch
8	13:13:06	drop procedure if exists select_employees	0 row(s) affected	0.157 sec
9	13:13:13	create procedure select_employees() begin SELECT * FROM employees LIMIT 1000; end	0 row(s) affected	0.125 sec

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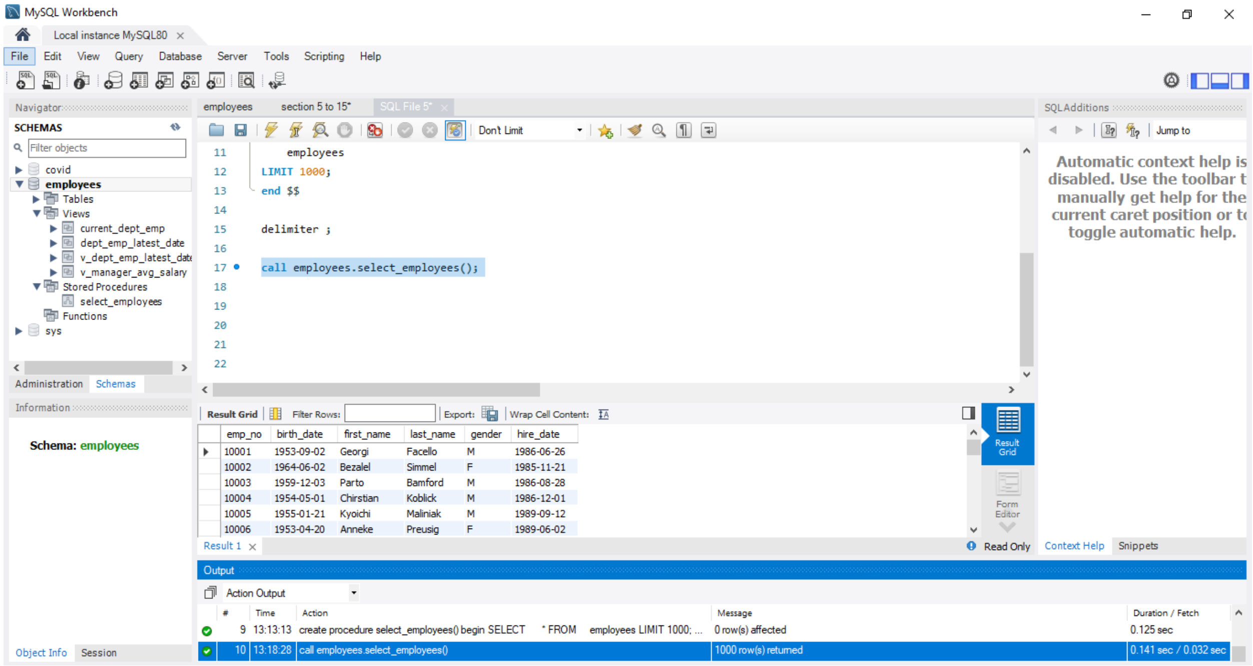
Action Output

We can invoke this procedure by:



```
    employees
LIMIT 1000;
end $$

delimiter ;

call employees.select_employees();
```

emp_no	birth_date	first_name	last_name	gender	hire_date
10001	1953-09-02	Georgi	Facello	M	1986-06-26
10002	1964-06-02	Bezalel	Simmel	F	1985-11-21
10003	1959-12-03	Parto	Bamford	M	1986-08-28
10004	1954-05-01	Chirstian	Koblick	M	1986-12-01
10005	1955-01-21	Kyoichi	Maliniak	M	1989-09-12
10006	1953-04-20	Anneke	Preusig	F	1989-06-02

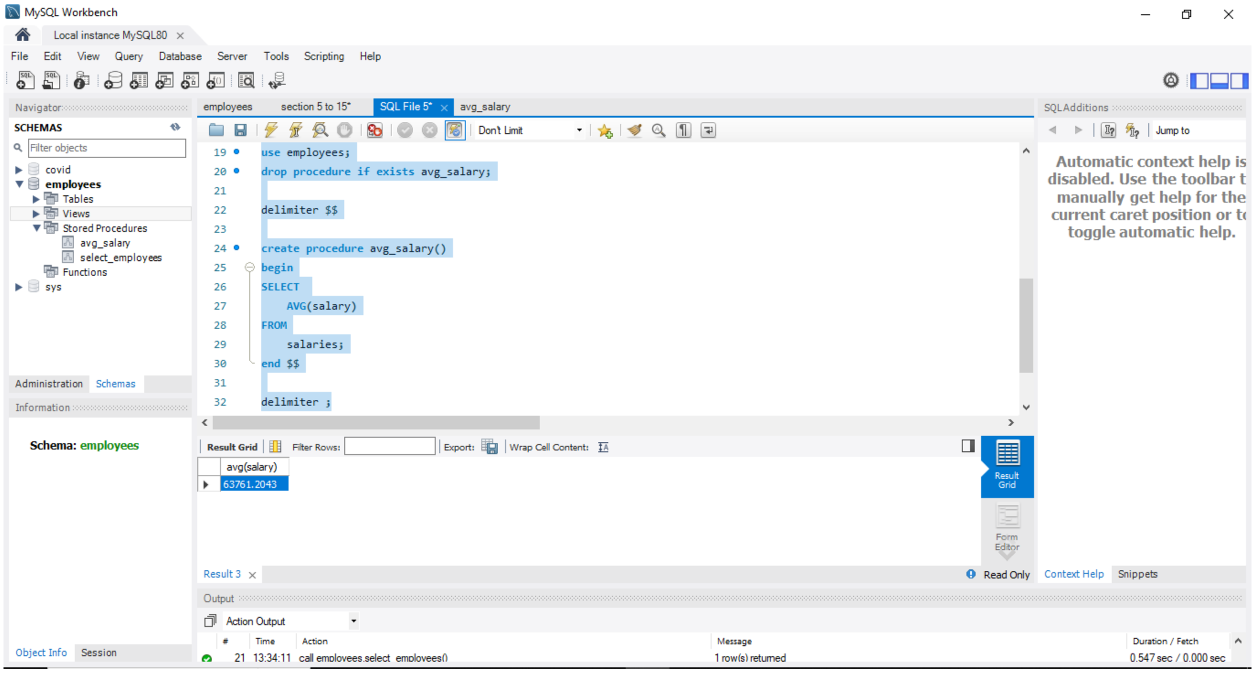
#	Time	Action	Message	Duration / Fetch
9	13:13:13	create procedure select_employees() begin SELECT * FROM employees LIMIT 1000; ...	0 row(s) affected	0.125 sec
10	13:18:28	call employees.select_employees()	1000 row(s) returned	0.141 sec / 0.032 sec

Exercise:

Create a procedure that will provide the average salary of all employees.

Then, call the procedure.

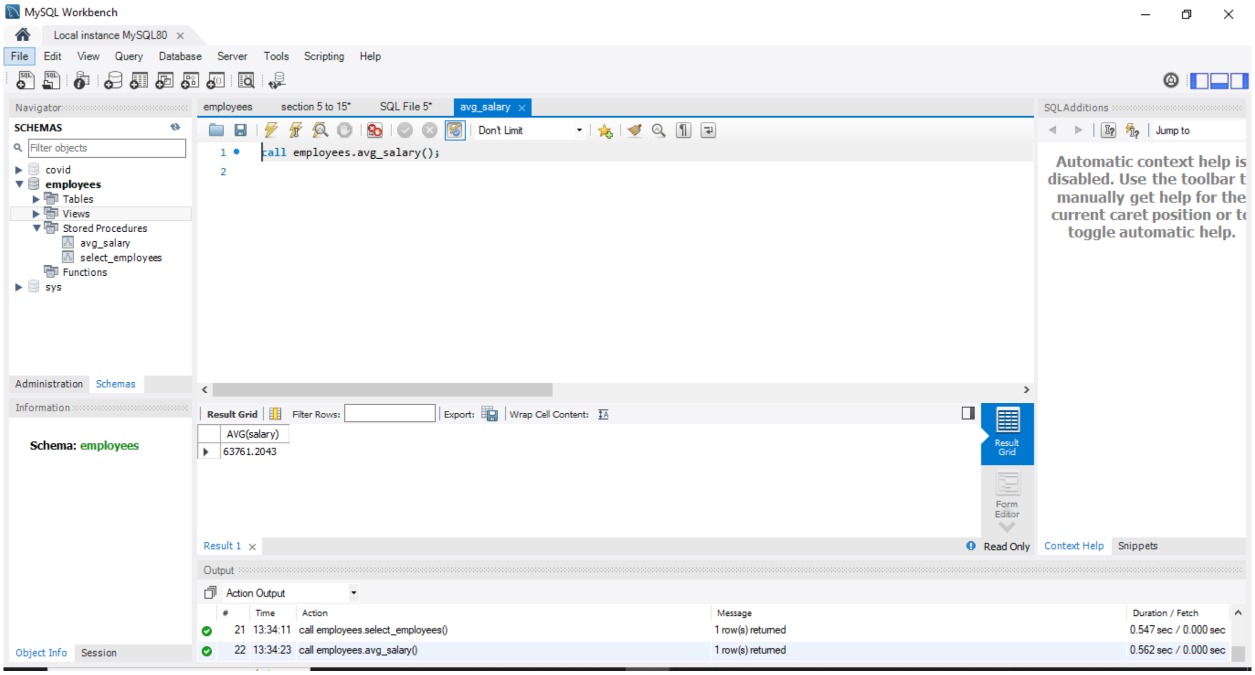
Solution:



```
use employees;
drop procedure if exists avg_salary;

delimiter $$

create procedure avg_salary()
begin
SELECT
    AVG(salary)
FROM
    salaries;
end $$

delimiter ;
```

avg(salary)
63761.2043

```
#   Time      Action                          Message              Duration / Fetch
21  13:34:11  call employees.select_employees()  1 row(s) returned  0.547 sec / 0.000 sec
```



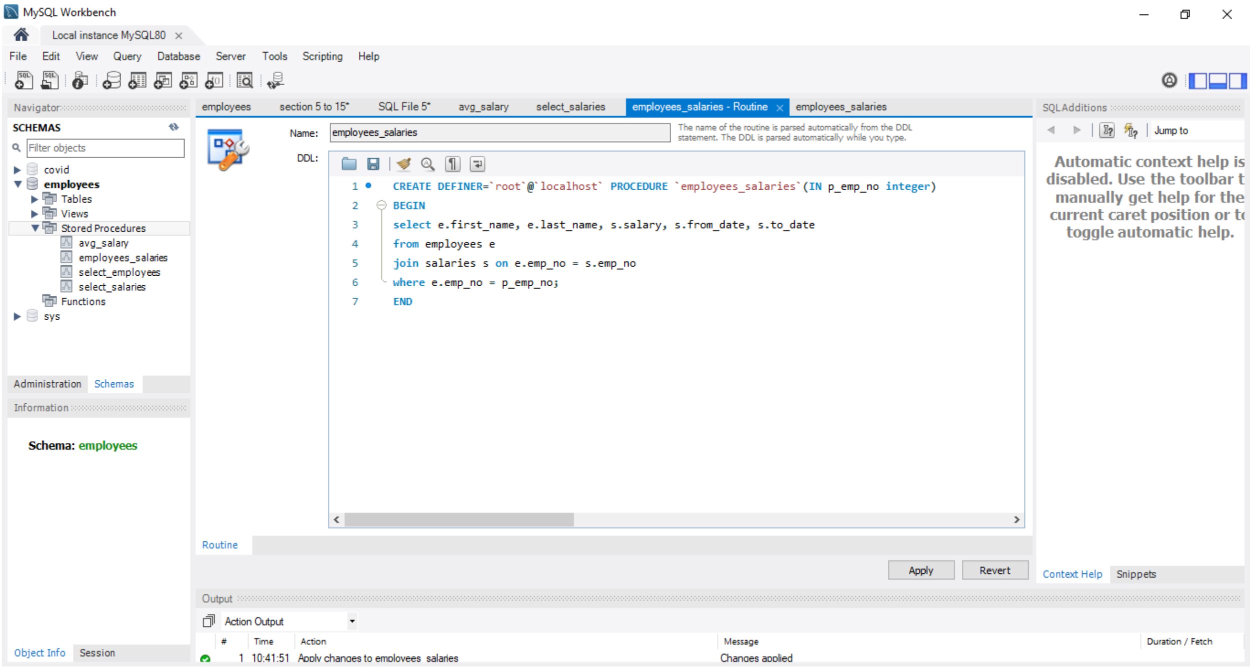
```
call employees.avg_salary();
```

AVG(salary)
63761.2043

```
#   Time      Action                             Message            Duration / Fetch
21  13:34:11  call employees.select_employees()  1 row(s) returned  0.547 sec / 0.000 sec
22  13:34:23  call employees.avg_salary()        1 row(s) returned  0.562 sec / 0.000 sec
```

Stored Procedure with an IN Parameter

We created a new stored procedure using IN parameter, giving us employees salaries and their full names. See below:



Schema: employees

Name: employees_salaries

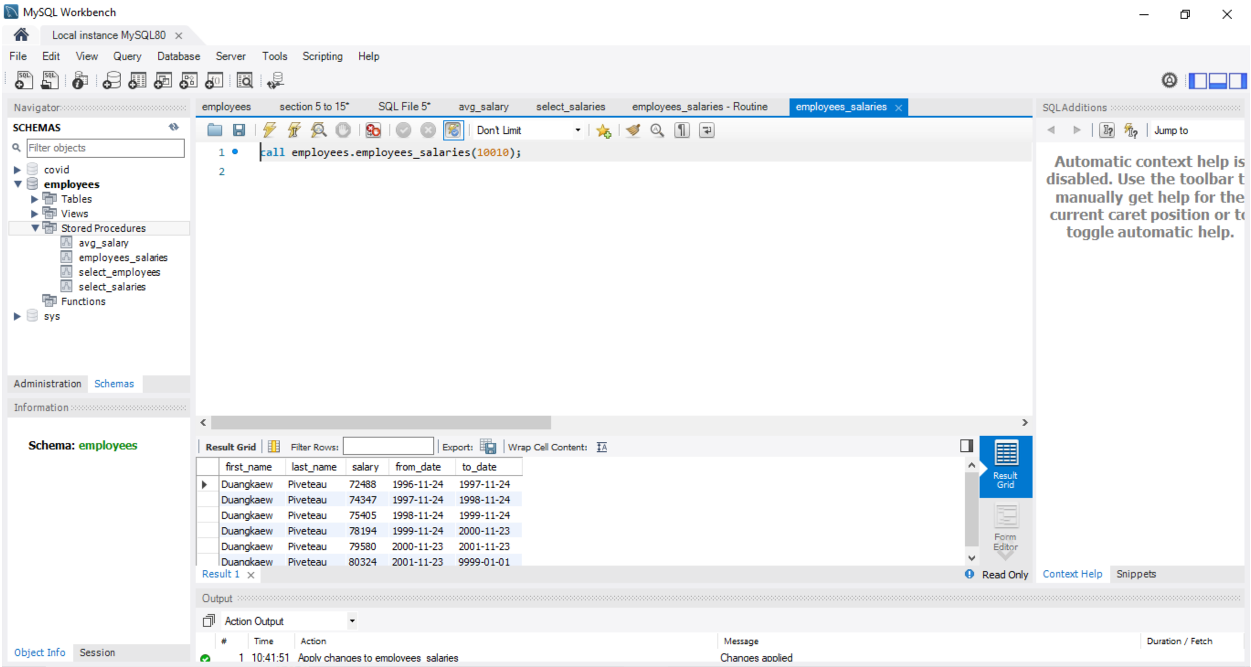
The name of the routine is parsed automatically from the DDL statement. The DDL is parsed automatically while you type.

DDL:

```sql
CREATE DEFINER=`root`@`localhost` PROCEDURE `employees_salaries`(IN p_emp_no integer)
BEGIN
select e.first_name, e.last_name, s.salary, s.from_date, s.to_date
from employees e
join salaries s on e.emp_no = s.emp_no
where e.emp_no = p_emp_no;
END
```

Automatic context help is disabled. Use the toolbar t manually get help for the current caret position or t toggle automatic help.

```
#   Time      Action                                Message           Duration / Fetch
1   10:41:51  Apply changes to employees_salaries   Changes applied
```



Schema: employees

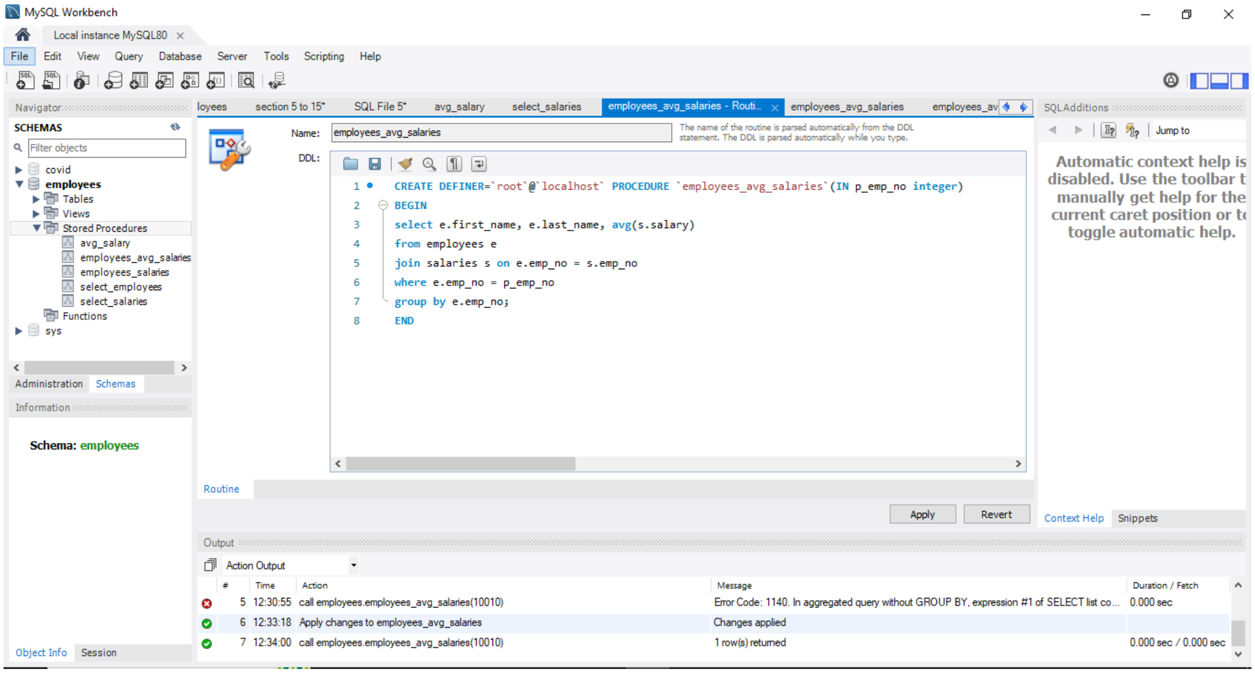
```sql
call employees.employees_salaries(10010);
```

first_name	last_name	salary	from_date	to_date
Duangkaew	Piveteau	72488	1996-11-24	1997-11-24
Duangkaew	Piveteau	74347	1997-11-24	1998-11-24
Duangkaew	Piveteau	75405	1998-11-24	1999-11-24
Duangkaew	Piveteau	78194	1999-11-24	2000-11-23
Duangkaew	Piveteau	79580	2000-11-23	2001-11-23
Duangkaew	Piveteau	80324	2001-11-23	9999-01-01

Automatic context help is disabled. Use the toolbar t manually get help for the current caret position or t toggle automatic help.

```
#   Time      Action                                Message           Duration / Fetch
1   10:41:51  Apply changes to employees_salaries   Changes applied
```

What’s the average salary of employee number: 10010?



Schema: employees

Name: employees_avg_salaries

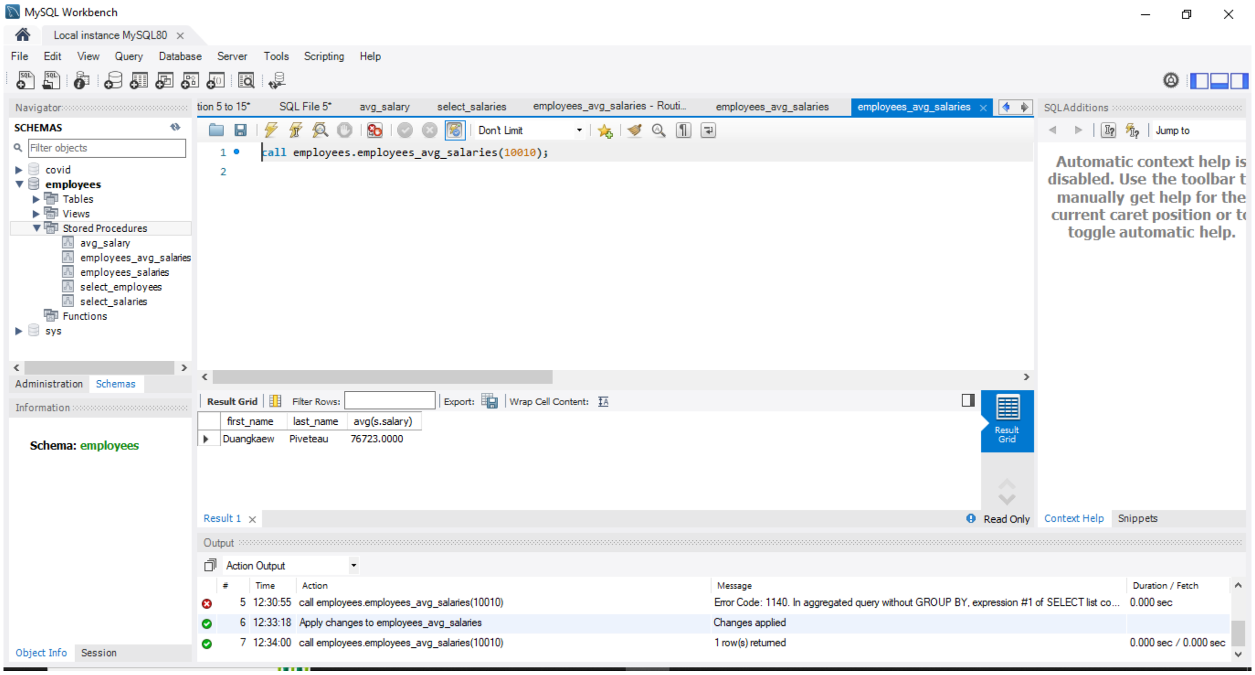
The name of the routine is parsed automatically from the DDL statement. The DDL is parsed automatically while you type.

DDL:

```
CREATE DEFINER=`root`@`localhost` PROCEDURE `employees_avg_salaries`(IN p_emp_no integer)
BEGIN
select e.first_name, e.last_name, avg(s.salary)
from employees e
join salaries s on e.emp_no = s.emp_no
where e.emp_no = p_emp_no
group by e.emp_no;
END
```

Automatic context help is disabled. Use the toolbar t manually get help for the current caret position or t toggle automatic help.

```
#  Time      Action                                           Message                                                                            Duration / Fetch
5  12:30:55  call employees.employees_avg_salaries(10010)     Error Code: 1140. In aggregated query without GROUP BY, expression #1 of SELECT list co...  0.000 sec
6  12:33:18  Apply changes to employees_avg_salaries          Changes applied
7  12:34:00  call employees.employees_avg_salaries(10010)     1 row(s) returned                                                                  0.000 sec / 0.000 sec
```



Schema: employees

```
call employees.employees_avg_salaries(10010);
```

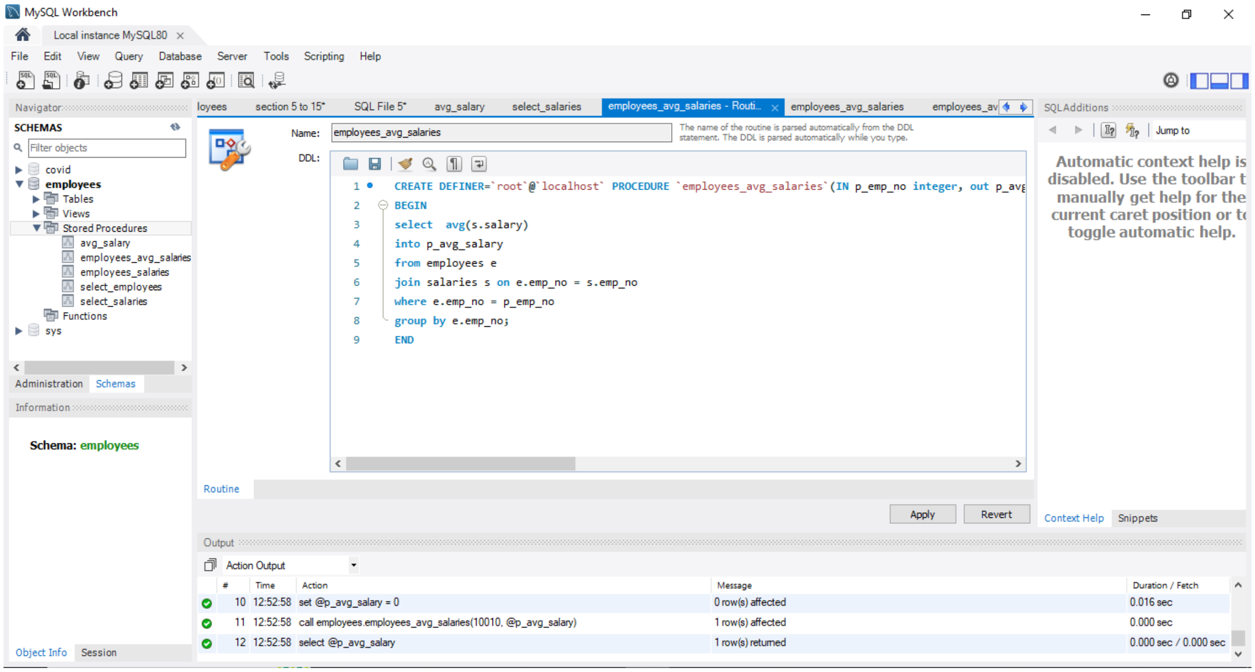
first_name	last_name	avg(s.salary)
Duangkaew	Piveteau	76723.0000

Automatic context help is disabled. Use the toolbar t manually get help for the current caret position or t toggle automatic help.

```
#  Time      Action                                           Message                                                                            Duration / Fetch
5  12:30:55  call employees.employees_avg_salaries(10010)     Error Code: 1140. In aggregated query without GROUP BY, expression #1 of SELECT list co...  0.000 sec
6  12:33:18  Apply changes to employees_avg_salaries          Changes applied
7  12:34:00  call employees.employees_avg_salaries(10010)     1 row(s) returned                                                                  0.000 sec / 0.000 sec
```

Stored Procedure with an OUT Parameter

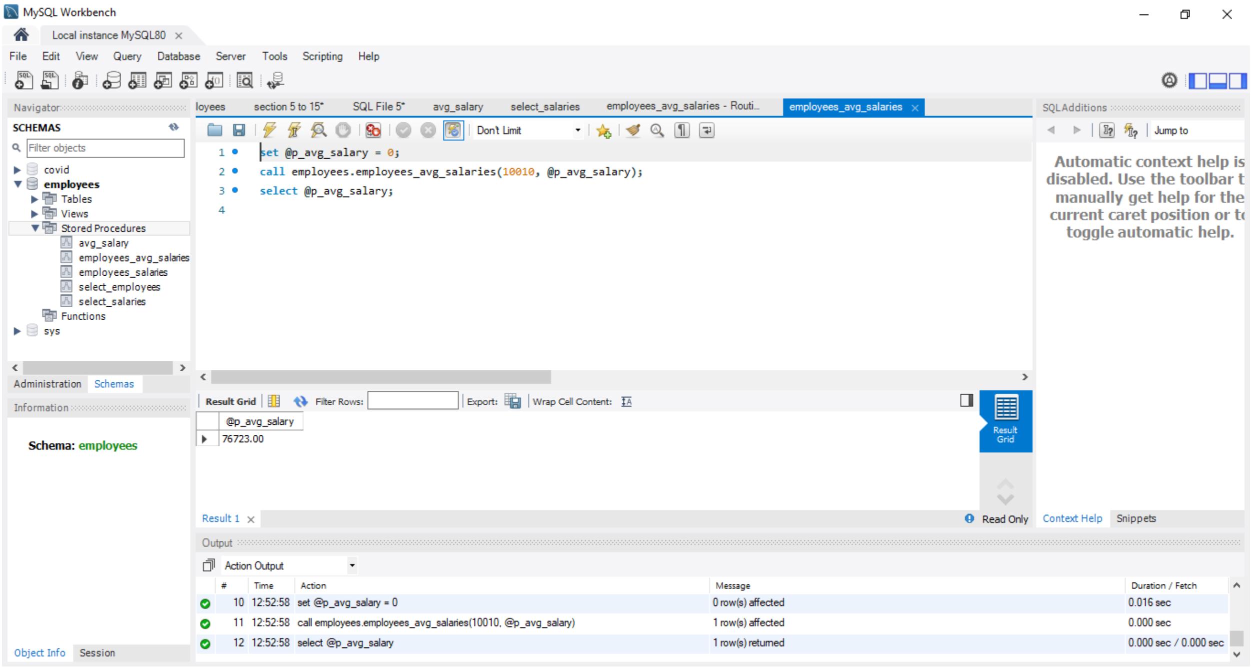
We created another stored procedure using an OUT parameter for the same example discussed above:



Name: employees_avg_salaries

```sql
CREATE DEFINER=`root`@`localhost` PROCEDURE `employees_avg_salaries`(IN p_emp_no integer, out p_avg
BEGIN
select  avg(s.salary)
into p_avg_salary
from employees e
join salaries s on e.emp_no = s.emp_no
where e.emp_no = p_emp_no
group by e.emp_no;
END
```

#	Time	Action	Message	Duration / Fetch
10	12:52:58	set @p_avg_salary = 0	0 row(s) affected	0.016 sec
11	12:52:58	call employees.employees_avg_salaries(10010, @p_avg_salary)	1 row(s) affected	0.000 sec
12	12:52:58	select @p_avg_salary	1 row(s) returned	0.000 sec / 0.000 sec



```sql
set @p_avg_salary = 0;
call employees.employees_avg_salaries(10010, @p_avg_salary);
select @p_avg_salary;
```

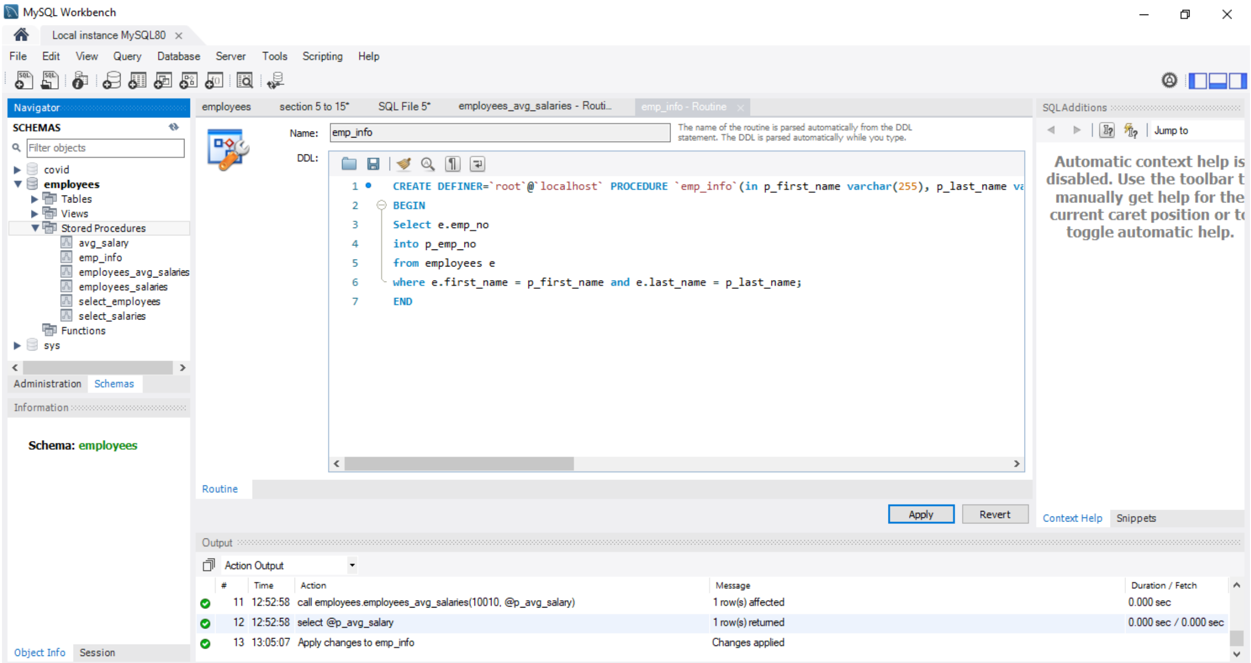
@p_avg_salary
76723.00

#	Time	Action	Message	Duration / Fetch
10	12:52:58	set @p_avg_salary = 0	0 row(s) affected	0.016 sec
11	12:52:58	call employees.employees_avg_salaries(10010, @p_avg_salary)	1 row(s) affected	0.000 sec
12	12:52:58	select @p_avg_salary	1 row(s) returned	0.000 sec / 0.000 sec

Exercise:

Create a procedure called ‘emp_info’ that uses as parameters the first and the last name of an individual, and returns their employee number.

Solution:



Name: emp_info

The name of the routine is parsed automatically from the DDL statement. The DDL is parsed automatically while you type.

DDL:

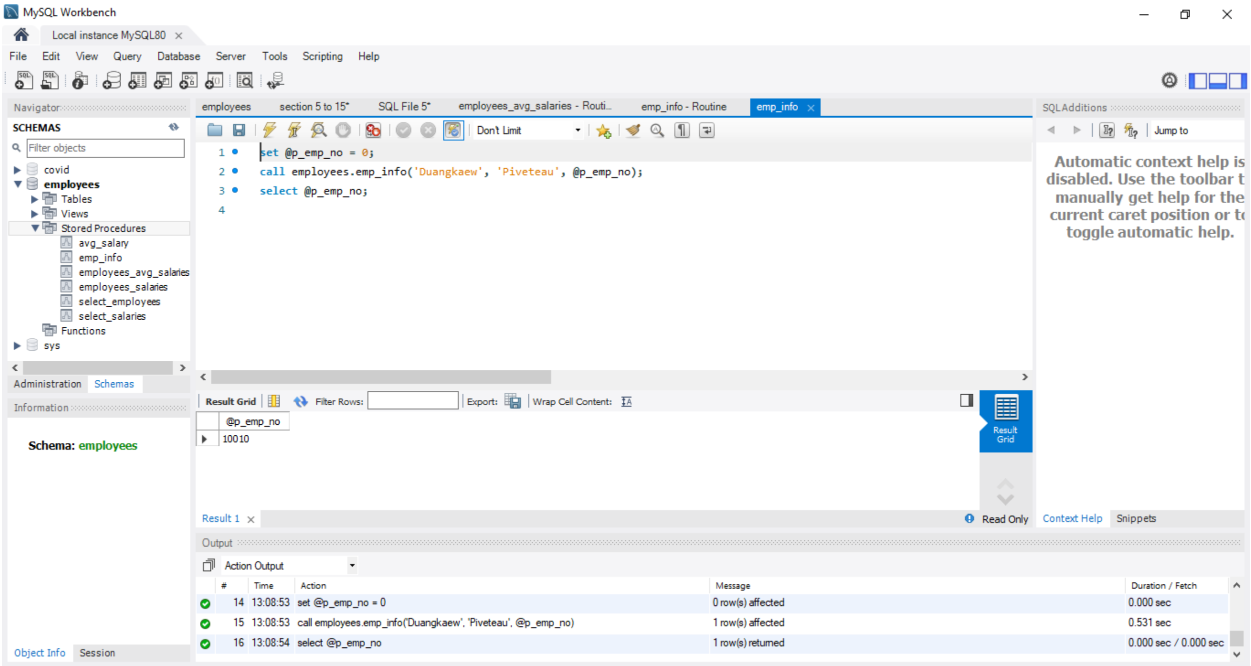
```
CREATE DEFINER=`root`@`localhost` PROCEDURE `emp_info`(in p_first_name varchar(255), p_last_name va
BEGIN
Select e.emp_no
into p_emp_no
from employees e
where e.first_name = p_first_name and e.last_name = p_last_name;
END
```

Schema: employees

Output

Action Output

```
 #   Time      Action                                                          Message            Duration / Fetch
 11  12:52:58  call employees.employees_avg_salaries(10010, @p_avg_salary)     1 row(s) affected  0.000 sec
 12  12:52:58  select @p_avg_salary                                            1 row(s) returned  0.000 sec / 0.000 sec
 13  13:05:07  Apply changes to emp_info                                       Changes applied
```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select_salaries
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employees section 5 to 15* SQL File 5* employees_avg_salaries - Routi... emp_info - Routine emp_info
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Automatic context help is disabled. Use the toolbar t manually get help for the current caret position or to toggle automatic help.
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```
set @p_emp_no = 0;
call employees.emp_info('Duangkaew', 'Piveteau', @p_emp_no);
select @p_emp_no;
```

@p_emp_no
10010

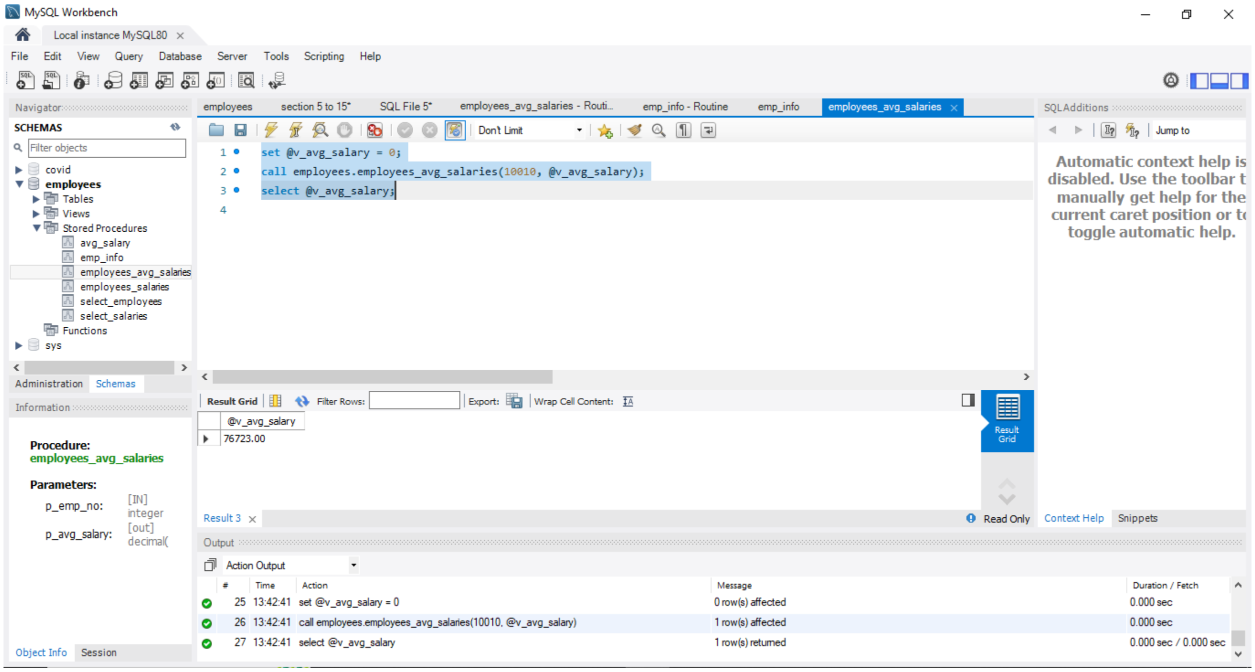
Schema: employees

Output

Action Output

```
 #   Time      Action                                                    Message            Duration / Fetch
 14  13:08:53  set @p_emp_no = 0                                         0 row(s) affected  0.000 sec
 15  13:08:53  call employees.emp_info('Duangkaew', 'Piveteau', @p_emp_no)  1 row(s) affected  0.531 sec
 16  13:08:54  select @p_emp_no                                          1 row(s) returned  0.000 sec / 0.000 sec
```

Variables



```sql
set @v_avg_salary = 0;
call employees.employees_avg_salaries(10010, @v_avg_salary);
select @v_avg_salary;
```

```
@v_avg_salary
76723.00
```

```
#   Time      Action                                                   Message            Duration / Fetch
25  13:42:41  set @v_avg_salary = 0                                    0 row(s) affected  0.000 sec
26  13:42:41  call employees.employees_avg_salaries(10010, @v_avg_salary)  1 row(s) affected  0.000 sec
27  13:42:41  select @v_avg_salary                                     1 row(s) returned  0.000 sec / 0.000 sec
```

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select_employees
select_salaries
Functions
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Information
Procedure: employees_avg_salaries
Parameters:
p_emp_no: [IN] integer
p_avg_salary: [out] decimal(
Object Info Session
employees section 5 to 15* SQL File 5* employees_avg_salaries - Routi... emp_info - Routine emp_info employees_avg_salaries
Don't Limit
Result Grid Filter Rows: Export: Wrap Cell Content:
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SQLAdditions
Jump to
Automatic context help is disabled. Use the toolbar t manually get help for the current caret position or t toggle automatic help.
Context Help Snippets
Output
Action Output

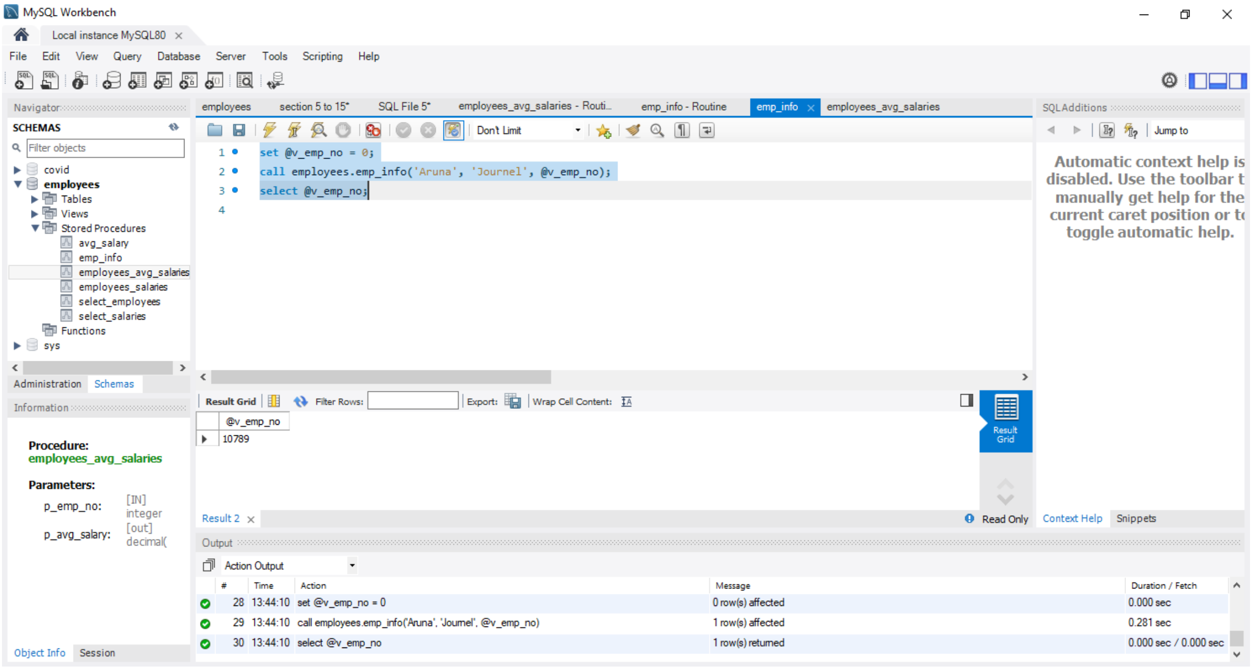
Exercise:

Create a variable, called ‘v_emp_no’, where you will store the output of the procedure you created in the last exercise.

Call the same procedure, inserting the values ‘Aruna’ and ‘Journel’ as a first and last name respectively.

Finally, select the obtained output.

Solution:



```sql
set @v_emp_no = 0;
call employees.emp_info('Aruna', 'Journel', @v_emp_no);
select @v_emp_no;
```

```
@v_emp_no
10789
```

```
#   Time      Action                                           Message            Duration / Fetch
28  13:44:10  set @v_emp_no = 0                                0 row(s) affected  0.000 sec
29  13:44:10  call employees.emp_info('Aruna', 'Journel', @v_emp_no)  1 row(s) affected  0.281 sec
30  13:44:10  select @v_emp_no                                 1 row(s) returned  0.000 sec / 0.000 sec
```

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select_employees
select_salaries
Functions
sys
Administration Schemas
Information
Procedure: employees_avg_salaries
Parameters:
p_emp_no: [IN] integer
p_avg_salary: [out] decimal(
Object Info Session
employees section 5 to 15* SQL File 5* employees_avg_salaries - Routi... emp_info - Routine emp_info employees_avg_salaries
Don't Limit
Result Grid Filter Rows: Export: Wrap Cell Content:
Result 2
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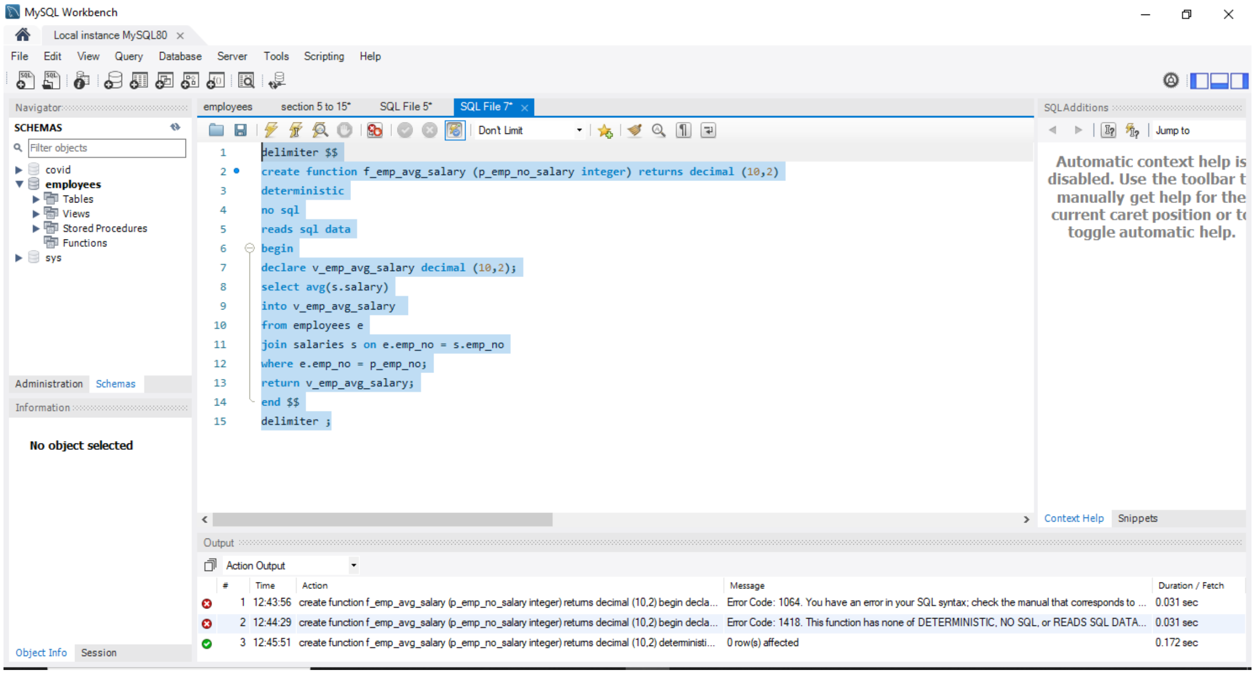
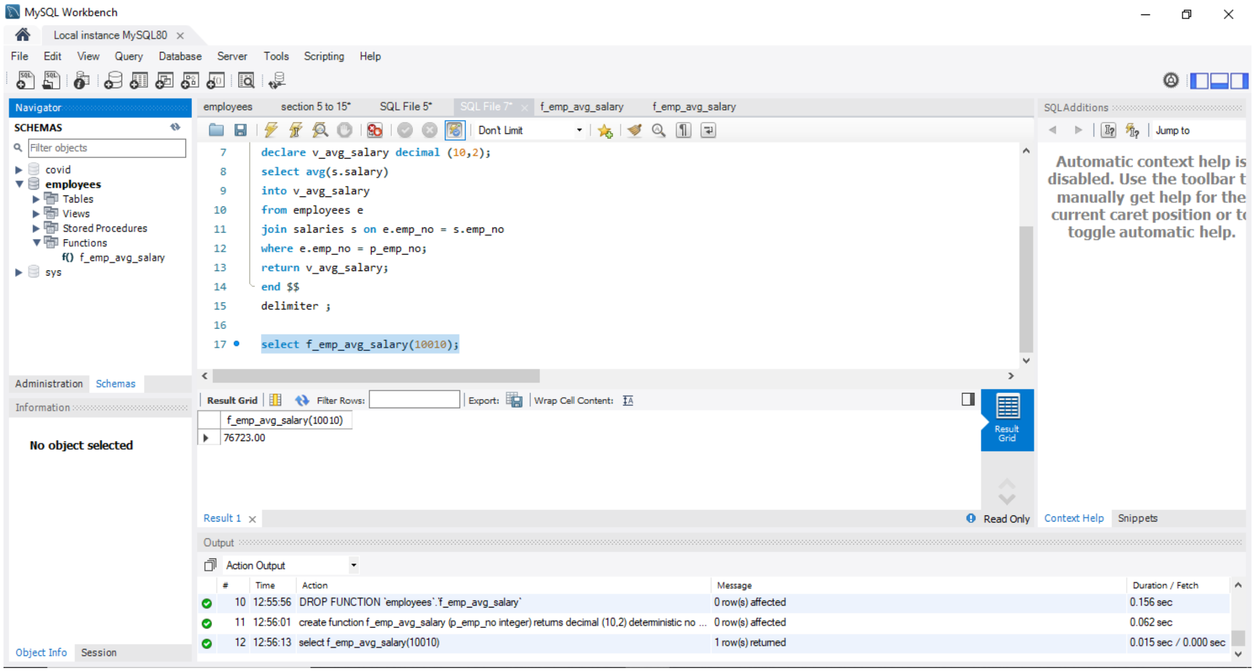
USER-DEFINED FUNCTIONS



```
delimiter $$
create function f_emp_avg_salary (p_emp_no_salary integer) returns decimal (10,2)
deterministic
no sql
reads sql data
begin
declare v_emp_avg_salary decimal (10,2);
select avg(s.salary)
into v_emp_avg_salary
from employees e
join salaries s on e.emp_no = s.emp_no
where e.emp_no = p_emp_no;
return v_emp_avg_salary;
end $$
delimiter ;
```

```
#  Time      Action                                                                                 Message                                                                        Duration / Fetch
1  12:43:56  create function f_emp_avg_salary (p_emp_no_salary integer) returns decimal (10,2) begin decla...  Error Code: 1064. You have an error in your SQL syntax; check the manual that corresponds to ...  0.031 sec
2  12:44:29  create function f_emp_avg_salary (p_emp_no_salary integer) returns decimal (10,2) begin decla...  Error Code: 1418. This function has none of DETERMINISTIC, NO SQL, or READS SQL DATA...  0.031 sec
3  12:45:51  create function f_emp_avg_salary (p_emp_no_salary integer) returns decimal (10,2) deterministi...  0 row(s) affected                                                              0.172 sec
```



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Don't Limit
SQLAdditions
Jump to
Automatic context help is disabled. Use the toolbar t manually get help for the current caret position or t toggle automatic help.
Result Grid Filter Rows: Export: Wrap Cell Content:
Result Grid
Result 1
Read Only
Context Help Snippets
Output
Action Output

```
declare v_avg_salary decimal (10,2);
select avg(s.salary)
into v_avg_salary
from employees e
join salaries s on e.emp_no = s.emp_no
where e.emp_no = p_emp_no;
return v_avg_salary;
end $$
delimiter ;

select f_emp_avg_salary(10010);
```

f_emp_avg_salary(10010)
76723.00

```
#   Time      Action                                                                                   Message             Duration / Fetch
10  12:55:56  DROP FUNCTION `employees`.`f_emp_avg_salary`                                             0 row(s) affected   0.156 sec
11  12:56:01  create function f_emp_avg_salary (p_emp_no integer) returns decimal (10,2) deterministic no ...  0 row(s) affected   0.062 sec
12  12:56:13  select f_emp_avg_salary(10010)                                                           1 row(s) returned   0.015 sec / 0.000 sec
```

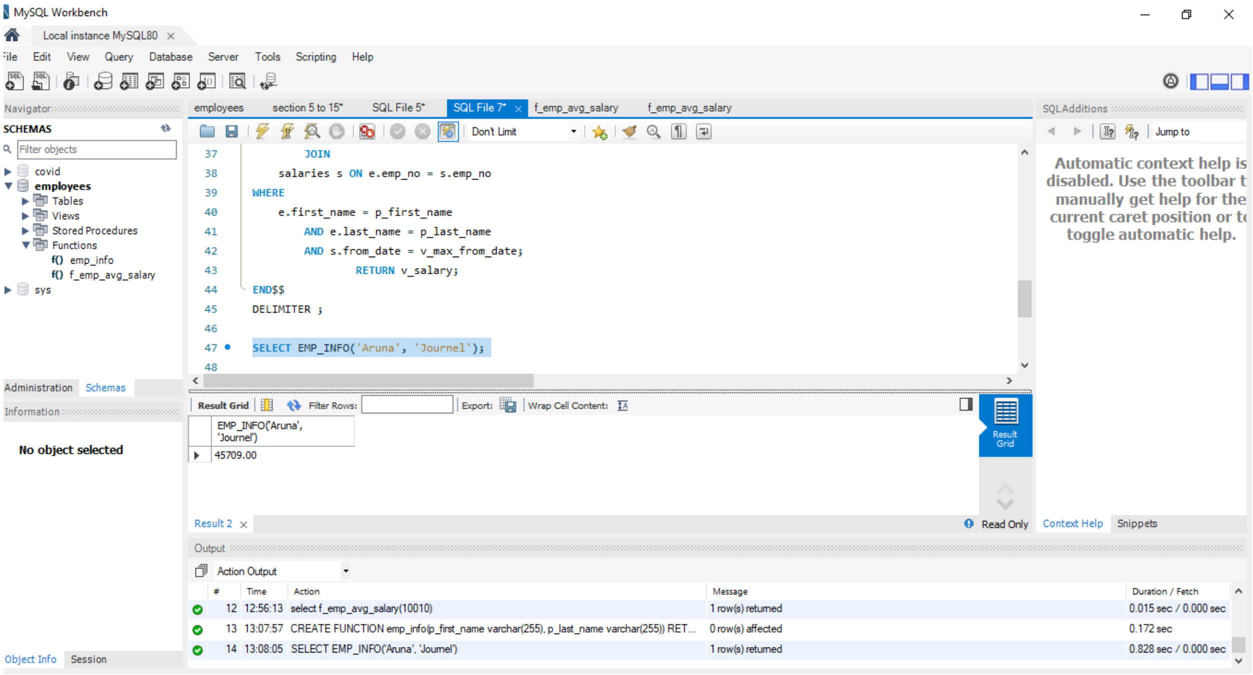
Exercise:

Create a function called 'emp_info' that takes for parameters the first and last name of an employee, and returns the salary from the newest contract of that employee.

Hint: In the BEGIN-END block of this program, you need to declare and use two variables – v_max_from_date that will be of the DATE type, and v_salary, that will be of the DECIMAL (10,2) type.

Finally, select this function.

Solution:



```
        JOIN
    salaries s ON e.emp_no = s.emp_no
WHERE
    e.first_name = p_first_name
        AND e.last_name = p_last_name
        AND s.from_date = v_max_from_date;
            RETURN v_salary;
END$$
DELIMITER ;

SELECT EMP_INFO('Aruna', 'Journel');
```

EMP_INFO('Aruna', 'Journel')
45709.00

Automatic context help is disabled. Use the toolbar t manually get help for the current caret position or t toggle automatic help.

```
#   Time      Action                                                                      Message              Duration / Fetch
12  12:56:13  select f_emp_avg_salary(10010)                                              1 row(s) returned    0.015 sec / 0.000 sec
13  13:07:57  CREATE FUNCTION emp_info(p_first_name varchar(255), p_last_name varchar(255)) RET...  0 row(s) affected    0.172 sec
14  13:08:05  SELECT EMP_INFO('Aruna', 'Journel')                                         1 row(s) returned    0.828 sec / 0.000 sec
```