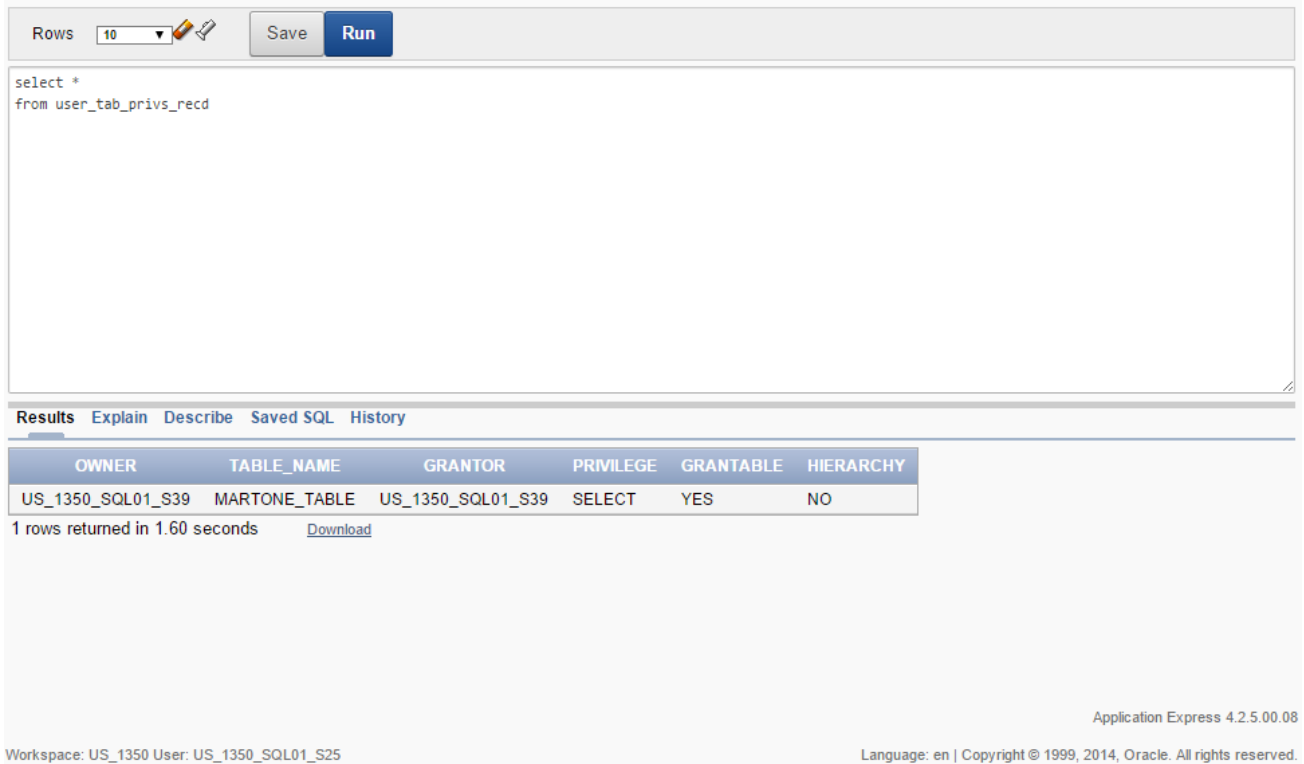


Section 13 Lesson 1: Controlling User Access

Try It / Solve It

1. What are system privileges concerned with? [System privileges determine what the user can do at the database level.](#)
2. What are object privileges concerned with? [This level of security covers access and use of the database objects and actions users can have on those objects.](#)
3. What is another name for object security? [Object security is also known as object privileges.](#)
4. What commands are necessary to allow Scott access to the database with a password of tiger?
[CREATE USER Scott](#)
[IDENTIFIED BY tiger;](#)
5. What are the commands to allow Scott to SELECT from and UPDATE the d_clients table?
[GRANT select, update](#)
[ON d_clients](#)
[TO Scott;](#)
6. What is the command to allow everybody the ability to view the d_songs table?
[GRANT select](#)
[ON d_songs](#)
[TO PUBLIC;](#)

7. Query the data dictionary to view the object privileges granted to you the user.



The screenshot shows the Oracle Application Express interface. At the top, there is a toolbar with 'Rows' set to 10, a 'Save' button, and a 'Run' button. Below the toolbar is a text area containing the SQL query:

```
select *
from user_tab_privs_recd
```

Below the text area is a tabbed interface with 'Results' selected. The results are displayed in a table with the following columns: OWNER, TABLE_NAME, GRANTOR, PRIVILEGE, GRANTABLE, and HIERARCHY. The table contains one row of data:

OWNER	TABLE_NAME	GRANTOR	PRIVILEGE	GRANTABLE	HIERARCHY
US_1350_SQL01_S39	MARTONE_TABLE	US_1350_SQL01_S39	SELECT	YES	NO

Below the table, it says '1 rows returned in 1.60 seconds' and there is a 'Download' link. At the bottom right, it says 'Application Express 4.2.5.00.08'. At the bottom left, it says 'Workspace: US_1350 User: US_1350_SQL01_S25'. At the bottom right, it says 'Language: en | Copyright © 1999, 2014, Oracle. All rights reserved.'

8. What privilege should a user be given to create tables?

GRANT create table

TO Scott;

9. If you create a table, how can you pass along privileges to other users just to view your table?

GRANT select

ON US_1350_SQL01_S25.created_table

TO PUBLIC;

10. What syntax would you use to grant another user access to your copy_employees table?

GRANT select

ON Omie.copy_employees

TO user;

11. How can you find out what privileges you have been granted for columns in the tables belonging to others?

SELECT *

FROM USER_COL_PRIVS_RECD;

Section 13 Lesson 2: Creating and Revoking Object Privileges

Try It / Solve It

1. What is a role? A role is a named group of related privileges that can be granted to a user.
2. What are the advantages of a role to a DBA? Roles make it easier to revoke and maintain privileges. A user can have access to several roles, and several users can have access to the same role.
3. Give the ability to another user in your class to look at one of your tables. Give him the right to let other students have that ability.

```
CREATE ROLE student;
```

```
GRANT select  
ON US_1350_SQL01_S25.c  
TO student;
```

```
GRANT student TO US_1350_SQL01_S18;
```

4. You are the DBA. You are creating many users who require the same system privileges. What should you use to make your job easier?
Define the system privileges to one role and assign the role to each user.
5. What is the syntax to accomplish the following?

- a. Create a role of manager that has the privileges to select, insert, and update and delete from the employees table

```
CREATE ROLE manager;
```

```
GRANT select, insert, update, delete  
ON employees  
TO manager;
```

- b. Create a role of clerk that just has the privileges of select and insert on the employees table

```
CREATE ROLE clerk;
```

```
GRANT select, insert  
ON employees  
TO clerk;
```

- c. Grant the manager role to user scott

```
GRANT manager TO scott;
```

- d. Revoke the ability to delete from the employees table from the manager role

REVOKE delete

ON employees

FROM manager;


6. What is the purpose of a database link?

A database link is a pointer that defines a one-way communication path from one Oracle database to another Oracle database. This allows users to access a remote database without having to be a user on the remote database.

Section 13 Lesson 3: Regular Expressions

Try It / Solve It

1. Working with the employees table, and using regular expressions, write a query that returns employees whose first names start with a “S” (uppercase) followed by either a “t” (lowercase) or “h” (lowercase).

Rows 

Save

Run

```
select *
from employees
where regexp_like
(first_name, 'S(t|h)+');
```

Results

Explain

Describe

Saved SQL

History

EMPLOYEE_ID	FIRST_NAME	LAST_NAME	EMAIL	PHONE_NUMBER	HIRE_DATE	JOB_ID	SALARY	COMMISSION_PCT	MANAGER_ID	DEPARTMENT_ID
100	Steven	King	SKING	515.123.4567	17/Jun/1987	AD_PRES	24000	-	-	90
205	Shelley	Higgins	SHIGGINS	515.123.8080	07/Jun/1994	AC_MGR	12000	-	101	110

2 rows returned in 0.01 seconds [Download](#)

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2. Investigate the LOCATIONS table.

a. Describe the table.

Rows
Save Run

```
describe locations;
```

[Results](#) [Explain](#) [Describe](#) [Saved SQL](#) [History](#)

Object Type [TABLE](#) Object [LOCATIONS](#)

Table	Column	Data Type	Length	Precision	Scale	Primary Key	Nullable	Default	Comment
LOCATIONS	LOCATION_ID	NUMBER	-	4	0	1	-	-	Primary key of locations table
	STREET_ADDRESS	VARCHAR2	40	-	-	-	✓	-	Street address of an office, warehouse, or production site of a company. Contains building number and street name
	POSTAL_CODE	VARCHAR2	12	-	-	-	✓	-	Postal code of the location of an office, warehouse, or production site of a company.
	CITY	VARCHAR2	30	-	-	-	-	-	A not null column that shows city where an office, warehouse, or production site of a company is located.
	STATE_PROVINCE	VARCHAR2	25	-	-	-	✓	-	State or Province where an office, warehouse, or production site of a company is located.
	COUNTRY_ID	CHAR	2	-	-	-	✓	-	Country where an office, warehouse, or production site of a company is located. Foreign key to country_id column of the countries table.
1 - 6									

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b. Perform a select that returns all rows and all columns of that table.

Rows
10
Save
Run

```

select *
from locations;

```

Results Explain Describe Saved SQL History

LOCATION_ID	STREET_ADDRESS	POSTAL_CODE	CITY	STATE_PROVINCE	COUNTRY_ID
1800	460 Bloor St. W.	ON M5S 1X8	Toronto	Ontario	CA
2500	Magdalen Centre, The Oxford Science Park	OX9 9ZB	Oxford	Oxford	UK
1400	2014 Jabberwocky Rd	26192	Southlake	Texas	US
1500	2011 Interiors Blvd	99236	South San Francisco	California	US
1700	2004 Charade Rd	98199	Seattle	Washington	US

5 rows returned in 0.00 seconds [Download](#)

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- c. Write a query using regular expressions that removes the spaces in the street_address column in the LOCATIONS table.

Rows

Save Run

```
select regexp_replace(street_address, ' ', '')  
from locations;
```

Results Explain Describe Saved SQL History

REGEXP_REPLACE(STREET_ADDRESS, ' ')

460BloorSt.W.
MagdalenCentre,TheOxfordSciencePark
2014JabberwockyRd
2011InteriorsBlvd
2004CharadeRd

5 rows returned in 0.00 seconds [Download](#)

Workspace: US_1350 User: US_1350_SQL01_S25